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LOS ANGELES UNIFIED SCHOOL DISTRICT
Transportation Branch

These vehicle specifications were prepared for: Transportation Branch, Bus Operations.

Vehicle Specifications: Conventional 17 Passenger School Bus (Variable Seating) with pricing on options for various Air Conditioning configurations. Items submitted for bid shall be manufactures latest model.

General Requirements:

Complete vehicle(s) furnished to the Los Angeles Unified School District (LAUSD) shall comply with all Federal, State, County and Local regulations in effect at time of delivery to LAUSD. LAUSD reserves the right to inspect and evaluate the design and component location on such vehicle(s) at any time during manufacturing. If the designated LAUSD person in charge of inspections determines a problem(s) exists, such problem(s) will be corrected before acceptance of the vehicle(s) by the LAUSD. Prototype vehicles are not acceptable. Vehicles shall be standard production with optional equipment. Deletion of standard equipment is not acceptable.

Contractor shall build the first bus, to be referred to as the pilot bus, several weeks prior to assembly of the remaining order. Contractor shall include the total cost for three (3) District representatives to travel (air fare, lodging, and meals) to the final manufacturing factory for review of the pilot bus upon its completion. Upon District inspection, any such deficiencies noted shall be repaired, and said repairs shall be incorporated into all vehicles delivered.

Final vehicle must comply with all applicable State, and Federal Motor Vehicle Safety Standards in effect. A certificate shall be provided with the vehicle(s) at the time of delivery certifying that this vehicle(s) conforms to all above stated standards.

Vehicle(s) shall be inspected and approved by the Motor Carrier Safety Operation Unit of the California Highway Patrol before formal acceptance by the LAUSD.

The official address for all documents is as listed below. Vendor shall provide all necessary documents, weight certificates, etc., and register the vehicle with the Department of Motor Vehicles. Vehicle shall be registered with California exempt license plates as follows:

Los Angeles Unified School District
Transportation Branch
2011 North Soto Street
Los Angeles, California, 90032.

Vendor shall have a factory authorized service and repair parts agency in the metropolitan Los Angeles area. The District requires authorization to perform and be reimbursed for all warranty related repairs, including chassis and drive train, up to \$1,000 value as a condition of this purchase. The District will meet all requirements of the manufacture/contract vendor.

The manufacture/contract vendor shall provide training on warranty adjustments and procedures and provide necessary documentation as part of this contract. Vehicle, or any part thereof including accessories, shall be 100% warranted, parts and labor, for a minimum period of 12 months against defects in material and workmanship. This clause does not release liability on those components with additional warranties as stated/required. Such repairs are to be completed without cost to the District. Warranty period starts from date of final acceptance by the District.

Body shall have a 5 year 100% parts and labor warranty.

Vehicle is to be supplied complete as specified below including:

(A) General, (B) Chassis, (C)Body, (D) Safety Equipment, (E) Wheel Chair Transportation Requirements, (F) District Lettering Template

The following sections contain optional items. These options shall be purchased/credited at the sole discretion of the District.

S	B-23: Fuel Tank
S	C-30: Heater/Defroster System
S	C-31: Air conditioning configuration options.
S	E-5: Passenger Seats
S	E-14: Wheel Chair Securement

Delivery to the Los Angeles Unified School District, is required by April 1, 1999. The District location accepting delivery will be the Sepulveda Garage, 8920 Sepulveda Boulevard, Sepulveda, Ca. 91343. Attn: Rudi Barkey 818-997-2643.

Questions and clarifications regarding this specification shall be directed to the Automotive Maintenance Specialist, Larry Turgeon, Automotive Maintenance Office, 2011 North Soto Street, Los Angeles, Ca. 90032. Phone: 213-227-4309, FAX: 213-221-3498.

Tools, manuals, and other support documents shall be delivered to the Automotive Maintenance Office, 2011 North Soto Street, Los Angeles, Ca. 90032. Attn: Larry Turgeon 213-227-4309.

The District intends to purchase approximately 6 buses as specified.

The District is also requesting pricing on the purchase of an additional one (1) to 40 more vehicle(s), depending on available funding.

Contractors shall submit a letter with the bid, indicating price and delivery constraints on intended and potential additional purchases under the terms of this bid.

A: General Specifications:

- 1: Gross Vehicle Weight Rating (GVW): 20,000 lbs. (minimum)
- 2: Overall Width, (excluding mirrors): 96" maximum
Overall length, (Bumper to bumper, excluding mirrors): 360"
- 3: Maximum Height: 140 inches maximum.
- 4: Headroom: 72" minimum, measured from center isle of passenger area. (See A-5)
- 5: Floor: Raised flat floor, 258" minimum from rear wall to driver area.
- 6: Paint: Complete body, including front fenders and hood shall be painted with polyurethane. Chassis and wheels shall be acrylic enamel.
- 7: Colors:
 - Body, front fenders, wheels, and hubs: National school bus chrome yellow
 - Interior: Light green
 - Roof: White. (Starting approximately 2" above the windows)
 - Rub rails: Black
 - Chassis: Black
- 8: Lettering:

Complete bus shall be lettered, using vinyl material, with 6" letters on the sides and 24" numbers on the roof. A 2 proportional size "U" is to be place behind each set of numbers. Vehicle numbers to be provided by the District prior to delivery. (See item F: District Lettering Template)

Buses shall be lettered in with LAUSD numbers cross referencing vehicle VIN sequence. (First LAUSD number is first VIN, last LAUSD number is last VIN.) This information shall be provided 30 days prior to delivery of the first vehicle.
- 9: Technical Manuals:

Contractor shall provide the following manuals and documentation.

1 set of drivers operators manuals per vehicle, including; engine, chassis, body, seat, radio, speedograph.

19 additional sets of operators manuals (as above) for the training departments.

7 complete sets of service and parts manuals on all components as delivered. Shall be delivered with the first vehicle.

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7 sets of : chassis line setting tickets, and body build parts lists, shall be supplied for each chassis, body as delivered. These items shall be placed in a binder, with dividers, in vehicle number sequence.

Tooling:

Provide 6 each Prolink scanners with latest cartridges for engine and transmission in plastic carrying case. Shall be delivered with first vehicle.

10: Training:

The following training is required as part of the order. This training shall be provided at no cost to the District. Training shall be completed within 2 weeks of delivery of the first vehicle.

- Driver Orientation:
- Contractor shall provide 8 hours training to instruct the District driver training staff on the safe operation of the vehicle.
- Maintenance Training:
- Contractor shall provide four (4) hours training (minimum) at each of the five (5) major garages on the operation and maintenance of the entire vehicle.
- Drive train:
- Contractor shall provide eight (8) hours training on the engine and eight (8) hours training on the transmission for 40 mechanics, covering diagnosis, adjustment, and repair.
- Air Conditioning:

Contractor shall provide 8 hours training (minimum) for 40 mechanics on the air conditioning system.

