



**MISSOURI DEPARTMENT OF TRANSPORTATION**  
**ADULT PASSENGER LIGHT DUTY CUTAWAY**  
**TYPE VEHICLE SPECIFICATIONS**  
**WIDE BODY**

1. The intent of these general specifications is to describe a commercial non-school bus type vehicle that will be manufactured, structured and assembled by using best quality materials, components and workmanship in accordance with sound engineering principles and manufacturing practices to provide safe and reliable highway and city transportation for ambulatory and nonambulatory adult passengers.
2. Chassis types - Cutaway Vans, Commercial Cutaways or R.V. Cutaways, 2010 or 2011 model year, General Motors 12,300 GVW, Ford Super Duty 14,500 GVW or approved equal. All vehicles must meet GVW requirements for anticipated passenger load. If for any reason a 2010 model cannot be supplied a 2011 model must be furnished at quoted bid price. This will only be exercised in the event a successful bidder received a purchase order in time to order a chassis and failed to do so. Floor Plan LL may utilize a 158" 12,500 GVW chassis.

Minimum 60% domestic contents, final assembly in USA.

MoDOT reserves the right to conduct in-plant inspections.

3. Body Exterior - The materials used and the assembly method of the roof, side panels, and floor will be the manufacturer's standard construction, uniformly connected, lapped and sealed providing a weather and dust proof body. Drip rails shall be installed above all doors to prevent water leakage into bus. Drip rails will be 3/4" or more in width. Each vehicle will be thoroughly water tested before delivery. A 23' body is acceptable provided it meets all interior dimensions. Floor Plan LL may be a 21' body.
4. Body Interior - The inner construction must provide equal protection to passengers regardless of where they are seated.

The inner frame, at the floor, front and rear ends shall be heavy steel construction that will provide solid support for inner crash shield and exterior panels. The frame shall be securely anchored to adequately spaced steel floor cross members.

The entire structure must provide maximum resistance to impact and collision and meet or exceed the rollover protection requirement of all federal regulations. (FMVSS 220).

Headliner - Shall be full length for driver and passenger area. This headliner shall

have longitudinal and cross member supports where needed to prevent flexing and vibrations.

Side and End Panels - To be complete on all doors, sidewalls and rear end.

Floor and Floor Covering - The entire floor except driver's area, wheelwells, and stepwells shall be made level from end to end and side to side with marine grade plywood a minimum of 3/4" thick securely installed by glue, screws or a combination of methods that will assure a permanent fitted floor. Fiberglass re-enforced plywood is also acceptable. The plywood floor shall be covered with a minimum of 2.2 mm thick, vinyl transit type floor covering. All seams are to be heat welded. Heat welding only applies when mating of similar surfaces. There will also be an aluminum polyethylene or galvanized, belly pan located under the floor to prevent moisture entrance. Exposed rear wheel wells are acceptable. Floor Plan LL will require a raised floor.

The entranceway and aisle will be non-skid type and under the seats it will be smooth with anti-skid properties. The driver area and wheelhouse covering may be either smooth or anti-skid type. All floor coverings will meet ADA requirements 49 CFR 38.25. Flooring in Securement area will meet ADA requirement 49 CFR 38.25(a) for slip resistance (anti-skid throughout).

There will also be a standee line in aisleway that meets all Federal Motor Carrier Safety Regulations 49 CFR 393.90.

All exposed edges around the wall, doors and entranceways shall be trimmed with a molding securely attached providing a waterproof seal.

Insulation - The interior dash firewall, lower panels, doors, floor, sidewalls, roof headliner and etc. shall be insulated.

Grabrails, Stanchions - A floor to ceiling stanchion shall be installed near the aisle and immediately left of the entrance door. This stanchion shall be connected to the vehicle right side by a guardrail approximately 30" above the floor.

A floor to ceiling stanchion shall be installed in close proximity to the rear, right side of the driver's seat. This stanchion shall be connected to the vehicle's left hand side wall by a guardrail approximately 30" above the floor. The stanchion and guardrail shall not impair the driver's seat adjustment. Two stanchions with modesty panels behind the driver's seat are also acceptable.

