Rev. 6/2023

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT TECHNICAL SPECIFICATIONS FOR:

VEHICLE, MODIFIED, 72" HEADROOM, 12 PASSENGER, 1 DRIVER, 2 WHEELCHAIR SPACES, LOW FLOOR, INTERIOR
WHEELCHAIR RAMP, WITH STANDARD EQUIPMENT
(FLOORPLAN ATTACHED)

WARNING TO BIDDERS: Bidder should complete every item described in detail in the "Specifications Description:" section by either entering a check mark in the space provided to indicate the item being bid is exactly as specified or bidder should enter a written description to indicate any proposed item which will deviate from the specifications.

THIS SPECIFICATION SHOULD BE EXECUTED IN ACCORDANCE WITH THE ABOVE INSTRUCTIONS AND RETURNED ALONG WITH BID AND LITERATURE TO BE CONSIDERED FOR AN AWARD.

1. General:

   These specifications describe the minimum requirements for a 12-passenger, 72" headroom, overall 96" width, low floor, 2-wheelchair spaces, 1 driver, and interior wheelchair ramp, with standard equipment. This equipment shall be new, a current year production model that has never been titled, and must meet all CFR, FMVSS, ADA, and state safety standards in effect at time of delivery. The proposed bus must have been tested at the Federal Bus Testing center at Altoona, PA in the 5 year/150,000 mile category. Any additions, deletions, or variations from the following specifications must be noted. Any items appearing in the Manufacturer's regular published specifications furnished by the bidder as assumed to be included in the "bidder's proposal". Any additions, deletions, or variations from the manufacturer's regular published specifications must be outlined in an attached letter.

   It is the intent of these specifications and sketch to describe a small vehicle for elderly and handicapped passengers and rural public transportation passengers. The vehicles shall be aesthetically pleasing in design with attention to the workmanship and details. Also of concern will be the ease in boarding, passenger comfort, visibility, and safety to both passengers and driver. Parts for the body, chassis, and equipment that the vendor proposes to furnish in the vehicle shall be readily available at a convenient source with a minimum of downtime.

2. Workmanship:

   Any unit delivered under this specification is subject to rejection if there is evidence of poor workmanship, by either the vendor or the original manufacturer. Any defect, so noted must be corrected by the vendor to the satisfaction of the equipment manager or his representative.

3. Vehicle:

   The vehicle shall be a mid-size low floor cutaway vehicle.

4. Chassis:

Shall have a chassis manufacturer's gross vehicle weight rating (GVWR) not less than 14,200 pounds and dual rear wheels.

5. Engine:

Engine shall be gasoline fueled engine of not less than 6.6 L V-8; the engine shall include but not be limited to the following appurtenances:

A. Replaceable pleated paper element type air cleaner.

B. Replaceable full-flow type oil filter.

C. Heavy-duty cooling system.

D. Coolant recovery kit.

E. Required amount of chassis manufacturer base antifreeze to protect the cooling system to -20º.

F. Engine shall have an Intermotive products gateway fast idle with intelligent lift interlock system or approved equal installed. The system shall activate when the battery voltage drops below 12.5 volts or when the OEM or rear air conditioning compressors are engaged. All controls for this system shall be installed on the vehicle dash in reach of the driver. Engine shall not start when not in park.

6. Wheelbase And Interior Length And Width:

The wheelbase shall not be less than 165 inches, the overall length shall not be less than 287 inches, and the minimum interior width at seat height will be 91.5 inches.

7. Transmission:

Shall have a minimum of a 6-speed heavy duty (overdrive equipped) automatic transmission available by chassis manufacturer incorporating a torque converter.

8. Brakes:

Shall be a heavy-duty dual hydraulic power assisted system with disc type brakes on the front wheels and disc type on the rear wheels. A hand or foot operated parking brake shall be supplied with a warning light on the dashboard.

9. Tires:

Tires shall be first line and first quality. The combined load rating of the tires shall equal or exceed the GVWR of the vehicle. A spare tire shall be furnished and mounted on a spare wheel and placed in the vehicle. All tires and wheels shall be the same size and rating. Lug wrench and

jack are not required.

10. Axles:

The front gross axle weight rating and the rear gross axle weight rating, in combination, shall equal or exceed the gross vehicle weight rating. The gear ratio shall provide a speed of not less than 55 mph without over- revving the engine.

11. Steering:

Vehicle shall be equipped with power steering, cruise control, and tilt steering.

12. Springs:

The front and rear springs, in combination, shall have a ground load rating equal to or exceeding the GVWR rating of the vehicle.

13. Fuel Capacity:

Vehicle shall have minimum (57) fifty-seven gallon fuel tank(s) with clearly marked fuel- type instructions installed. Vehicle shall have a 12" x 12" diamond plated fuel sender plate installed.

14. Shock Absorbers:

Vehicle shall be equipped with front and rear heavy-duty, double-acting shock absorbers of sufficient capacity to adequately stabilize the loaded vehicle.

15. Electrical System:

A 12-volt, dual battery system is specified with the following requirements:

A. Alternator shall be heavy-duty OEM 220 amp.

B. RV type, solid state, battery isolator rated equal to alternator output on each leg, with a maximum voltage drop of one (1) volt.