Air conditioning supplier shall provide all training necessary to certify LAUSD for in house warranty.

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B: Chassis and Drive train:

1: Type:

Standard hood conventional type chassis designed for school bus use, incorporating a sound-proofed, one piece fiberglass tilting hood assembly. Hood shall be designed so that it can be opened by a maximum pulling force of 20 lbs. Provide easy tilt hood system.

2: Frame:

Formed "C" channel straight design truck type frame certified for use in school bus application. Minimum size 10.0" x 3.0" x 0.3125" steel. Frame delivered shall be designed to provide 20 year vehicle life at maximum GVW rating. Provide front and rear frame mounted tow hooks.

3: GVW Rating:

GVW rating of 20,000 lbs. minimum. To be determined by vehicle manufacture, and indicated with submitted bid _____.

4: Wheel base:

Shall be 218". Wheel base may change based on floor configuration. Vendor to state wheel base: _____

5: Front bumper:

Heavy duty flat face formed "C" channel with step cut outs, 1/4" thick x 14" steel. Access to be provided for frame mounted tow hooks.

6: Wheels:

Shall be 8.25" x 22.5" disk wheels, 10 hole 11.25" B.C., using double nut mounting system. (Budd type). Six (6) wheels per vehicle. Shall meet DOT FMVSS 120. Shall be factory production painted National School Bus Chrome Yellow, (both sides). Do not paint lug nuts. Lug nuts shall be plated. Pilot mounted wheels are not acceptable.

7: Tires:

Shall be tubeless steel belted radial, 255/70R22.5 H rated. Six (6) tires per vehicle Goodyear G159. Shall meet DOT FMVSS 119.

8: Front axle:

10,000 pound rating incorporating oil bath seals, and utilizing outboard mounted brake drums. Shall provide minimum 45 degree inside wheel cut angle both left and right.

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9: Front Suspension:

Taper leaf springs, 10,000 lb. Include heavy duty double acting (1 3/4") shock absorbers.

Note: It is the intent of the District to have a minimum rated spring to reduce ride harshness, while incorporating an axle that utilizes outboard mounted brake drums. Contractor to provide available options, and chassis manufacture recommendations.

10: Rear Axle:

19,000 lbs. minimum rating, Rockwell or Spicer, incorporating oil bath seals and outboard mounted brake drums. Shall be geared for 65 MPH, and meet Allison SCAAN criteria. Gear ratio to be selected by the District at time of award. (See item B-15.)

11: Rear Suspension:

Factory air ride suspension. Include heavy duty double acting (1 3/4") shock absorbers. Shall include PR-2 protected air reservoir tank. Include heavy duty double acting shock absorbers, 1.75" bore.

12: Steering:

Factory production full power steering, with 18" diameter steering wheel. Ross TAS-55. Tilt steering column.

13: Brakes:

Factory production, Rockwell "S" cam, air brake system utilizing Bendix brake valves and components. Shall meet current DOT FMVSS 121 & 106 requirements, less anti-skid. System to include the following items:

- S Bendix TF 550 compressor, source air to originate from engine air filtration system.
- S Bendix ADIP drier.
- S Haldex self adjusting slack adjusters.
- S Outboard mounted brake drums.
- S Spring brake mounted parking system, including SR-1 valve. Shall maintain wheels locked on a 15% grade. (minimum)
- S Delete front limiting air valve.
- S Curb side remote air drains. Pull cable drains are not acceptable.
- S Air reservoir tanks are to be clearly labeled using 2" letters. (minimum.)
- S Long stroke rear brake chambers. (MGM type 3030LS)
- S Separate accessory air tank for air ride and all air related accessories. (Supply using Bendix PR-2 valve)
- S Rockwell anti-lock brake system.

14: Engine:

Navistar DTI 466, 210 HP. Full electronic controlled, California Certified.

Engine equipment shall include the following items:

- Dry type air filter with progressive locking air restriction gauge.
- Compressor air to originate from the engine air filtration system.
- Computer controlled high idle, driver switch, with indicator.
- Spin-on filters.
- Thermostatic fan.
- Silicone coolant hoses, all components.
- Shall provide 5 year 100% parts and labor warranty.
- Sound abatement package.
- Engine computer controlled, full protection and shutdown system, including power step-down.
- S Easy access connector for Pro Link scan tool.
- S Radio noise suppression filter, as required for vehicle operation. LAUSD uses an 800 MHZ communication radio system.

15: Transmission:

Allison MD 3060, 5 speed.

To incorporate factory installed water to oil cooling system. Allison SCAAN to be submitted with bid indicating best application for intended use. Lever type shifter, dash mounted. Push button shifter not acceptable. Pro Link scan tool access to be provided. Computer output circuit for wheel chair brake interlock.

Shall provide 3 year 100% parts and labor warranty.

16: Drive line:

Standard drive line incorporating static and dynamical balancing. To include drive line guards as required for each drive line section. Universal joints, Spicer 1610/IHC 1550, shall be greaseable.

17: Cooling:

Heavy duty cooling system, treated with 50% glycol based antifreeze, to maintain correct engine operation at maximum GVW rating during ambient temperature of up to 115 degrees. Shall be a closed recovery system with transparent coolant recover tank well marked for easy level identification without removing the cap. System shall incorporate silicone hoses and spring loaded (constant torque) clamps for all components, including engine, heaters, and compressor. Radiator shall be brass/steel type. Aluminum radiators are not acceptable.

18: Exhaust:

Heavy Duty exhaust system shall be plated (aluminized) to prevent corrosion, and exit below the rear bumper left side. Shall be designed to provide maximum clearance around the wheel chair lift assembly as required. Butt type connections with band clamps are not acceptable.

19: Electrical:

Electrical system shall utilize either uninterrupted color coded and/or numbered wiring, identified every 18-24". All main circuits shall be protected by circuit breakers SAE Type II.

20: Alternator:

270 amp minimum. Shall provide 55% of rated output at engine idle and maintain a charging status with vehicle loads engaged. Electrical requirements shall be based on electrical load, including air conditioning system. Contractor shall provide detailed information regarding electrical loads including air conditioning requirements. Alternator load capability shall be determined based on actual loads and duty cycle of the alternator submitted for bid. Bidder shall provide estimated vehicle electrical loads including air conditioning loads. The District shall be the sole judge as to the acceptability of the alternator(s) supplied.

Acceptable Units:

Leece Neville 270 amp model 4864A

Wiring from alternator to starter and alternator to ground shall be A00".

Alternator drive ratio shall provide maximum output at low speed. Shall utilize APoly Vee® type drive belt with heavy duty automatic tension device.

Bidder to indicate optional models.

List optional models:_____ Price for optional models:_____

21: Starter:

Delco 42MT type 450 with over crank protection.