A solid material modesty panel shall be provided with the entry door stanchion and guardrail (right hand front seat).

Spacing of these guardrails and panels must provide adequate passenger knee room.

There will also be two overhead grabrails mounted securely above the passenger

aisleway. These grabrails will meet ADA requirement 49 CFR 38.29. One overhead rail is acceptable if storage compartment is an issue.

There shall be two grabrails mounted along the both sides of the stepwell. These handles to be approximately 18" in length and to be securely mounted to the vehicle to provide a secure handhold for boarding passengers. Both stepwell handrails will be parallel to each other and be mounted along the entire length of the stepwell.

All stanchions guardrails, grabhandles, and grabrails will be mounted to the floor or ceiling with at least four screws.

All handrails and stanchions will meet ADA requirement 49 CFR 38.29.

Seating, Seat Belts, and Seating Arrangements - See Exhibits AA, CC, DD, FF, GG, HH, II, JJ, and LL. The arrangements shall provide seating as listed and as shown on the appropriate exhibit.

If there is a conflict between the written specification and the floor plan diagram, the written narrative controls. Narrative controls the design.

The driver's seat shall be a power adjustable (vertical and horizontal) high-back bucket type with full depth foam padded seat cushion and backrest covered with a cloth material. Include a folding armrest on the right-hand side.

The conventional type two-passenger seats shall be a minimum width of 35" and spaced on a minimum of 30" centers. No exceptions will be allowed in seat spacing or width.

One-passenger seats shall be 17" wide.

All passenger seats shall be a minimum depth of 16", the backrests shall be a minimum thickness of 2". All seats frames will be completely painted or powder coated.

All passenger seat cushions and backrests shall be covered with a minimum level 3 vinyl material. Seat cushions and backrests shall have full depth foam padding. The seat cushion padding shall have a density (4" minimum) sufficient to support occupants. Low-back style seats manufactured by the Freedman, C. E. White Seating Company, or American Seating (or approved equal) will be preferred type. All seats will meet or exceed the requirements of FMVSS 210. Please include testing certification with your bid.

All passenger seats will have folding armrests on the aisle sides.

The walk-through aisle between right and left hand seats shall be a minimum of 14".

The driver and all passenger seats shall have best quality seat belts properly located and easily accessible. The driver's seat belts shall have minimum usable extension of 60" measured from the seat cushion to the buckle. The passenger seat belts will have to be designed to encircle the largest of individuals (minimum usable extensions of 60"). All seating positions will have 60" seat belts with retractors (no traveling retractors). The permanent front seats will be designated as priority seating. Include three (3) 8" extensions with each vehicle. These extensions will interchange with other belts used on the vehicle.

Cutaways will have two ambulatory seating positions that have non-retractable lap belts, for the use with child safety seats. These will be located in the center of the vehicle on the aisle sides of the seats.

#### Fold-A-Way Type Seat Requirements:

Fold-A-Way type seats shall meet all dimensional, structural and testing requirements of the standard seat specification.

All seats shall be forward facing for ambulatory passengers and fold against the wall when wheelchair space is required.

In the folded position, the seat may extend into the bus no further than 10" installed at 90 degree to maximize space for wheelchair loading and positioning. A full 30" x 48" free securement area must be maintained.

In the down, fixed position, the seat may not extend into the aisle more than 36" to preserve aisle space.

Fold-A-Way type seats shall be Braun Series 5, Freedman 3 step Fold Away, C. E. White model 35, American E-Z fold, or approved equal.

Fold-A-Way seats mounted over a wheelwell may have non-retractable seat belts in lieu of retractable seat belts.

All floor plans will have one integrated child seat that will safely accommodate children between 20 and 60 lbs. This seat will be of a fixed two-passenger design and will be located at the rear of the vehicle. Freedman ICS, American ICS or approved equal will be acceptable.

All floor plans will have at least three seating positions that meet the FMVSS 225 latch system requirement for child safety seats. They may be located on either fixed seats, or folding seats and must be designated safety seat locations. The preferred location of these positions will be on the aisle side of two-passenger seats. All FMVSS 225 seating positions will have a non-retractable 60" lap belt.