C. Battery number one (1) will be manufacturer's standard equipment for vehicle furnished, at least 600 CCA, mounted under the hood.

D. Battery number two (2) to be deep cycle OEM minimum 700 CCA. This battery is to provide power for the wheelchair lift, auxiliary air conditioner, and flashing rear lights.

E. The vehicle shall be equipped with a rotary disconnect switch that removes 12V battery power from all bodybuilder loads while not interfering with OEM chassis electrical circuits. Disconnect switch for batteries location to be determined during pre-production meeting.

F. The vehicle shall be equipped with a CATalert or approved equal. The catalytic converter

alarm shall honk the horn, turn on the interior dome lights, and turn on the camera system for recording with any attempt to remove or disable the catalytic converter.

G. The vehicle shall be equipped with a Break Out Box (BOBe) from Intermotive or approved equal to the OEM OBDII or a gateway connector, allowing up to 5 devices to be connected to the vehicle CAN network without conflicts

16. Wiring Harness & Routing:

The wiring harness must be built by a reputable wiring harness manufacturer and must be built to length of bus. Bidder must supply the name of this manufacturer and provide a list of recent customers; and must submit a proposed wiring schematic with each vehicle. Each harness shall be as-built with the exception of optional items, but each wiring schematic must identify each optional circuit. Harness may incorporate wiring for options not selected by the end user. Schematics shall include each connecter pin number and location. It shall also include symbols identifying electrical components along with location of each component. Each set of schematics shall have a legend that identifies each symbol used, including grounds.

All wiring shall be vinyl insulated to 200 degrees Fahrenheit, shall meet SAE standards, and shall be color coded or function coded at least every twelve (12) inches and permanently labeled to identify their function. Battery cables shall be 2-gauge with minimum of 0.075" wall plastic insulation. All wiring shall be of sufficient size to carry the required currents without excessive voltage drop.

Entire harness system and mating electrical components shall be plug- connected with lock tab connectors; all terminals are machine crimped; all harnesses shall be covered in high temp conduit and all exterior under body/under hood connectors are heat-sealed and weatherproof connectors.

All multi-pin connectors with 12 or more conductors shall be environmentally sealed electrical connectors with a tab connector. All connectors with 3 to 12 circuits that are under the hood and/or under the vehicle shall be environmentally sealed high impact plastic connectors with pull apart locking tabs. All connections containing one to two circuits shall be made with weatherproof posi-lock connectors.

All body wiring shall be run inside the body in a protected area. All wiring shall be in a loom and secured for maximum protection. Clamps shall be rubber or plastic coated to prevent them from cutting the wiring insulation. When routing wiring under vehicle all wiring shall be encased in a loom and attached to the frame and sub-floor structure with rubber or plastic coated p-clamps every 12 inches and shall not be bundled with hoses. The harness shall run in straight lines as close to the chassis frame rails as possible. Any harness that goes over the rear suspension shall be encased in a conduit fixture securely fastened to the sub-floor rails or routed inside the frame rails.

A breaker box shall be located above the driver door in an abs non-conductive vacuum formed tub with a non-locking door. A microprocessor controlled printed circuit master control board shall be provided with no electrical relay type switches. Connection to OEM electrical system shall be accomplished through connectors supplied by the chassis manufacturer using locking

mating connectors. A legend shall be provided on the circuit box door that displays circuit fusing and identification information.

A detailed schematic on UBS Drive Shall be provided with the vehicle.

17. Radio:

Vehicle shall have an OEM AM/FM radio installed. The instrument panel shall have lamps sufficient to illuminate all instruments. All lights, switches and controls shall be marked in accordance with FMVSS 101.

18. Air Conditioning:

Air Conditioning shall be a rooftop system that incorporates the condensers and evaporators. The Rooftop unit shall have a minimum cool air BTU Rating of 85,000 BTU's. There shall also be a second compressor in addition to the OEM compressor. The secondary compressor shall be type TM-21 or approved equal.
This rooftop system shall have electronic controls that are mounted in the driver's area. Care should be taken to ensure easy access to these controls by the driver. Vehicle shall have OEM installed factory in-dash air conditioner independent of rear a/c. The interior molded cover must cover any hoses, drains and electrical wiring, with an accessible a/c filter for easy cleaning. A/C systems to utilize the air conditioning industry's "e-z clip" or "atco crimp clip" type a/c hose system consisting of type D hoses, fittings and clamps. All a/c components brochures should be submitted with bid. All a/c components brochures, serial numbers, warranty information, service centers, and date of installation shall be received with delivery of vehicle to the Louisiana Department of Transportation.

The Air Conditioning added for the bus body needs to be installed by the manufacturer of the complete system. Air Conditioning installed by another manufacturer will not be accepted.