22: Batteries:

Minimum, four, (4) each Delco 1150, 2500 CCA, using sealed cables. Batteries shall be mounted in a pull out drawer utilizing roller bearing slides. Fourth battery shall be isolated for the lift using a 12 volt solenoid controlled by the ignition circuit. (See E-10)

23: Fuel Tank:

65 gallon minimum left side mounted, meeting DOT FMVSS 301. Interior of fuel tank shall be coated to prevent corrosion. Fuel tank to be full at time of delivery. Body shall have "DIESEL" decal located above fuel door opening. Provide spring loaded two position body fuel door, which shall not be lockable.

24: Misc. Accessories:

- Dual electric horns
- Electronic back up alarm meeting CHP requirements.

C: School Bus Body

Body shall comply with Federal DOT FMVSS 217, 220, 221, and 222. Entire body shall utilize hemmed edges on all interior panels, and be void of sharp edges, especially in the proximity of the passenger seats, entrance door, and emergency exits.

Body shall be a convention style, mounted to the chassis with sufficient material to prevent separation in a vehicle accident or roll-over. Body shall be constructed with full width body cross members on 12" centers (nominal). Floor shall have roof bows attached and reinforced with a seat rail plate. Attachment of the side wall and floor is critical, therefore, additional support shall be incorporated to strengthen this area, including full wall steel sheeting fastened meeting Federal joint strength integrity requirements and exterior guard rails. Body shall have fixed reinforced rubber isolators between it and the frame. The body shall have two each fasteners per cross member to mount body to frame. Entire body shall be primed before painting, and all areas sealed with compound to prevent moisture penetration. Interior of all areas shall also be primed for corrosion resistance. Body structure shall be covered by a 5 year 100% parts and labor warranty.

1: Materials:

All materials utilized in the construction of the body shall be available to all body manufactures on an equal, non-proprietary basis. For maximum occupant safety, all exterior body panels shall be steel. The following materials are minimums:

- | | |
|------------------|----------|
| - Floor: | 14 gauge |
| - Exterior Wall: | 16 gauge |
| - Interior wall: | 22 gauge |
| - Exterior roof: | 20 gauge |
| - Interior roof: | 20 gauge |
| - Wall posts: | 14 gauge |
| - Roof bows: | 14 gauge |

2: Corrosion:

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The body material shall be treated with a zinc phosphate coating (or equal), and sealed to prevent outside contaminants from reaching the basic metal of the body. No part of the bus body shall have bare steel. All parts of the body shall have primer applied. The bottom of the body shall be coated with underseal prior to mounting on the chassis. The chassis shall not be coated with under sealer except as required for attachment around the engine cowl area.

3: Design:

Body shall be designed to current School Bus standards in effect for the State of California. Design shall provide for maximum body life.

The full length wall shall incorporate an internal passenger guard rail, 16 gauge minimum, welded to all vertical posts, located at seat level. All internal spaces shall be insulated.

All seams and joints shall be caulked/epoxied to meet joint strength criteria and to seal against moisture penetration. All interior panels shall be hemmed to eliminate sharp edges.

Body shall incorporate lower skirt sheeting and four (4) 16 gauge x 4 inch continuous rows of rub/guard rails for passenger protection. Guard rail locations: Under window, seat cushion, floor line, body skirt.

Provide spring loaded two position body fuel door, which shall not be lock able.

4: Rear Bumper:

Stamped steel wraparound type, 3/16" x 10" minimum.

5: Interior paneling:

All panels shall be coated steel, reverse lapped and hemmed. All inner side panels below the windows shall be mar resistant, "Aluminized". Material shall be fastened to every wall, and ceiling support, meeting Federal Joint Strength requirements. Interior height shall meet 72" minimum in passenger area with flat floor configuration, as measured from the aisle rubber to the ceiling as delivered. Ceiling area over the driver and step well shall be a noise abatement type perforated steel. (Area forward of flat floor section)

Provide front bulkhead access door, and rear bulkhead access panel.

Provide fuel tank sending unit access with cover, mounted flush with floor, painted black.

Provide easy access to entire main body wiring harness on both sides of the interior of the vehicle. Access cover(s) shall be re-moveable without removing other interior body panels, air conditioning ducts, evaporators, passenger securement tracks, or any other

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components. Cover shall be rounded, with rounded corners, and hemmed edges. Shall not interfere with removal of windows.

6: Escape Equipment:

See Section E: Wheel Chair Transportation Requirements for additional items.

Roof shall include one (1) each Transpec Triple Value roof hatch, located forward of center. Shall be operable from both the inside and outside. Exact location to be determined based on air conditioning system selected.

7: Luggage Compartment:

Provide one each luggage compartment approximately 25" wide x 21" deep x 14" high, curb side. Door shall be supported in the open position using gas charged cylinders if under access door, or chains if not under door. Steel full length hinges mandatory. Non-steel hinges are not acceptable. Compartment doors shall incorporate rubber seals to prevent entry of moisture.

8: Insulation:

Fire-resistant, fungus-resistant, non-insect breeding type insulation shall be incorporated in every area of the bus during construction. Minimum thickness two (2) inches. Roof area shall be double layered where applicable, especially at front and rear bulkhead area. No exposed metal surfaces.

9: Body Dimensions:

Body length 302" (Not including hood), Width 96", Cowl to axle length 193" (nominal), Rear overhang 109" (nominal), Headroom 72" (minimum).

10: Floor:

See Section E: Wheel Chair Transportation Requirements.

11: Seating:

See Section E: Wheel Chair Transportation Requirements, for additional requirements.

Bus shall be designed for 17 passenger, meeting DOT FMVSS 222. Shall be delivered and certified as a variable seating bus. However, body data plate shall indicate maximum possible passenger capacity.

12: Glass:

All glass shall be safety glazed and DOT FMVSS 205, SAE recommended practice J673b, J674a, J1203, and ANSI Z26.1-1977, Z26.1a-1980 as applicable.

13: Side Windows:

All windows shall be AS-3 tinted. Passenger windows shall be tinted to 28% light transmission. Shall be 12" split sash type, designed for easy serviceability. Shall be designed so that no part of the interior paneling, air conditioning ducts, AL@ track, etc, is removed for window replacement.

14: Driver Window:

Shall be AS-2 tinted, easily adjustable horizontal slide type using one hand. Latch must lock window automatically when in the closed position.

15: Passenger door window:

Shall be AS-2 tinted.

16: Windshield:

AS-1 tinted. For optimum safety, design emphasis shall be on maximum driver visibility. Shall have a minimum of 2000 square inches of effective driver viewing area. Shall be made of flat type glass without curves for easy replacement. Top 5 inches shall have dark glare resistant type band. Remainder shall be tinted to maximum allowed by CHP regulation.

17: Windshield wipers:

Vehicle shall be heavy duty electric design incorporating both variable and intermittent speed control features. Wiper blades shall be approximately 22" inches long. Wipers shall return to park position when turned to off position. Washer reservoir to be a minimum one (1) gallon capacity, with spray emitting from wiper arms. System shall meet DOT FMVSS 104, SAE J942. Wiper motors located above windshield preferred. Air conditioning system must not interfere with access to wiper motor assemblies.