**NOTE** - All folding or fold-a-way seats will be two passengers.

### Floor Plan Descriptions

Exhibit "AA" – This plan will provide for 12 two-passenger forward facing seats to allow for a total ambulatory capacity of 24. There will be no lift of wheelchair positions.

Exhibit "CC" – This arrangement shall provide 7 two-passenger forward facing seats to allow for ambulatory capacity of 14 adults. There will also be two forward facing wheelchair positions along with three folding seats to be located at each wheelchair position.

Exhibit "DD" - this plan consists of 10 two-passenger forward facing seats allowing for a total ambulatory capacity for 20 adults. There are no wheelchair positions or wheelchair lift.

Exhibit "FF" - this floor plan requires four two-passenger seats permanently affixed to the floor and three wheelchair positions. The bus will be lift equipped, and the first, second, and their wheelchair positions will be forward facing and permanent. There will be a single seat mounted over the wheelwell or on the driver's side in the rear of the vehicle.

Exhibit "GG" - this plan requires five wheelchair positions (forward facing) ambulatory seating capacity for four adults. The one-two passenger seat shall be placed over the fender well and the two 18" seats shall be placed as diagrammed. This bus will be lift equipped.

Exhibit "HH" - this floor plan will provide two permanent wheelchair positions. The lift will be located at the right rear of the bus and all permanent ambulatory seating will be located towards the front (16 passenger ambulatory capacity).

Exhibit "II" - this floor plan will be similar to "HH" except it will seat 12 ambulatory instead of 16.

Exhibit "JJ" – This floor plan will provide four two-passenger seats on the lift side of the vehicle and five two-passenger fold-a-way seats on the driver's side of the vehicle. One one-passenger fixed seat will be located on the wheel well on the driver's side, or in the rear of the vehicle on the driver's side. Three wheelchair positions will be located as shown on the exhibit.

Exhibit "LL" – this floor plan will utilize four (4) two-passenger fold-a-way seats on the street side and two (2) two-passenger fixed seats on the curb side. This floor plan will require a raised floor. Wheelchair positions and lift area will be as shown on Exhibit LL.

5. Windshield, Door Glass and Window Glass - Safety plate windshield and window glass all around.

The windshield shall be fixed glass.

Passenger side windows shall be provided throughout the passenger area. These windows will be a horizontal opening type that easily open and close. These windows shall meet all the latest federal regulations for retention and release. Kick-out type windows will be hinged at the top. All windows that are considered as emergency exits will be clearly marked. A full-length drip molding of at least 3/4" will be installed over each passenger window opening.

The driver position, on buses with right hand front entrance door only, shall have a window that can be opened for ventilation at the left side.

The dual right hand passenger entrance doors shall have full-length windows that will allow the driver to judge curb location.

The emergency rear door shall have an upper and lower fixed glass.

There will be glass on each side of the emergency door, approximately 24" x 24" or 7" x 30".

The windshield, driver position side window, and rear emergency door glass will be tinted. The passenger entrance door glass will be tinted in the upper part and may be clear in the lower part.

All passenger area side window glass will be tinted. An approximate tinting of 30% light transfer is acceptable.

All sliding side windows will have inside latches for security.

All windows, doors, and windshield will be installed to keep water and dust leakage to an absolute minimum. Proper sealing during installation is essential.

## 6. Doors

Front - One door RH or two doors LH and RH acceptable.

Entrance LH - If required - This door shall be the chassis manufacturer's standard front side door with tinted drop glass armrest and lock. This door may be modified if necessary.

Entrance RH - Main service door may be either forward folding, in-out or out-out opening type. This door shall provide no stoop entry headroom with a minimum of 72" entrance height from the top of the first entrance step to the door headliners. The minimum width shall be a 24". The top of the door entrance shall be fully enclosed and protected from weather and other elements. It shall have protective padding to prevent head injury when entering or exiting.

All vehicles will have an electrically operated door. The electric door will also be forward folding, in out or out-out opening type. This door will be operated by a switch from the driver's areas. There will also be a key activated switch on the

right exterior of the bus so the door can be opened from the outside. The door and control arms will be located above the door area, not beneath the stepwell.