19. Heater:

Each vehicle shall have a factory front heater and a rear factory installed hot-water type, type heating system with a minimum rating of 35,000 BTUs. Heating system shall incorporate windshield defrosters. All controls for the heating system shall be located in the driver's compartment and clearly marked for driver use. All heater components brochures should be submitted with bid.
All heater components brochures, serial numbers, warranty information and date of installation shall be received with delivery of vehicle to LADOTD. Heaters are to be individually controlled by three (3) position switches: low, high, and off, and be controlled from the switch panel. Provisions shall be made for windshield defrosting adjustable output within reach of the driver. Rear heater shall be installed as far back as possible and is not to interfere with passenger. An access door is to be installed in the floor or in the side panel on all vehicles with a rear heater shut off valve and so labeled.

20. Additional Equipment:

The following items are supplementing, if necessary, those items already catalogued as standard

shall be furnished and installed:

A. Shall have a front and rear bumper.

B. A 2A:10B:C fire extinguisher shall be furnished and mounted in the vehicle. The operating mechanism shall be sealed with a type of seal which will not interfere with the use of the fire extinguisher and a pressure gauge shall be mounted on the extinguisher so as to be easily read without removing the extinguisher from its mounted position. Mounting of the unit shall not interfere with passenger entry or exit.

C. A 16 unit first aid kit and a blood borne pathogens clean up kit shall be furnished and mounted in the vehicle. Mounting shall not interfere with passenger entry or exit.

D. A red warning triangle reflector kit with not less than three (3) reflectors shall be furnished and mounted in the vehicle. Mounting shall not interfere with passenger entry or exit.

E. There shall be sufficient interior lighting for night operation to illuminate the driver and passenger entry area and the interior aisle.

F. A 6”X16” long, full view interior rearview mirror shall be installed above sun visor and be adjustable. Exterior rearview mirrors are to Remote Powered Velvac 2020SS with integrated LED Turn Signal or approved equals. An additional crossover mirror shall be installed streetside on the front of the vehicle as far forward as vehicle design permits. An adhesive bus guard lens (commonly called a “fish-eye”) shall be installed in the rear of the vehicle.

G. A driver side diamond plated steel running board shall be installed.

H. An interior operated hood release shall be provided.

I. A reclining bucket-type high back driver’s seat with six way power slide motor and seatbelt with retractor shall be installed. Seat covering to be the same quality, color and material as passenger seats. A single folding, right side mounted, armrest shall be installed.

J. The entire underside of the body and chassis including floor members, side panels below floor level, and fender walls shall be coated with fire-resistant asphalt base, rubber base, or equivalent undercoating material. All openings in the floorboards and firewall shall be sealed.

K. Interior engine cover (dog house) shall have storage compartment. Drink Holder most be in reach of driver but doesn’t need to be on engine cover..

L. A rear third brake light shall be mounted directly in the center, either under or above rear window. The third brake light shall be LED and no less than 6” inches wide. All rear exterior lighting (turn signals, brake lights, and back up lights) shall be LED.

M. Vehicle shall have back up alarm installed.

N. All surfaces are to be finished.

O. Vehicle shall have 7 inch red LED lights installed in the top left and right corners of the rear of the bus. If the vehicle's ignition is in the on position, and the brake is depressed, these lights will flash to indicate slowing or stopping.

P. Exhaust system for vehicle shall exit on the street side behind the rear axle and be mounted at points to the frame every 12 inches. Heat shields shall be mounted between exhaust system and fuel tank.

Q. The bus must be equipped with an anti-theft system that allows the engine to idle with the key removed from the ignition and keep the shifter locked in park. The system will be activated by pressing a switch and removing the key within three seconds. If the service brake is pressed while in the locked mode the horn will sound as an alarm.

R. Vehicle shall be equipped with storage area above the front windshield. The area shall be weather resistant. Door shall be provided with two latches.

S. An oxygen holder/Go2 model number FE201122 must be installed and a 12 inch piece of L-track shall be installed adjacent to the curbside wheelchair position, to accommodate the oxygen holder.

T. The bus must contain a system that allows the driver to perform a pre-trip light and alarm inspection by activating a single switch located on the driver's switch panel. When activated the system with automatically cycle on/off all exterior lights for the driver's inspection. The pre-trip light inspection system must acquire & control chassis light signals via a "plug & play" connection. The system will not operate unless the vehicle is in park & the park brake is set. The system will automatically disengage: after 5 minutes of operation, park brake not set or transmission is shifted out of park. The pre-trip module will allow for Bluetooth communication to send chassis data to an android tablet/device. The data will be accessible and have alert options, and the software will have reporting functionality.

U. A digital, high quality LCD color monitor with (3) cameras for left/right turn signal activation and rear vision shall be installed on the vehicle. Cameras are to be waterproof with auto-adjustment for night vision in durable housings. The color monitor shall be easily visible to the driver in its mounted position. Monitor shall be fixed to the header above the windshield and shall be tied into the steel structure.

V. A reverse assistance system shall be installed with a minimum of 4 rear sensors. The system will be automatically activated when the vehicle is put in reverse and will detect an object within 7 feet. The system will have an alarm that sounds upon object detection and a dash mounted LED panel that displays the location of the object and the distance in feet to the object.