18: Entrance Door:

Entrance door shall be bi-fold inward opening air operated incorporating an anti-slam air control device, emergency air release valve, and inside door handle for emergency exit. Include header pad, same color as the seats. Door control to located on drivers control panel. Door assembly shall have provision at the bottom for a standard padlock to secure the door closed. Door actuator mechanism shall have latched easy access hinged panel, with a device to hold it in the open position. Door operational system shall be designed with positive stops to prevent undue stress on door assembly. Door shall be warrantied for 5 years. Door shall have external handle for driver to use to close door. Shall be located on bottom front panel. No other latches allowed.

19: Rear Emergency Door:

See Section E Wheel Chair Transportation Requirements, for additional requirements.

Shall comply with California regulations. Doors shall have instructions and arrows indicating latch operation on both sides of the doors. Both doors shall be equipped with warning buzzers, and light located on the drivers console. Warning buzzer shall be audible in the entire length of the bus, loaded with maximum pupil capacity.

Rear of body shall include one emergency door 34 7/16" x 60". (nominal) Bottom window shall have an interior expanded metal guard fastened to the door to protect glass. Metal guard shall not obstruct exit opening.

Remove all sharp edges from door, door frame and latch mechanism.

20: Exterior mirrors:

Shall comply with DOT FMVSS 111. All components shall be of heavy duty design, minimum 1.0" diameter tubing. Shall include two (2) minimum 16" high x 7.0" wide "West Coast" type flat mirrors, each with a minimum of 90 sq. inches of reflective area.

Two (2) minimum 6.0" round type convex mirrors. Shall have two (2) each six (6) inch ACats Eye® front fender mounted crossover mirrors, one each side.

21: Interior lights:

Interior lights shall be furnished as follows:

- Two (2) rows of Interior dome lights shall be located every 6 feet (approximate) spaced equal distance from outside walls so as to not interfere with air conditioner duct system in the passenger area.
- The wheel chair lift shall have a single light directly overhead with a separate switch located in the ceiling, adjacent to the lift. Same circuit as other interior lights.
- A step well light controlled by door operation.

- A drivers map light.

22: Head lights:

- S Shall include auto functioning daytime running lights.

23: Exterior lights:

Shall comply with DOT FMVSS 108 and SAE J887A performance criteria. Light assemblies shall be Light Emitting Diode (LED) sealed assembly type with sealed connectors, Truck Lite, Grote, or District approved equal.

To include the following:

- Clearance / I.D., Five (5) each end, plus one (1) center.
- Two (2) Red rear stop lights
- Two (2) Red rear tail lights
- Two (2) Clear rear backup lights
- Two (2) Amber rear directional lights
- Two (2) Amber side directional lights (near front of body, drivers window area.)
Shall have shields for protection from damage.
- Two (2) Fender top mounted turn signal lights.
- Two (2) Amber front directional lights
- Two (2) Amber front light
- One (1) Clear rear license plate lights
- Four (4) Red/Amber side marker lights

Rear exterior lights located below the roof line shall not extend past rear bumper, and lenses shall be retained with screws or in a rubber molding. Snap on lenses are not acceptable.

24: LAUSD crime alert lights:

Clearance / I.D. lights shall be designed to operate in a flashing mode by the driver using a foot mounted switch (Painted Red). Flasher shall be silent type.

25: School Bus Crossing Lights:

Shall be eight (8) light sealed beam type system meeting California Specifications. To include crossover light shields, which shall be one piece per corner, black in color. (2 lights per shield) Lense shield shall be one piece, painted black to aid in visibility. Include pilot light at drivers console. Control system shall use Weldon module. Individual shields are not acceptable.

26: Stop Arm:

Specialty manufacturing model 6500-5103. Shall meet California, Federal, and SAE J1133 requirements. Electrically operated. Location on vehicle to be determined by CHP requirements.

27: Passenger Seats:

See Section E: Wheel Chair Requirements

28: Seat Material:

See section E: Wheel Chair Requirements

29: Drivers seat:

Shall be a heavy duty bus type air ride with fore/aft, up/down, lumbar, and tilt adjustments. Shall incorporate a seat belt meeting DOT FMVSS 209 without shoulder harness. Material shall meet same criteria as the passenger seats with a cloth insert. (Non fire block) Seat shall adjust to accommodate drivers from 5'0" tall weighing 95 pounds to 6' 3" tall weighing 250 pounds. Air supply shall enter compartment below the seat mount.

Contractor shall provide information and pricing on available optional seating, to be selected at the option of the District.

30: Heater/Defroster System:

Shall meet DOT FMVSS 103 and SAE J381,J382. 87&33 110,000 BTU minimum. Silicone coolant hoses. The bus shall incorporate sufficient hot water heaters to provide an internal temperature of 65 degrees with an ambient temperature of 20 degrees 50% humidity. To include front heater, drivers foot heater, windshield defroster, and rear auxiliary heater. To include coolant shut off valves on the engine. Rear heater shall be mounted on the rear wall adjacent to the rear door and fire extinguisher.

Provide credit value if rear heater is deleted. _____.

Defroster shall be capable of clearing the entire width and height of the windshield. One driver position-able 6" auxiliary fan (two speed) shall be provided.

31: Air Conditioning System:

The District will determine which air conditioning system will be used prior to the body build date. All systems shall be installed by the local franchised dealer under the supervision of the LAUSD designated representative. The basic needs are: an 80,000

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BTU air conditioning system, with components that are properly secured in place, drains that don't drip water onto students, covers that don't fall onto students, compressors that stay bolted to the engines and won't vibrate the bus, and hose fittings that don't leak or break. There shall be no evaporator mounting hardware on the exterior roof area. (Except roof top units)

Interior evaporator mounting supports shall be provided within the body frame work structure. Supports shall be made of steel, 3" wide x 1/4" thick, (approximate) attached to roof bows. These pieces shall be structurally designed to support the weight of the evaporator units. Location shall be designed to ensure proper evaporator mounting, regardless of the interior air conditioning system selected.

- S Rear area of the body on each side of the rear emergency door, located at 6" and 24" from exterior wall. (4 pieces) and shall extend forward from the rear wall approximately 18 inches. (Shall be roof bow to roof bow design)
- Front area over driver between front roof bows approximately 5" and 17" from bus interior wall. (2 pieces)

Exterior air conditioning unit supports shall be designed to attach to roof bows. Any structures added shall be designed to ensure that no moisture is trapped, or rain/water movement is restricted, etc. System shall be design to ensure a dry environment to prevent corrosion.

Refrigerant type shall be R-134A. Contractor shall provide detailed layout drawing and specifications of system with bid. Contractor shall evaluate each system to ensure that it is properly designed to this vehicle per these specifications. It is the contractors responsibility to provide a system that meets the needs of this vehicle which operates in a daytime environment with an ambient temperature of 110+ degrees.