Either door shall have a below floor level entrance stepwell, with a minimum of two steps. These steps shall be stationary, corrosion resistant steel adequately braced and be an integral part of the basic structure. The height from ground to top of first step of empty vehicle be a maximum of 13-1/2" and a minimum of 10". Additional step heights will be a maximum of 11", the head depth for all steps shall be a minimum of 8". All of the steps shall be level and the risers shall be vertical and not angled.

Each step will be covered with molded rubber or vinyl. The step covering will be non-skid type tread with white or yellow nosing. The riser shall be covered, painted, or coated with scuff resistant material.

These steps will be fully recessed, enclosed and protected from weather and other elements. Door sweeps will be installed on bottom edges of doors.

A stepwell light shall be provided and automatically operated by door control.

The entire door shall be weather stripped to provide a water and airtight seal. The door edge seals will be the over-lapping type to provide maximum sealing ability.

The door opening shall be structurally reinforced to have the same structural integrity as the body.

(If Required) RH side lift door or doors - This entranceway may have either single or dual swing-out type door or doors (single preferred). Catches will be provided to keep doors open during lift operations.

The door(s) height extended from the floor to the top and side-to-side of the entranceway shall provide adequate clearance for the ramp and wheelchair entry. (68" minimum)

This entranceway will be located forward in the right hand side of the body, across from the wheelchair securement area or in the rear of the bus, along the curbside. Please note lift position in each floor plan.

Lift door will meet all requirements of ADA 49 CFR 38.25.

The entranceway shall be protected from weather and other elements and be padded to prevent head and other injuries to passengers when exiting or entering.

Rear Emergency Door - This door shall be outward opening type, clearly marked as exits. The dimensions of this door will be approximately 32" wide and 50" high. This door shall have an open door warning buzzer and will be sealed to minimize dust and moisture entry. A red light will be installed to meet Federal Motor Carrier Safety regulations (49 CFR 393.92).

This door opening shall have protective padding to prevent head injury when exiting.

The rear emergency door must have an inside latch and release mechanism and outside handle. This door shall have factory installed position hold and check arm. All doors will meet ADA requirement 49 CFR 38.25.

Door Lock System - The bus shall have a security door lock system for all doors.

7. Wheelchair Lift (if required)

The lift shall be an electrohydraulic type providing power-up, power or gravity down and power automatic fold. The power source shall be the vehicle 12-volt electrical system. The lift will be mounted within the body with access through the right hand side load door or doors. Modifications for the lift installation must not affect the structural integrity of the basic vehicle.

The lift shall have a minimum rated working load capacity of 800 lbs.

The lift will have no dirty or greasy surfaces that will contact the wheelchair occupant during normal operation.

The lift platform shall be constructed of expanded metal with a minimum usable width of 33" and a minimum depth of 51".

Platforms will be yellow with the exception that all edges of the platform surface, the visible edge of the vehicle floor or bridging device adjacent to the platform lift, and any designated standing area on the lift have outlines of at least 25 mm (1 in) wide and of color that contrasts with its background.

The lift shall have the following:

A manual override to lower, to raise and an emergency platform release for use in the event of power failure. The pump handle will be able to function without interference from interior obstructions.

The platform device shall lock in an upward position acting as a curb before the platform has departed ground level and pivots downward upon ground contact, acting as an entry ramp. There will also be a similar safety barrier on the inboard side of the lift platform. Both barriers shall be a minimum of 6" in height.

There shall be a door activated power cutoff device to prevent movement of the lift when vehicle doors are closed.

Two handrails for use by the wheelchair occupant or standee. These rails shall automatically fold up or down with platform movement and shall fold flat against the platform during transport.

An automatic down pressure cutoff device shall stop downward movement of the platform upon contact with any obstruction or the ground.

The lift shall have automatic controls to perform all functions. The control shall be a hand held, cord mounted console control, with sufficient cord length to allow operator to control the lift from inside or outside the vehicle.

Any part of the lift assembly protruding into the body that could be hazardous must be properly padded for passenger protection. This includes the lift end barrier. Manufacturers flexible end barrier meets these requirements.

The electrohydraulic lift system shall have a monitoring device requiring no tools to allow for fluid level check.