W. Vehicle shall be equipped with a Mor/ryde rear axle suspension system or approved equal.

X. A fire resistant blanket.

BODY MODIFICATIONS

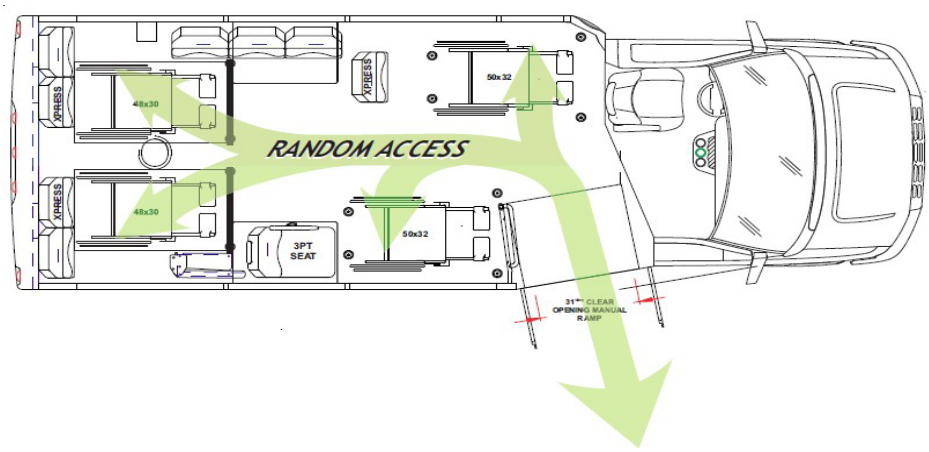
It is the intent of this portion of the specification to describe the body modifications with appurtenances to meet the requirements of the end user. The following are representative of the minimum requirements of the vehicle. It is the desire of the state to purchase a vacuum skin laminated body which will provide superior impact protection for passengers, since they will be riding at or near impact heights. The bus must meet or exceed the following specifications. The body shall have been tested to demonstrate compliance with federal motor vehicle safety standard number 220 (School Bus Rollover Protection). The body structure shall be built as an integral unit. All joints and corners where stress concentration may occur shall be adequately reinforced to carry loads and withstand road shock. Certification of compliance with this static load test shall be provided with submission of this bid. Failure to submit this data will render your bid unresponsive. A one-piece metal or fiberglass roof will be allowed.

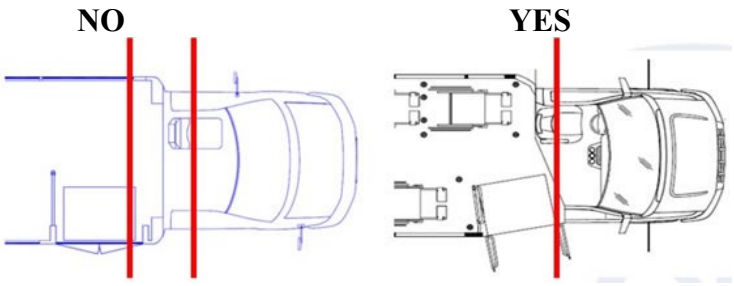
21. Body Structure:

A. Roof and Sidewalls: Interior aisle shall provide not less than 72 inches of headroom in the entire vehicle. The vehicle body structure must incorporate an integral, fixture-welded steel body framing for floor, front, rear, sidewalls, and roof. The steel wall structure must extend below the floor level to the lowest point in side wall, lower skirts that are not an integral part of the side wall are not permitted. All cavities and voids present in the structure framework of the body sidewall and rear wall assemblies are to be completely filled with 1.063 thick high density beadboard insulation. The roof sub-assembly shall be completely filled with 1.5 thick high-density beadboard insulation. The exterior walls and roof shall be of either aluminum or fiberglass to preclude corrosion. The exterior roof panel shall be comprised of a single seamless panel to preclude leakage. The interior walls and ceilings shall comprised of .040 Fiber-Reinforced-Plastic (FRP), gloss light gray in color (a vinyl coated substrate will not be considered). All of the above exterior and interior roof and sidewalls components shall be vacuum laminated together to assure uniformity in the strength and bonding of all walls and roof surfaces. Structural skin adhesion construction methods will not be accepted or considered as an approved equal. The body shall incorporate a steel structure as the primary load-bearing structure. All panels shall be installed so that they shed water, that is, the leading panel shall be lapsed over the following panel and in no case shall the sealing of the panels be dependent on caulking along. A complete set of schematics showing cage and dimensions shall be submitted with bid for bid to be considered. Interior to be a fiberglass type material that is easily cleaned. Carpet or cloth not accepted on interior walls or ceiling. A one-piece metal or fiberglass roof will be allowed. Exterior FRP (Fiber Reinforced Plastic) Composite will be secured to the side walls with the seam being covered by a rain gutter.

Entry Door: The passenger entry door must be on a minimum 12 degree angle to assist with random access for wheelchair loading and unloading. The entry door must be forward to assist driver in seeing the passenger entry. Backset entry doors that are not on a minimum 12 degree angle are not desired and will not be considered as an approved equal for safety and ease of entry reasons.

(Not a sample floor plan, but a drawing of access.)