Ducting shall have an insulation barrier to reduce heat transfer from the exterior wall surface.

Contractor shall provide detailed drawings of body structure, and information on all air conditioning systems, showing mounting locations, support structure, and hose routing. The District shall evaluate systems submitted and determine which system to install.

The following requirements apply to entire air conditioner system, regardless of model purchased:

- S All fittings shall be 100% plated steel.
- S All AO@ rings shall be designed specifically for R-134A
- S All Connections shall use AO@ rings. Flare taper fittings are not acceptable.
- S Hose shall be Aeroquip 505, with service loops at each end. Hose shall be secured to the engine within 8 inches of the compressor(s).
- S Service ports shall be located on compressor fittings, not in the hoses.
- S All mounting brackets shall be of sufficient material to withstand vibration and other related stress for the life of the vehicle. All bolts and fasteners shall be

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- grade 8 minimum.
- S Compressor(s) shall be properly secured to the engine.
- S All wiring shall be enclosed in looms, and of sufficient gage for compliance with SAE J-541a for heavy duty vehicles. Voltage drop shall not exceed .12 volts per 100 amps.
- S Low pressure shut down switches.
- S High pressure shut down switches.
- S Interior evaporators and/or ducts shall not interfere with the accessibility of maintenance items, such as window replacement, access to wiring, or wheel chair tie down locations.
- S 12 volt operation.
- S Warranty shall be 3 years 100% parts and labor.

System 1, Carrier roof mount, fully ducted.

- S Model # GR-45 with the following options.
- S Brush type condenser motors
- S Brush type evaporator motors
- S Self diagnostics
- S TM-31 compressor
- S Low profile ducts, with insulated barrier on ceiling.
- S Driver duct
- S Hand held service scan toll (7 for entire order)

Price:_____

Additional price for internal heater system:_____

System 2, Carrier interior evaporator system, free blow.

- S 3 each EM-6 evaporators, 2 in rear, 1 above driver.
- S 2 each CM-2 condensers
- S TM-31 compressor
- S Driver duct

Price:_____

Additional Price for internal heater per evaporator:_____

System 3, Thermo King Roof Mount, fully ducted.

- S Model MRT-1
- S Self diagnostics
- S TM-31 compressor
- S Hand held service scan tool (7 for entire order)
- S Low profile ducts, with insulated barrier on ceiling.
- S Driver duct

Price:_____

Additional Price for internal heater system:_____

System 4, Thermo King internal evaporator system, free blow.

- S 3 each S-20 evaporators, 2 in rear, 1 above driver.
- S 1 each S-20 condenser
- S 1 each S-30 condenser
- S TM-31 compressor
- S Driver duct

Price:_____

Additional Price for internal heater per evaporator:_____

System 5, Trans Air internal evaporator system, free blow.

- S 3 each TA-70 evaporators, 2 in rear, 1 above driver.
- S 2 each SMC3 series condensers
- S TM-31 compressor
- S Driver duct

Price:_____

Additional Price for internal heater per evaporator:_____

System 6, RAC internal evaporator system, free blow.

- S 3 each RE-10 evaporators, 2 in rear, 1 above driver.
- S 2 each RC-20 condensers
- S TM-31 compressor
- S Driver duct

Price:_____

Additional Price for internal heater per evaporator:_____

32: Drivers Console:

Drivers console shall include the following equipment within easy reach and visibility:
(Shall meet DOT FMVSS 101)

- Premium quality switches for all functional components associated with the body, and chassis. (Rocker style preferred)
- Heavy duty turn signal switch, Signal Stat 910
- Webb solid state heavy duty flasher. Standard flasher is unacceptable.
- Full gauge package; including Air, Oil, Temp, Volt, Fuel, Transmission, RPM, Air Application.
- Warning buzzers for; Oil, Air, Water, Doors, Transmission.
- ARGO Speedograph Model 1315-32, 24 hour. Cover to use knob closure instead of key.
- AM/FM radio (No Cassette), with standard speaker package.
- S Radio noise suppression filter.
- Driver map/reading light.
- Interior rear view mirror, (6" x 20" nominal).
- S Main power switch for wheel chair lift. Shall control power supply for lift and brake interlock.
- Shifter to be located on dash panel, not on console or pedestal.

33: Misc. Accessories:

- CHP Certificate holder
- Registration holder
- Portable Stop Sign and holder.

D: Safety Items:

1: Fire Extinguisher:

Bus interior shall have two (2), 5 pound Type "ABC", Amerex Model 500, located at the front and rear emergency door. Mount using Amerex bracket model 821.

2: Safety Triangles:

Supply one (1) set Grote 71422 safety triangles mounted in luggage compartment.

3: First Aid Kit:

Supply one (1) 24 unit First Aid Kit, mounted. District to determine mounting location.

4: Communication Radio:

Mounting location for drivers unit and amplifier shall be provided.

Conduit shall be installed at the factory for the roof mounted antenna leads. Provide and install Decibel DB-726L20N mobile roof antenna located at the front center approximately 12 inches from the front edge of the roof. Antenna shall be sealed with silicone and riveted in place. Wiring shall not interfere with insulation. Interior of body shall not have holes/cover. LAUSD will not accept a body with holes, or access covers installed over holes used to install roof antenna. Antenna cable shall exit at the radio mounting location.

E: Wheel Chair Transportation Requirements

Listed below are the specification items required for a vehicle delivered with this option. All other requirements and specifications remain in effect.

Lift assembly specifications:

1: Lift type to be installed shall be a fold out type: Braun 937A or a Ricon AS-2005® series with the following requirements:

- S Pump unit shall incorporate secondary containment to prevent leaks from contacting bus flooring material.
- S All visibility strips shall be glued in place.
- S Inboard roll stop pivot fasteners shall be flat faced and not protrude into operational area of the lift.
- S Bridging valve shall be designed to allow for high curbs without folding inward.
- S Control cord shall be approximately 65"long with a military grade connector plug to facilitate replacement of the cord. (Not hard wired to unit.)
- S Cord shall be secured to lift door with a rubber covered clamp to prevent pinching.
- S Provide 2 controller holders,

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- S one on the inside of the exterior door.
- S one on the inside bus wall to the rear of the lift opening, 20.5" from the floor, and 5.75" from door opening
- S Install underfloor reinforcement mounting plates 1/4" x 12" long x 3" wide. (Approximate)
- S Mount pump handle to tie down box, at wall end.
- S Provide complete Braun removable pad kit.
- S Decal bus with appropriate warning and operation decals to comply with CHP regulations.
- S Power supply for lift (main) shall be attached to the starter or other appropriate location. No connections shall be made at the battery.
- S Control circuit shall be controlled by a designated and labeled switch in the drivers consol. Shall be a bus company switch.
- S Lift assembly shall be electric/hydraulic operated. Operation modes shall be independent and operate as follows:
 - Lift operation: Power to lift, gravity to lower.
 - Park: Power to park, gravity release.