The lift system and mechanisms must be easily accessible for repair and maintenance without dismantling and removal from body. The lift circuit breakers or fuses will be mounted near the second battery and in the battery box.

The preferred lift will be a S-5510 series Ricon, Maxon WL-7, Braun Millennium or Century Series 2, or approved equal.

These lifts will have nine interlocks as defined in FMVSS 403.

The lift must provide either a safety belt occupant restraint system inter-locked to lift operation or an outside end barrier that locks in place before the lift platform leaves the ground more than 4". Both systems are to reduce the chances of a lift passenger falling or rolling off the lift platform during lift operation.

All lifts will meet ADA requirement 49 CFR 38.23

#### 8. Wheelchair Securement System and Area

Each wheelchair tie down securement area shall be equipped with a minimum of four (4) wheelchair restraint securement belts designed to meet all ADA requirements and 30-mph/20g impact.

The wheelchair securement tie down belts shall be retractable into a protected steel housing and eliminate the need for belt cleaning and storage. The belt housing and mechanical retractor shall be designed for a minimum of five (5) year life. Belts will incorporate a S-hook or J-hook design to secure belts to the mobility aid. Include four (4) 16" "quick straps", or approved equal for each securement location.

The location of the rear belts shall be positioned to allow the driver to secure the wheelchair frame between the rear wheelchair wheels. The retractable belts shall feature positive locking mechanisms. The belts shall be equipped with a release tab to release tension on the belts when unfastening the wheelchair and to take up

the excess belt when securing the wheelchair.

The retractable belts shall feature positive locking mechanisms and be fully automatic. Once the front belts have been attached to the wheelchair frame, a tension knob attached to all belt housings shall be applied to bring the wheelchair passenger and chair into a state of securement. All belts shall be designed for a minimum life of five (5) years. All belts will utilize a flush floor mount L-Track with flanged edges for securement to the floor. Sure-Lok Titan tie-downs and Q Straint Deluxe are an “approved equals”.

The wheelchair occupant restraints shall be FMVSS Type II (combination lap and shoulder belt) with an adjustable height shoulder belt featuring a single-point release buckle for quick release at hip point. This system will also be fully retractable.

Include one set of the following: Sure-Lok AL 700842, FF 200637-020-05, and FE 200732; Q-Straint Q8-6325A and Q5634024INT or approved equal for one wheelchair position.

The restraint system shall be so designed, configured and installed as to accommodate the greatest possible variety of wheelchair designs and sizes. There will be wall-mounted pouches for storing all belts and securement devices.

Use of the restraint system under normal conditions shall not cause any damage to the mobility aid.

The (2) after and the (2) forward restraints shall be securely anchored to the vehicle seating components or to anchor floor points and all belts shall be retracted back into their cases for storage, organization, and cleanliness when not in use. There shall be four tracks running the entire length of the securement area. (Except Floor Plans GG rear positions, HH, and II. These plans will have tracks that run the entire width of the securement area.

Spacing of these tracks shall provide a safe and efficient anchor point for the retractors.

On Floor Plans CC, FF, GG, JJ, and LL the shoulder belt L-tracks will run the entire length of the securement stations with wheelchairs located in front of each other.

All belts and belt anchor points shall be strong enough to comply with FMVSS 210 and FMVSS 222.

All belts shall feature positive locking mechanisms to ensure passenger security.

All wheelchair tie down belts shall have adjustable tensioners.

Easy to secure and release torso pads which encompass both the wheelchair and

occupant shall be included for each wheelchair position. All securement devices and lift area designs will meet ADA requirement 49 CFR 38.23.

9. Air Conditioning, Heating, Defrosting and Cooling - Front and Rear

Heating and Defrosting - The high out-put heating system shall consist of front units to provide heat in the driver's, the entranceway and surrounding area. Underseat units shall provide for passenger comfort in the rear compartment. They shall be floor mounted and provide a minimum of 30,000 BTU's. Rear unit will be floor mounted and located behind the rear wheel wells.

The OEM defrosting and defogging system shall keep the windshield and all windows free of frost and condensation.

The system shall be supplied with hot water from the vehicle engine. Shut-off valves shall be provided and easily accessed from under the hood or body and be clearly labeled.