B. Entryway: The entryway shall be integral with the body and fabricated from heavy-duty welded steel. The one step entry shall not exceed 12 inches from the ground.

C. Floors and Interior Paneling: Substructure shall consist of prime commercial quality steel specifically engineered in a way to protect the occupants. A complete set of schematics showing dimensions of floor shall be submitted with bid to be considered. Sides of the sub floors shall be 14 gauge C-Channel that will overlap the 1.5" x 2.5" 16 gauge floor line tubing in the side walls. Steel sub floor structure must be isolated from the chassis by means of OEM rubber isolation mounts and bolted through these mounts to the chassis frame rails.
Floor decking shall be a 5/8" thick single piece of engineered wood with moisture barrier laminated to upper surface and moisture sealed edges. . The whole floor including aisle, entrance, and step tread areas shall be covered with Altro Transflor Chroma 2.2 mm or Gerflor Tarabus Helios 2.25mm and shall be coved up the sidewalls. Floor thickness is all flooring, not a combination of flooring and backing. Flooring to be a blended (not top coated) product that includes Quartz for slip resistance and durability. All seams are to be heat welded to provide one piece, waterproof covering. The cab floor shall have the OEM insulated floor covering.

D. Door Opener: The entry door shall be two-leaf, outward opening type, electrically operated,

and controlled from the driver's seat. The door opening shall be 35" minimum clear opening with entry assist handles. For emergency situations, a manual door release control shall be provided.

E. Windshield, Windows, and Rear Emergency Door: The windshield is to be a one- piece design provided by the chassis manufacturer. Windshield shall be laminated tinted safety glass. The driver's window shall be capable of opening, and be either the sliding or the roll-down type. The driver's window shall be tempered safety glass. The side passenger windows shall be transit- type, as opposed to the school bus type. It is desired to maintain a transit-type appearance, and school bus windows will not be accepted. Passenger windows must be capable of opening to ensure ventilation. Windows shall be a minimum of a 36"x 36" (816 square inches) with an upper T-sliding design. One "half window" will be acceptable on each side where engineering requires. One hinged emergency escape window must be provided on each side of the vehicle.

i. Emergency windows must be clearly labeled and operating instructions must be clearly visible at each escape window. All windows shall be designed and installed in compliance with FMVSS 217. All emergency exits shall comply with F.A.C. 14-90. All passenger windows must be safety glass. Windows are to be dark tinted (31% Light Transmission value). All passenger windows shall be installed in black powdered or anodized aluminum frames, or the equivalent.

ii. Each emergency exit shall be identified with a 12 volt red LED lamp assembly, with a 10,000 hour life bulb, wired to the vehicle ignition circuit. This system, along with window signage, shall provide passengers with a clear identification of exit routes. Next to, or immediately below, each LED light fixture shall be a decal, one (1) inch Helvetica Medium white letters on red background, stating "Emergency Exit".

iii. A rear emergency door with upper and lower windows, and an interior lock to prevent entry from the outside shall be installed in in the vehicle. The emergency door shall be equipped with an audible alarm/ visual light if locked or open while the vehicle is running. The lock shall prevent starting of the engine when engaged, and trigger an audible buzzer and visual light. Door shall have a locking mechanism (rear door prop) to hold open the door when in use.

F. Windshield Wipers: Heavy-duty electric two-speed windshield wipers controlled by a variable speed (intermittent) switch shall be furnished.

G. Insulation: Shall be installed in all sidewalls and roof. Insulation shall be R-6 value or greater.

H. Modesty Panels: An industry standard modesty panel shall be installed on the left side of the passenger entry area with stanchion. The supports of the modesty panel shall be fully padded on 1 ¼" stainless steel.

I. Passenger Assist Stanchion and Ceiling Grab Rails: All stanchions shall be a minimum 1 ¼" outside diameter stainless steel tubing and shall be padded. A stanchion shall also be installed to the right behind driver with modesty panel

i. A grab rail shall be installed on both sides of entry door parallel to the steps provide easy entry and exit for the passengers and must meet ADA.

ii. All stanchions shall be mounted securely to the frame of the vehicle. The strength of the stanchions shall be sufficient to withstand the force exerted by a 350-pound person using the stanchion to help pull him up and into the vehicle from the ground level.

iii. The ceiling grab rail shall be a minimum of 1 ¼" outside diameter stainless steel tubing. All stanchions and grab rails are to be attached to structural posts or cross members of the roof to insure maximum strength.

J. Paint and Trim: The exterior color of the vehicle shall be white.

22. Seating:

All seats shall be forward facing including wheelchair. (For DOTD purposes, the driver is NEVER counted as a passenger.)

It is the intent of this portion of the specification to describe the seating requirements in the vehicle.

A. The seating floor plans shall be as shown on sketch. The vendor with the bid will submit an alternate sketch if seating floor plan is not as shown on sketch.

B. All seats shall have not less than 9 inches between the front of the cushion and the back of the next forward seat.

C. Single passenger seats shall not be less than 17" wide. The two- passenger seats shall not be less than 35" wide. All seats shall have a cushion depth of not less than 16". All seats shall be Freedman GO ES three point seats or approved equal. All seats shall be equipped with Sanitized® protection molded grab rails. Foam padded grab rails are not acceptable.