Indicate which model is included in bid price: _____

Indicate optional cost for the other lift: Model: _____ Price: _____

Lift model will be selected by the District.

2: Stanchions, barriers, and handrails:

Provide floor to ceiling stanchion forward of the lift incorporating a lift barrier, horizontal grab rail, and left hand rail. Barrier shall prevent access to lift from step well area. Provide left side entrance hand rail.

Provide right side entrance hand rail.

Provide layout with bid.

3: Body:

Provide additional strength in the body structure to meet DOT FMVSS 220, 221 with an installed right side one piece lift door, located immediately rearward of the passenger entrance. Door shall have a clear opening dimension of 42" wide and 62" high. (nominal)

Install twin body cross members under the floor at the locations of the wheel chair lift mounting location. Install additional frame to body support plates 1/4" x 6" x 28" (nominal) securing the body to the frame. These plates shall transfer the wheel chair lift load to the chassis, removing the lift strain from the body. An insulator to provide for body movement may be incorporated into this brace assembly. The Bus Body manufacture shall provide information ensuring that the bus body is designed with sufficient strength to 20 year operation using the lift.

Wheel chair passenger harness tie down track (Kinedyne AL® type) shall be factory installed above windows on window header supports, both sides the full length of the body meeting DOT FMVSS 222, to accommodate all wheel chair positions. Track shall be attach to the body structure such that electrical harness, and all windows can be serviced and removed without disturbing any part of the track system. All track holes shall be available for use as required. All tracks shall be fastened with Kinedyne approved countersunk fasteners. Plastic type inserts shall be provided to seal the floor/wall tracks over those areas not in use. Track shall be black anodized type.

4: Floor requirements:

Floor shall be flat in the passenger area. Shall be 5" (nominal) raised steel floor, starting behind driver. Floor shall have a usable length of 258 inches from rear wall to step well area. Provide fuel sender access with cover.

Shall be 14 gauge formed steel minimum. Shall have 5/8" exterior grade plywood subfloor, covered with 1/8" fiber reinforced transit grade smooth floor rubber, glued in place, including wheelhouses. Floor and aisle color shall be black. Aisle ways shall have 3/16" skid resistant R.C.A. ribbed rubber glued in place. Steps shall be surfaced with 3/16" H.D. ribbed rubber glued in place with white safety edges, R.C.A. or equivalent, meeting ADA regulations. All floor covering material shall meet DOT FMVSS302, Federal GSA ZZ-M-71B, ASTM E-648. All seams shall be covered with molding or permanently rubber welded together.

The entire floor shall have 4 rows on continuous AL® track installed on the left side, and 4 rows of continuous AL® track installed on the right side, the full length of the usable passenger area to match existing floor material. (Black anodized) Track shall be recess mounted so as to provide a smooth flat floor. (No track in front of the lift) Track shall be properly fitted with no gaps around outside edges of track.

5: Passenger Seats:

Shall meet DOT FMVSS 222. Track type seat mounting system. All aspects of the passenger seats and barriers shall meet Federal and California regulations. In addition, seat frames shall be certified and equipped with mounting tabs for use with seat belts. Seat belt assemblies are to be supplied, 2 per seat color coded per seating position. Seats and barriers shall be 30" wide. All stanchions and barriers shall be padded. Shall be mounted using AL-track type® mounting system. Removeable plastic track inserts shall be provided for between seat locations. Body manufacturer supplied decals shall be installed on the central interior side ceiling area on each side of the bus providing instruction on how seats are to be positioned and installed for compliance with FMVSS 222. Provide 6 seat assemblies with the vehicle.

Provide price option to supply 36 inch seat in place of 30" : _____ per seat.
(2 sets of seat belts/seat)

Provide price option to supply 39 inch seat in place of 30" : _____ per seat.

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(3 sets of seat belts/seat)

6: Seat Material:

Seat material shall meet DOT FMVSS 302. Cover material shall be 42 oz. minimum heavy duty automotive grade vinyl. Color shall be forest (dark) green. Restraining barriers and head guards shall match and be made of the same material as the seats. Material shall be reinforced fire blocker type meeting the ABoston Bag Test[®] for flame retardation.

7: Emergency ramp:

Provide factory installed emergency escape ramp 30" wide x 144" long, located under the floor, accessible from the rear emergency door. Ramp shall be design so that it is pulled out and dropped to the ground which raises rear of ramp to floor height. Driver shall not be required to lift ramp to position it at floor height. Ramp shall be permanently secured to the vehicle. (Re-moveable by maintenance personnel) Include latch to secure ramp in stowage position. (Anti-rattle device) Two (2) straps shall be provided for the operator to use to lift ramp from the ground for stowage. Ramp access shall be provided when emergency door is opened. No separate door for ramp.

8: Emergency Rear Door:

Shall provide 34" x 58" rear emergency door. (nominal) Clear opening 34" x 57". (nominal) All other specification requirements remain the same. Door, when closed, shall cover and secure emergency ramp access.

Remove all sharp edges from door, door frame and latch mechanism.

9: Emergency Left Side Door:

None required, delete left side door.

10: Lift Electrical:

Provide one Delco 1150 battery dedicated for lift use. This battery shall be located in the same battery compartment as the main batteries. (Total of 4 batteries) Battery shall be wired as per diagram, except solenoid activation shall be from ignition switch source, not alternator. All lift power requirements shall originate from this battery. Magnetic switch shall be Cole Hersee 24059. A diode isolator system is not acceptable.