A description of the system and the BTU output will be included with all bids.

All controls shall be installed in a panel easily accessible to the driver.

Cooling - The system shall be powered by the vehicle engine and have a rated total output capacity of approximately 65,000 BTU's. All bolts used in mounting and securement of both compressors will be a grade 5 or higher. Hoses, fittings and clamps will be constructed to meet or exceed SAE specification J2064-Type D. The construction of the clamps will be of stainless steel and will be of a quick click design (or approved equal) to ensure coupling integrity all aftermarket hoses will be nylon lined.

Free blow cool air distribution shall be mounted overhead of the passenger seats. Adjustable air outlets to control and direct the flow of cooled air shall be installed for the comfort of passengers. The rear-cooling unit shall have a capacity of at least 53,000 BTU's. This rear-cooling unit will have a 3-speed fan control switch (off, low, medium, and high). Unit will be roof mounted and located of the very rear of the passenger compartment. Air circulation ducts will also be provided to give passengers in very rear of bus full comfort.

Chassis manufacturer's optional front air conditioning will be included. Approximately 12,000 BTU's.

This system will provide cooling in the front of the bus and have adjustable outlets for the driver to control and direct the flow of air.

The skirt-mounted condenser will be protected from debris thrown from tires by rustproof shields. There will be two, one located at the front and one located at the rear of the condenser.

All controls for fan speed and temperature shall be installed in a panel easily accessible to the driver.

For increased circulation in the driver area, a two-speed fan with a minimum diameter of 6" shall be mounted on the dash. (Not to block the driver's view.) The three-position (off, low, high) control switch will be located on the dash panel.

Roof Ventilator/Emergency Exit - A dual purpose manually operated roof ventilator/emergency exit shall be installed in the roof of the vehicle at approximately the center of the passenger compartment. The hatch shall be 23" x 23" minimum and shall be installed so that when it is open and the vehicle is in a forward motion fresh air will be provided inside the vehicle. Transpec Model 1075 Low profile, or an approved equal. Econo Model not acceptable.

Vehicle will be equipped with a Pentax Automatic or InterMotive AFIS Fast idle control solenoid, (or approved equal). Ford factory fast idle on diesel is acceptable. Fast idle will operate under low voltage condition with parking brake set.

Heating and Cooling Certification - The supplier must certify that the heating and cooling system he proposes to use will be adequate for passenger and driver comfort based on interior dimensions and anticipated passenger load.

Ignition Cutoff - An automatic ignition body circuit cutoff for heaters, defroster, and air conditioning shall be provided.

#### 10. Chassis and Body - Requirements and Performance

The chassis, fully loaded and equipped body, must provide proper weight distribution. The front and rear weights must not exceed the chassis manufacturer' gross axle weight rating.

Front Section, Exterior - Shall have manufacturer's standard grill; grill frame, lamp moldings, etc.

Front Section, Interior - Shall have all items regularly furnished as standard by the manufacturer.

#### Lights and Signals

Exterior - High and low beam headlights, parking, tail, stop, backup, front and side marker lights or reflectors, license plate, hazard warning flashers, directional signals and daytime running lights. There will also be a reverse or back-up alarm.

Stop, tail, and turn lights will be LED design.

There will be two red strobe type lights mounted on the upper rear of the end cap

that will be visible when doors are open (not roof mounted). They will be 6" in diameter.

The strobe lights will be activated only by a dash-mounted switch with a pilot light to indicate activation.

Interior - Instrument panel, front and rear overhead lights, and all doors. Overhead lighting activated by a dash mounted switch, shall provide lighting intensity at a reading level. All door lights and RH front door stepwell shall illuminate automatically when doors are open.

All interior lights shall be adequately recessed so as to not be a hazard to occupants. Interior light fixtures shall be operable with or without engine running. All interior and exterior lighting will meet ADA requirement 49 CFR 38.27.

All interior wiring shall be insulated and covered.

Instrument Panel and Instruments - Standard panel with gauge instrumentation for fuel, engine temperature, oil pressure, alternator, speedometer and odometer. All switches installed by body manufacturer will be a full metal, heavy-duty type. (push pull or rocker)

Mirrors, Rearview - Interior, adequate size to provide the driver a full view of the passenger area (approximate 6" x 12", 8" convex is acceptable).