D. The aisle width between seats shall be not less than 15".

E. All seats shall be mounted on seat tracks system welded to wall and floor body structure. Seat track must meet FMVSS 207 and a copy of the latest certification shall be submitted with bid.

F. All Seats shall be upholstered with heavy-duty vinyl material, minimum of 36-ounce per linear yard. The first two rows of the bus shall be Freedman GO ES three point seats with CRS-225 hardware or approved equal. These seats shall be FMVSS 225 compliant to attach removable child seats.

G. Each passenger seat position shall have integrated three point seat belts or approved equal. The seat belts must meet all applicable FMVSS Standards. Two (2) 18" seatbelt extensions must be supplied.

23. Miscellaneous Technical Specifications:

A. All metal shall be thoroughly cleaned, paint lock process or acid etched, and primed. All exterior metal shall be painted in addition to priming.

B. There shall be no sharp corners on the unit that will cause injury to passengers. All corners that could cause injury to passengers shall be slightly rounded and filed smooth.

C. All welds shall be relatively free of the slag inclusions and undercut. Filet weld sizes shall be equal to the thickness of the least of the joined plates.

D. All materials installed shall be new and free of rust.

E. No wires shall be visible on the exterior or interior of the unit

F. Weather stripping shall have no coating of any type.

G. The body shall be free of all cracks, dents, and defects due to metal fatigue or physical damage.

H. All switches shall be permanently labeled

I. All windows shall be free of any defects due to welding slag or assembly damage.

J. All units shall be thoroughly cleaned and weather sealed prior to inspection.

K. All interior and exterior signs may be painted or decals. Vehicle will be delivered with all appropriate ADA handicap decals and signs inside and out. Vehicle shall also have two (2) reflective 9" x 17" yellow and black caution signs with 2" lettering that state:
   i. "CAUTION! Vehicle makes sudden and frequent stops"
   ii. "CAUTION! Vehicle stops for all Railroad Crossings"

L. Burn marks, cuts, or scuffmarks will not be allowed on the interior or exterior of the unit.

M. All hoses supplied in assembling the unit described in these specifications shall have temperature and PSI ratings in excess of maximum operating temperatures and pressure of fluids or materials being transferred.

N. The component parts of the unit shall be of proper size and design to safely withstand maximum stresses imposed by a full capacity load.

O. The entire unit shall be watertight and tested for any water leaking into the interior of the vehicle prior to delivery. Certification of Water Test for leaks and proof of fix shall accompany each vehicle.

P. All vehicles shall be completely road tested prior to delivery.

Q. All vehicles shall be delivered with a minimum of ½ tank of fuel.

R. Vehicle Reference and/or User List: The vendor will supply a list of not less than three (3) transit operators that have been using the same transit services for a minimum of one (1) year. The list must include name, address, telephone number, and personal contact for verification of satisfactory performance.

24. Change Order:

Any modification or amendment will be set forth in a Purchase Order Change. All Change Orders will be issued by the Division of Administration's Purchasing Section.

25. Descriptive Literature:

UPON REQUEST, TWO (2) COPIES OF DESCRIPTIVE PROJECT ADVERTISEMENT – LITERATURE (BROCHURES) MUST BE FURNISHED WITHIN TEN (10) DAYS TO BE CONSIDERED FOR AN AWARD.

26. Product Support Literature

EACH PIECE OF EQUIPMENT WILL BE ACCOMPANIED BY COPIES OF THE FOLLOWING LITERATURE.

1. Certificate of Origin (one copy)

2. Dealer's Service Policy (one copy)

3. Owners/operators Manual (one copy)

4. Service Manual (one copy) – discs ok
   To include service/repair information as applied for:
   a. Chassis/understructure b. Engine
   c. Transmission
   d. Passenger body

5. A wiring diagram of all components installed by the vendor shall be furnished with each unit.

6. Miscellaneous Manuals (one copy of each/discs ok), including:
   a. Safety Manual describing operator "do's and don'ts" for safe vehicle operation
   b. Tire/Maintenance/Tire Car Manual
   c. An as built part manual is to be shipped with vehicle. (All vehicles)

27. Warranty:

Copies of all manufacturers' standard product warranties along with warranties covering any equipment sub-systems (engines, tires, accessories, etc.) attached to the principal equipment. The

warranty of each unit shall include chassis, engine, transmission and drive train, modifications, etc., and shall be for a minimum of three (3) years or 36,000 miles from date the Department of Transportation and Development puts the units into
service or within 90 days after Acceptance, whichever is sooner. The body structure shall be warrantied for five (5) years or 100,000 miles, with bumper-to-bumper coverage of body components for three (3) years or 36,000 miles.

The bidder will have a Louisiana Dealership and will state the name and address of their dealership location, along with their hours of operation. Please also list any other locations where warranty maintenance work may be obtained in Louisiana.

Belts, brake pads, filters, tires, fluids, light bulbs, etc., will not be included in warranty (normal everyday wear and tear items).