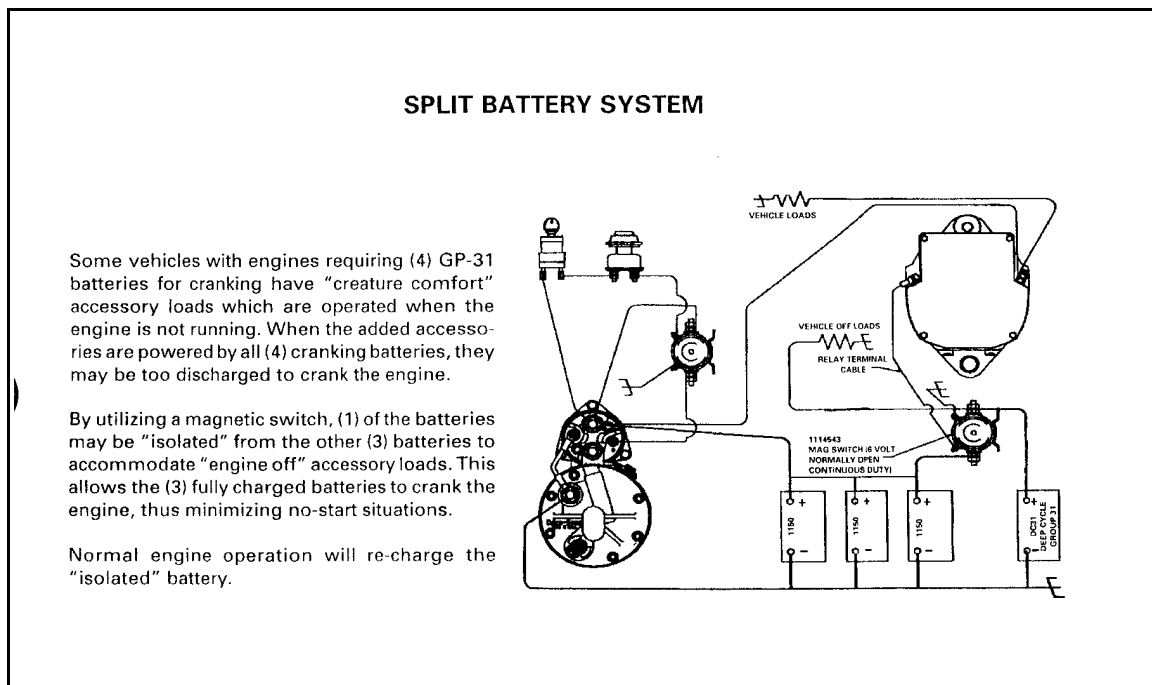
11: Battery Wiring Schematic For Dedicated Lift Battery

Power supply cable from the battery to the pump shall be as follows:

- (a) Cable length under 200 inches requires "O" cable size.
- (b) Cable length over 200 inches requires "OO" cable size

Operator control circuits shall be protected by auto-resetting circuit breakers. Power supply for all lift components shall originate from the dedicated battery.

All wiring shall be enclosed in vinyl plastic meeting SAE J1128 type GPT. All wiring outside the passenger compartment shall be Neoprene/Hypalon jacket construction, with flexible insulation inside, securely mounted and protected from damage, 16 ga. minimum. Wiring harness shall have quick disconnect junction block and circuit breakers mounted in the pump area to facilitate easy service. All wiring shall be color coded.



12: Lift Door:

One (1) side lift door (42"W x 62"H approx.), and shall be provided adjacent to the passenger entrance door. Shall be outward opening and match existing body construction. Door in open position shall not block passenger entrance, and open flat against the body. A latch mechanism shall be provided to hold the door in the open position. Such securing device shall not protrude more than 2 inches from the body wall. Rubber/bayonet type holders are preferred. Door shall use heavy duty hinges, designed to last the life of the body. Door latch area shall have a device to support the weight of the door during vehicle operation. Door shall have 5 year warranty.

Instructions for door operation shall be provided on both sides of the doors. Minimum letter size is 2". Doors shall incorporate warning light and buzzer, which shall be included in the emergency door warning system.

All parts of the lift and doors shall be painted to match existing materials. All door posts, headers, and floor sections shall be structurally reinforced and trimmed providing equivalent to all adjacent construction. Head guard pad shall be installed above door. All stanchions and barriers shall be padded. Ground to top of door shall not exceed 108 inches

Provide optional price for ADA door. (Ground to top of door can not exceed 108".)

Option price: _____

13: Brake Interlock

The bus lift system shall incorporate a brake interlock for lift operation. Power for control system shall originate from driver lift switched circuit. This interlock shall not operate if the bus is in motion. Brake interlock system shall control parking spring brakes, and not the service brakes. A system override shall be provided to allow movement of the vehicle in case of system control failure. System details shall be provided with bid for evaluation by District personnel. Preferred item: Safety Systems, model ADot Lok@,

14: Wheel Chair Securement:

Securement system shall meet DOT FMVSS 222. Kinedyne AL Track@ wheel chair, and passenger securement system. Wheel chair passenger securement system shall incorporate adjustable shoulder harness. System shall be compatible with track mounted seat assemblies. Track assemblies shall be integral with the bus body, and not added onto the existing body panels. Upper securement harness track shall be factory installed above windows on window header supports, both sides, to accommodate all wheel chair positions. Track shall be attach to the body structure such that all windows can be serviced and removed without disturbing any part of the track system. All track holes shall be available for use as required. All tracks shall be fastened with Kinedyne approved countersunk fasteners. Plastic type inserts shall be provided to seal the floor/wall tracks over those areas not in use between the seats. Provide 4 rows of floor mounted track on both sides (8 rows total) at standard spacing; 7, 16, 24, 33, and one row above window line each side (2 rows total). Interior panels shall be removable without disturbing track system.

System shall be designed for wheel chair securement using Kinedyne kit FE517

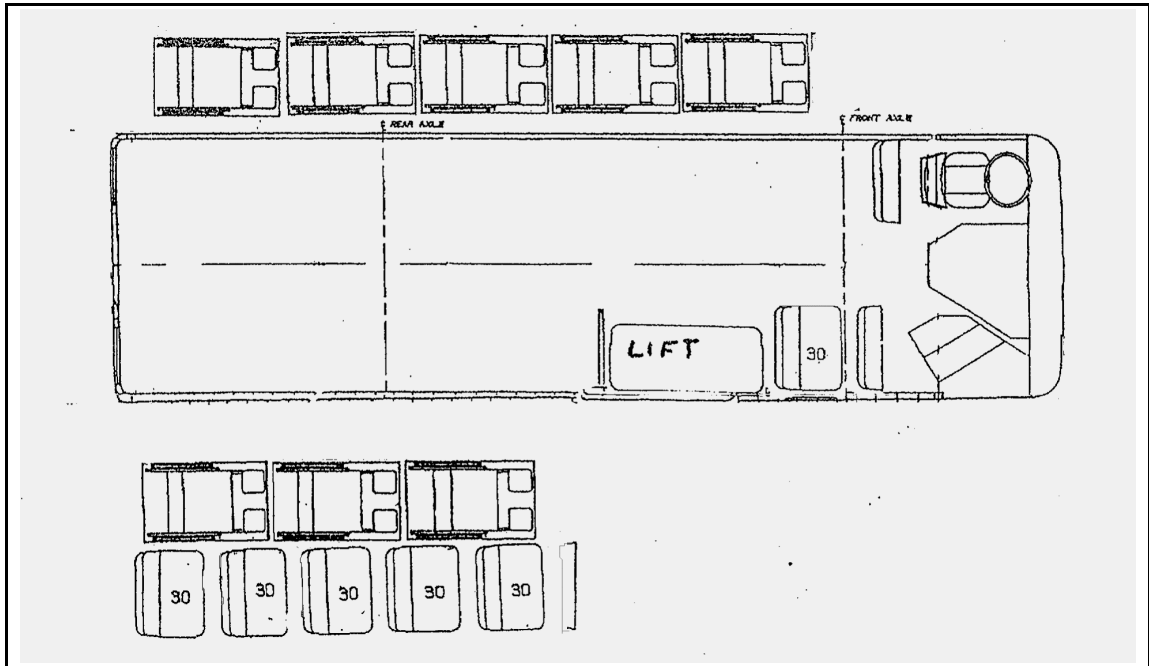
Provide the following hardware per vehicle:

S	5 ea. Kinedyne FE517
S	5 ea. Kinedyne FE200599
S	5 ea. Kinedyne FE200594

15: Floor Plan:

Contractor shall submit detailed floor plan indicating wheel chair stations, and provision for 30", 36", and 39" seats with bid. Plan shall show optional seating arrangements and configurations for best possible flexibility and utilization of space. The District concept is as follows: Curb side shall incorporate interchangeable seating between any combination of seats and wheel chairs using the same floor track. The driver side shall be designed for wheel chair stations only. The District is open to suggestions for other floor plans.