Mirrors, Rearview Exterior (RH & LH) One piece or Separate - Adjustable type, approximate size 7" x 10". The mirrors must be mounted so as not to obstruct the driver's front or side vision. Separate convex mirrors of 5" in diameter will also be installed (RH and LH). Also include an 8" convex mirror mounted on the left-rear corner of vehicle to allow for a view directly behind bus. All bolts will be grade 5 or higher. Mirrors will not vibrate during operation.

Windshield Wiper and Washer - Electric, two-speed with intermittent wipe option.

Tilt Steering Wheel and Cruise Control, Driver Sun Visor - Include in your bid price.

Storage Compartment - For personal items and/or valuables, a key-lockable storage compartment will be located immediately above the driver.

Radio - AM-FM, manufacturers standard. Floor Plans CC, FF, GG, HH and JJ will have internal and external P.A. speaker system to meet ADA requirement 38.35.

Passenger Signal System - A stop request passenger to driver signal shall be provided, easily accessible to ambulatory and non-ambulatory passengers on each

side. This system will meet ADA requirement 49 CFR 38.37. If pull cords are used, they will be made of vinyl-coated cable. Floor Plans CC, FF, GG, HH and JJ.

Engine - Gasoline V-8 or V-10, minimum of 275 horsepower, providing necessary horsepower and torque at governed R.P.M. for road speed and grade ability. The engine shall have a full flow replaceable or spin on type oil filter. The air filter shall be a dry type. The engine shall be equipped with oil cooler. Ford Chassis to include Super Duty service package.

Cooling System - Heavy duty or maximum cooling radiator with overflow recovery reservoir and permanent type anti-freeze installed to protect the vehicle to at least 20 degrees below zero.

Transmission - Automatic, 4-speed or 5-speed with an electronic shift control, auxiliary exterior oil cooler and overdrive.

Alternator(s) - Minimum of 195 Amps cold. All mounting bolts will be grade 5 or higher. (May require dual alternators)

Batteries (2) - HD with adequate CCA and reserve capacity (Minimum 625 CCA) each for operating chassis and wheelchair lift components. One battery will be relocated so access can be gained through a door on the passenger side of the bus. Battery will be mounted on a slide out-tray to allow easy access. This tray will be sealed to prevent road debris from entering.

Steering – Power steering

Brakes - HD power, four-wheel front and rear disc system.

Axle, Front - Minimum of 4,300 lbs. capacity.

Axle, Rear - Minimum of 8,600 lbs. capacity, ratio 4.10/1 or 4.56/1. Include Mor Ryde, or approved equal.

Drive Shaft Guard(s) - Minimum requirement of one shaft guard per drive shaft section (FMCSR 393.89).

Springs, Front - Heavy-duty coil or leaf with a front stabilizer bar.

Springs, Rear - Heavy duty, leaf type, with stabilizer bar with Mor Ryde, or approved equal.

Shock Absorbers- Heavy duty, front and rear.

Fuel Tank or Tanks - Minimum capacity 33 gallons with outside fill spout. For diesel engines, mark diesel fuel only.

Tires and Wheels - The tires and wheels will conform to the tire and rim association standards. They will be factory installed by truck manufacturing assembly. Acceptable tire makes will be those listed as being available in the tire section of manufacturer's Truck Data Book on specification date.

Mud Flaps - For both front and rear wheels.

Running Board – Vehicle will be equipped with one 12” wide by 36” long aluminum or galvanized steel running board mounted at the driver’s door location. It will be a minimum of 1/8” thick and will have a diamond embossed or other anti-slip design on the footing area. This running board will be securely mounted with at least 3 braces made of galvanized steel to resist rust. A non-skid expanded metal will be installed on the entire step surface to prevent slipping. Diamond embossed only will not be acceptable. Running board design will allow for ample water drainage.