Any materials, specialties, equipment or accessories that prove defective in normal operation within the above period will be replaced or repaired by the manufacturer free of any and all cost to the vehicle operator, including material and labor.

The successful bidder will furnish warranty replacements and/or repairs promptly.

The bidder will provide written assurances and warranty certifications with the bid package regarding warranty repairs.

28. General:

All equipment cataloged as standard for the basic vehicle, unless superseded by these specifications, to be furnished and included in purchase price of the vehicle.

"Caravan" or "driveaway" deliveries straight from the manufacturer to the state will not be accepted. A pre-delivery in-service inspection shall be performed by the vendor before delivery to LADOTD. An inspection checklist (supplied by LADOTD) shall be delivered with each vehicle. A name and location where this inspection will be performed shall be submitted with bid and shall be submitted before execution of contract for approval by LADOTD. Manufacturer checklist is not acceptable.
All vehicles shall be delivered after pre-delivery inspection to address listed:

LADOTD Headquarters
1201 Capitol Access Road
Baton Rouge, Louisiana 70804

Each unit shall be delivered completely assembled and ready to operate.

Vendor and/or Manufacturer shall be ISO 9000 Certified.

29. Louisiana Safety Inspection:

Safety inspections shall be performed on each vehicle prior to delivery and a Louisiana State safety sticker properly affixed.

30. Miscellaneous Requirements:

A mileage certification form as required by the Louisiana Public Safety Department should be completed by the vendor and furnished upon delivery of the vehicles.

Modification to the vehicles may be performed by a second-stage manufacturer, in accordance with STATE, ADA, CFR, and FMVSS standards.

Vehicle shall comply with Louisiana State and Federal emission requirements in effect at the time of delivery.

A notarized Bill of Sale must be furnished with each unit upon acceptance.

One FTA Certification is required per manufacturer, if bidder is using the same manufacturer for every line item. If you are submitting more than one vehicle manufacturer, they will also require FTA Certifications.

A weight certificate is to be issued after final assembly and to be send with paperwork with vehicle. (All buses)

The most recent Altoona test shall be submitted with bid for all bus categories.

31. Standard Equipment:

A. PASSENGER ENTRY RAMP

1. The entry ramp shall either be a Braun power ramp rated at a minimum of an 800 pound capacity. The entry ramp will be designed to let wheelchair and ambulatory passengers enter the bus once the ramp is fully deployed. Steps are not allowed and all passengers shall enter by way of passenger door. Entry ramp shall be 62 inches minimum and provide a 1:5 angle when deployed to the ground. Where provided, vehicle shall be ADA Fixed Route Compliant per Americans with Disabilities Act. The ramp area shall be equipped with (1) exterior overhead door light and (2) LED Stepwell Lights to illuminate the entry floor/ramp platform meeting ADA specs. These lights shall activate when the ramp is deployed and turn off when the ramp is stowed.

2. Vehicle shall be equipped with an Intermotive brake interlock system or approved equal. The controls for the lift shall be interlocked with the vehicle emergency brakes and transmission to ensure the vehicle cannot be moved when the lift is not stowed and so the lift cannot be deployed unless the interlocks are engaged. Must have an LED status display with two inch red “door ajar” light.

3. Parts Books, Manuals, Drawings, and Training: The vendor shall furnish with each installed wheelchair assembly one (1) complete set of operating instructions, trouble-shooting guide, inspection and service guide, and detailed parts list. The vendor shall

furnish with each installed wheelchair assembly a complete schematic wiring diagram covering all Electrical equipment and electrical circuits installed by him, complete with wiring codes. The vendor shall furnish with each installed wheelchair lift a complete schematic diagram of all hydraulic circuits installed. Vendor to furnish full information on the lift he proposes to furnish with bids.

B. TWO (2) FULL WHEELCHAIR SECUREMENT STATIONS:

Each wheelchair space shall be provided with a 4-point Retractable Wheelchair Securement and Occupant Restraint System. Retractor wheelchair securement system shall be a Q-Straint System and shall include: 4 Q8300-A-SC3 (slide & Click), 4 Max Retractors Q8-6209-SC, 1-Retractable Shoulder Belt Reel Q5-6415-RET-ASL, and 1 lap seat belt w/ pin connector Q8-6325 per securement position. System must meet all ADA, State and Federal requirements.

Securement system shall include retractors, occupant restraint, 2 web cutters model # 8705, and 4 quick straps model #FE200750.

Two (2) wall mount securement stations shall be installed on the vehicle walls next to wheelchair securement position.

C. BUS DIGITAL SECURITY CAMERA SYSTEM:

A 4 digital cameras system shall be installed with dual hard drives and 1 audio microphone per camera. The location of hard drive and cameras shall be determined during pre-production meeting before any buses are built. Cameras will be located as follows: driver, front stairwell, front to back, and back to front.

The digital security camera system shall include all necessary hardware, licenses and equipment needed for complete operation of the security camera system.