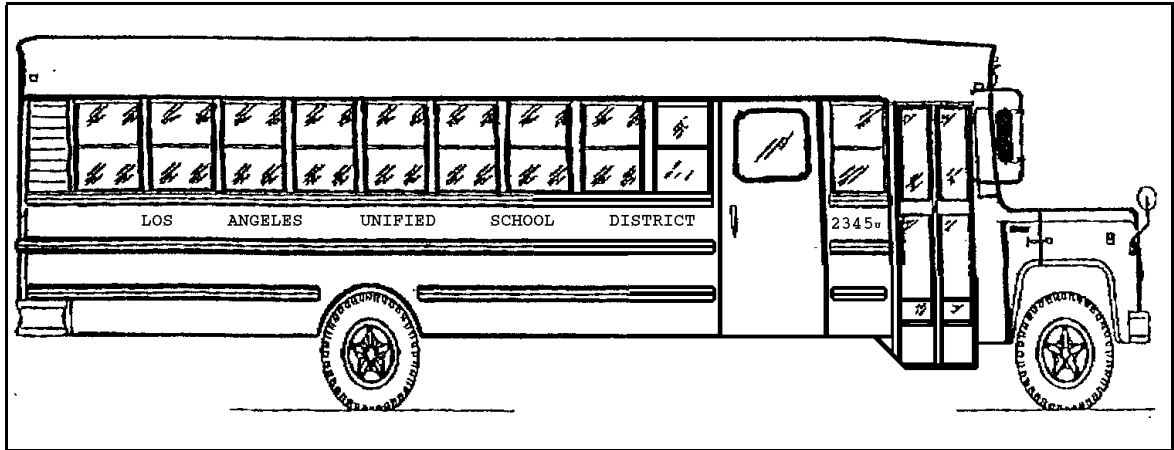
The vehicle shall be permanently marked with OEM decals indicating proper seat location to comply with FMVSS 222.



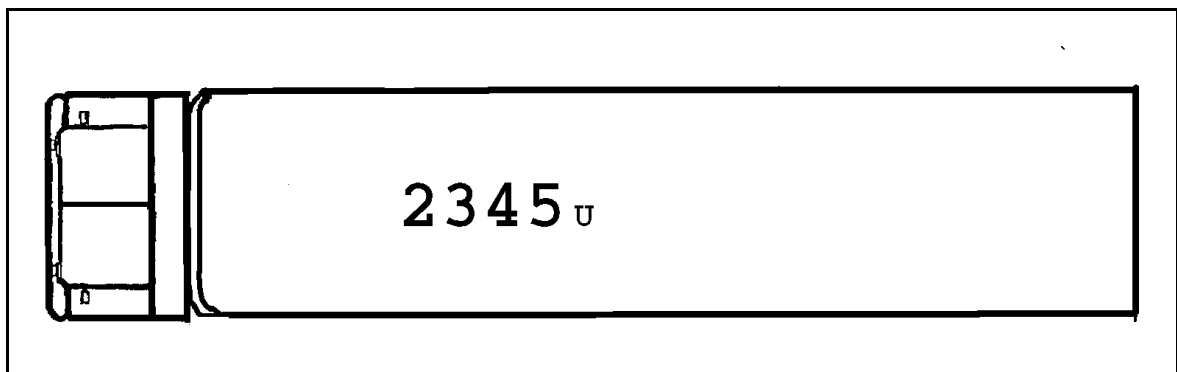
Sample Of Required Floor Plan Layout

F: District Lettering Template

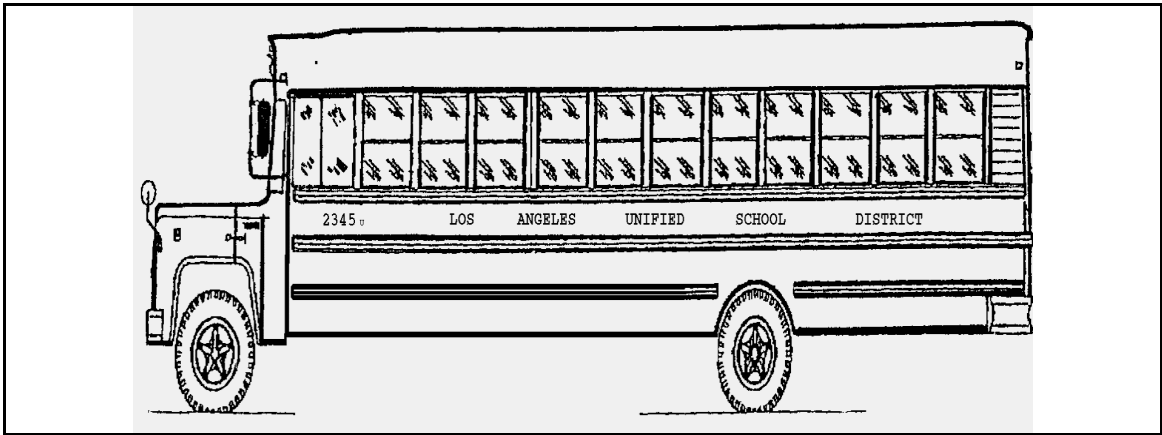
The District requires the bus to be lettered as indicated below. Direct any questions to the Automotive Maintenance Specialist at 213-227-4309.



Right Side With Wheel Chair Door



Bus Top View



Left Side View

Acceptance of Bid Specifications, and Bid Document Requirements

The contract bidder shall submit this entire completed bid specification with their bid package acknowledging full compliance with all specifications as listed. Contract Bidder shall list all deviations. Unless indicated by bidder, vehicles shall be manufactured and delivered per this specification.

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Contract bidder shall provide all information as necessary for the complete evaluation of the bid, including chassis order documents, body build documents, air conditioning system documents, etcetera. Those bid proposals that fail to include all necessary documents may be considered non-responsive.

This form shall be signed by the authorized representative of the company submitting the bid, indicating formal notice of the requirements of this bid specification.

Signature of Authorized Representative

Date

Name of above, (printed)

Title of above

Company

Location address

City, State, Zip

Phone

FAX

Vehicle warranty and service location, if different than above.