Tires - Tires will be a major brand, (preferably not Firestone) factory installed, metric sized, and meeting manufacturer's specifications and GVW requirements. Seven (front, dual rear and spare), approximate size LT 225/75R 16E, 10 PR, blackwall tubeless or tube type highway tread. Spare tire and wheel will be furnished. Spare tire is to be permanently mounted under vehicle unless weight or fuel tank is an issue. All tires including spare to meet or exceed GVW requirements, and be of radial design. A jack (rated for vehicle GVW) and all tire changing tools will be included with vehicle. All tire changing tools will be securely mounted anywhere in the passenger compartment, as long as it does not impede operation or safety. The jack and tire tools may be chassis supplied OEM. Include “Crossfire” or approved equal.

Wheels - seven (7) disc with size and capacity to match load-carrying requirements of tire to vehicle.

Bumpers - Front and rear.

Undercoating - The entire body and chassis under structure shall be covered with a heavy, long lasting undercoating material. Automotive quality undercoating will not be acceptable. This undercoating will meet FMVSS 302 for flammability.

### Safety Equipment

Emergency Equipment - A fire extinguisher certified for this type vehicle (minimum 5 lb. 10-BC type) and a 16-unit first aid kit with contents recommended for this type and capacity vehicle shall be provided. Three reflective bi-directional triangles with 3 LED warning lights (Tri-Alert or approved equal) shall also be provided. These emergency items shall be securely mounted in the driver area and easily accessible. Also include an assortment of spare fuses used in chassis and body components along with an emergency seat belt cutter.

Each vehicle will have a blood borne disease kit including the following items:

- A. Latex gloves
- B. CPR mask
- C. Goggles
- D. Apron
- E. Disinfectant wipes
- F. Absorbent and scoop
- G. I.D. tag and red plastic bag

All first aid and blood-borne disease kits will be packaged in a durable hard plastic or metal case.

11. The following shall be furnished and included with your bid:

Copy of the most recent Altoona Test Report.

All bidders shall furnish:

A detailed drawing, showing interior floor plan, dimensions and seating arrangements.

A SCHEMATIC OF ANY INSTALLED WIRING WITH EACH VEHICLE

Priority seating signs that meet ADA requirement 49 CFR 38.27.

FMVSS 210 Seat Certification.

Descriptive literature and detailed specifications for lift system.

Description of air-conditioning, heating and defrosting systems.

Certification of adequacy of heating and cooling systems.

The bidder will also supply with the bid, the following items:

- A. An itemized list of domestic produced parts or components used in the manufacturing of the vehicle.
- B. The estimated cost for each item.
- C. The estimated total percent of domestic components used in manufacturing of the vehicle.

12. **To be furnished with each vehicle at time of delivery**

- A. An operator's manual for the basic chassis and other systems.
- B. A parts book and maintenance manual for add on equipment used in modification.

A guarantee that the chassis manufacturer's warranty (minimum 3 years, 36,000 miles) will be in effect at the time of delivery and acceptance.

A copy of the warranty on the air conditioning, heating, wheelchair lift, alternator and body. These components will have a minimum 2 years, 24,000 miles warranty.

Documentation of front-end alignment and or check.

13. Color

Exterior - To be standard color design at the time purchase orders are issued. (At least five different color choices). No vehicle will be painted school bus yellow. Include the cost of a 6" wide vinyl or painted stripe (at least 5 different color choices). Base color will be white.

Interior - The interior trim, upholstery, seat belts, visors, and etc., will be color keyed to exterior color.

14. Advertisements- Decals and all other forms of dealer advertisements will not be allowed.

15. Exceptions to specifications must be clearly noted and included with your bid for consideration.

16. All hardware to attach folding seats to the floor shall be recessed to prevent tripping and stumbling.

17. Bidder will certify that vehicle meets all Federal Motor Carrier safety Regulations.

18. Include as an option with all floor plans. Safety Vision SV 5000, Backing Vision BV 1350 (or approved equal) backing vision system.

19. Vehicle will be warranted against rust through for three years from date of delivery to end user.

20. Vehicle will be checked for proper front-end alignment before delivery.

21. Bidder will certify vehicle all current Federal Motor Vehicle Safety Standards.

Include as an option overhead storage compartment (with netting) located on the driver's side above the ambulatory seating. Streetside is first choice, curbside is acceptable if it interferes with securement area.