Bidder are to provide information of the type/brand of system they will be providing in the vehicle and the reliability of the mobile video security system as used in other public transit bus applications. All information shall be submitted with their bid.

a. Camera systems:

- System shall have a recording capacity shall have a minimum of 30 frames per second from a maximum of four (4) color video cameras.
- A minimum 30 days or up to 300 hours recording time shall be available.
- Recording media shall be hard drive based.
- System shall be capable of easy recording media hard drive swapping from one transit vehicle to another without requiring user intervention to reformat the hard drive. Programmable recording start/end times or after bus has been idle for longer than a set period of time.
- System shall be synchronized audio/video multi-channel video viewing from the installed video cameras and microphones.
- The cameras must maximize image quality and automatically adjust through the changing lighting conditions including extremely low light and night time

operations using infrared illumination or approved equal.

- The cameras shall be mounted in a tamper resistant housing.
- Digital recording unit shall power down at a user selectable time after switched power is removed. If unable to power down automatically, the unit shall tolerate having power removed suddenly with no negative effect on the recording unit, system hardware, operating system, stored date/video/audio, or on the system's ability to function normally once power is restored. Vibration resistant recording unit capable of rigorous demands associated with public transit vehicles.
- Capable of GPS automated time/date stamp and auto-updating for daylight savings time.
- System shall be capable of recording events while transit vehicle ignition is OFF for a preprogrammed time period.
- System shall be capable of optional event recording such as transit vehicle speedometer.
- From existing dashboard mounted event trigger button, a simple steady-ON or OFF warning light to notify bus operator that system is active or has failed.
- Digital recording unit must support continuous "loop" recording.
- The system shall be adequately installed to withstand the rigors (starts/stops, shocks and vibration) of a public transit vehicle as well as temperature changes from summer highs of 100 plus degrees to winter lows of 40 degrees Fahrenheit.
- The system should be encased in a key-operated locking enclosure.

b. Video Playback Minimum Requirements:

- Captured video shall not require a specialized Personal Computer (PC) or other proprietary PC equipment to access and view recorded events.
- Tamper proof recording format, recorded data shall be deemed acceptable as evidence in legal proceedings.
- Captured incident clip/event shall be date and time stamped.
- Captured video shall have a zoom function to allow the system user to zoom in on a particular area of the recorded video.
- System shall have industry standard video format for playback on standard purchase Windows PC.
- System shall have video manipulation with ability to clip segments and capture still images.
- Ability to easily transfer video clips and still images to industry standard CD-ROM, USB flash memory stick or DVD formats. Capable of recording incident clips/events in a format that does not require additional software to playback on a standard PC.
- Video playback from removable hard drive recording media shall take no more than 60 seconds to access and view on PC.
- Playback must allow watching a selected camera or cameras while listening to the mic from a different camera.

c. Wiring and Cabling:

- The Vendor shall submit wiring and cabling diagram of video/camera equipment with the bid.
- All connectors and sockets shall be of positive locking design and shall be equipped with gold contacts or similar other rust or oxidation inhibiting contacts.
- Plug in connectors shall have industry standard crimp wiring. Connections shall be made at terminal block ends..•

  Wiring shall be uniformly color coded and tagged.
- The power source wires must be sized appropriately to meet specified requirements for unit start up and normal operation and should prevent unacceptable voltage drops.
- Wherever there is a possibility of interference, wiring and interconnecting cables shall be properly shielded.
- Video and audio cables shall be gauged to minimize signal loss.
- A protective plastic or rubber grommet must be installed in every hole that provides passage for conduit or wiring to avoid chaffing or cutting of the conduit or wiring.
- Conduit shall be installed and secured in all vehicles.
- All wires and cabling shall to be concealed in a vandal resistant manner.

d. Warranty:

- Vendor shall provide a minimum standard warranty on all equipment and shall maintain this equipment during the warranty period.
- All vendors must provide a list of recommended spare parts, including unit costs.

D. DECALS:

The Louisiana transit decal with parish name and phone number shall be installed on both sides of vehicles for all vehicles before delivery to DOTD. See below for sizes and dimensions. Locations of decals to be determine during preproduction meetings. The colors and materials required are 3M Brand 3650-53 Cardinal Red (Louisiana); 3M Brand 7725-37 Sapphire Blue (Parish Name, Number, Transit and State of Louisiana) and 3m Brand 7725- 12 Black (State of Louisiana). The parish names and phone numbers will be supplied to vendor by LADOTD. See Examples below:

Parish Name & Phone # 3” x 68” Example: 3M Brand 7725-37 Sapphire Blue
West Baton Rouge Parish (225) 225-1234
Minivans – 11”x 53.75”
Buses – 18”x 87”
Modified vans – 22.25”x 126.5”


MINI VANS
11"X 53.75"
Louisiana TRANSIT
FOR VANS W/ DOOR
IN REAR ON PASS. SIDE
POSITION OVER WHEEL
18"X 87"
Louisiana TRANSIT
NORMAL SIZE
22.25" X 126.5"
Louisiana TRANSIT

BUS, TYPE 12-2B ENHANCED LOW FLOOR VEHICLE

Capacity: 12 passengers, 2 wheelchair spaces, 1 driver