[NOT MEASUREMENT
SENSITIVE]
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COMMERCIAL ITEM DESCRIPTION

BUSES, MOTOR: COMPACT, FORWARD CONTROL, 8600 TO 13 500 POUNDS GVW, 12, 16 AND 20 PASSENGER, 4x2

The General Services Administration has authorized the use of this Commercial Item Description (CID) for all federal agencies.

1. SCOPE. This CID covers gasoline and diesel engine driven, two-wheel drive, compact, forward control type buses having a minimum gross vehicle weight (GVW) between 8600 and 13 500 pounds (lbs) [3900 and 6120 kilograms (kg)].

2. CLASSIFICATION. Buses will be one of the following styles and types, as specified (see 7.2):

Style A - Low headroom - van conversion or wide body.
Type I - 12 adult passengers.

Style B - High headroom - wide body.
Type I - 12 adult passengers.
Type II - 16 adult passengers.
Type III - 20 adult passengers.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any other data which may improve this document should be sent by letter to: U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E/BLUE, Warren, MI 48397-5000.

AMSC N/A FSC 2310

3. SALIENT CHARACTERISTICS

3.1 Standard vehicle and accessories. Except as specified herein, the vehicle, components, assemblies, and accessories to be delivered under the contract shall be standard or optional items which meet or exceed the requirements of this CID. Except as specified herein, no removal, substitution or alteration of the chassis manufacturer's standard or optional chassis model components shall be made. The chassis model furnished shall not be older than the chassis manufacturer's current model on the date of invitation for bids.

3.2 General design.

3.2.1 Federal Motor Vehicle Safety Standards. The vehicle and furnished accessories shall comply with all Department of Transportation (DoT) Federal Motor Vehicle Safety Standards (FMVSSs) in effect on the date of manufacture, including standards applicable only to school buses, except:

a. Exterior color shall be as specified in 3.10.
b. School bus signal lamps may be omitted when specified (see 3.5.7.5).
c. Compliance with FMVSS No. 222 is not required. Seats shall be in accordance with section 3.7.3 in lieu of FMVSS No. 222.

3.2.2 Air pollution control. The vehicle shall comply with Environmental Protection Agency Regulations governing Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines in effect on the date of manufacture. In addition, vehicles destined for California shall comply with State of California regulations governing air pollution control in effect on the date of manufacture.

3.2.3 Sound level. The cab interior sound level at the driver's seating position shall not exceed 84 decibels (dB) when measured in accordance with DoT Federal Motor Carrier Safety Regulation (FMCSR) 393.94. The vehicle exterior sound level shall conform to Environmental Protection Agency (EPA) Interstate Motor Carrier Noise Emission Standards when tested in accordance with the Regulations of the DoT, Part 325. The vehicle interior sound level shall conform to Standards for School Buses and Operations, Interior.

3.2.4 Curb weight. The curb weight shall include the weight of the chassis, with all attachments, accessories, and equipment; and a full complement of fuel, lubricants, and coolants.

3.2.5 Payload. Vehicle payload shall consist of one operator plus the number of passengers specified (see 2), computed at 150 lbs (68 kg) each.

3.2.6 Gross vehicle weight. GVW shall be the combined curb weight and payload weight. Maximum rated GVW shall not exceed chassis manufacturer's rating, and shall not be less than the following:

a. Style A - 8600 lbs (3900 kg).
b. Style B, type I - 10 000 lbs (4540 kg).
c. Style B, type II - 12 500 lbs (5670 kg).
d. Style B, type III - 13 500 lbs (6120 kg).

3.2.7 Accessibility. The design of the vehicle and optional equipment shall permit ready accessibility for routine servicing and shall permit accessibility for replacement and adjustment of component parts and accessories with minimal disturbance of other components and systems.

3.2.8 Harmful materials. Asbestos, cadmium, and radioactive materials shall not be used in this item. Radioactive material is defined by Title 10, Code of Federal Regulations (CFR), Part 40, and material in which the radioactivity is greater than 0.002 microcuries per gram or 0.01 microcuries total activity for the item.

3.3 Performance.

3.3.1 Speeds and gradeability. High and low speed requirements shall be met with the vehicle loaded to specified GVW.

3.3.1.1 High speed gradeability. The vehicle shall ascend a continuous grade of 2 percent at 50 miles per hour (mph) [80 kilometers per hour (km/h)]. Gradeability shall be verified in accordance with SAE J688.

3.3.1.2 Low speed. Low speed shall be determined with the engine operating at not less than 35 percent of the recommended operating speed, and shall provide a vehicle speed not greater than 4 mph (6 km/h).

3.3.2 Service brakes. The service brakes shall control and hold the vehicle, when loaded to its required GVW, on a 30 percent grade. The service brakes shall stop the vehicle, loaded to required GVW, within the stopping distance requirements of FMCSR 393.52.

3.3.3 Turning radius. The turning radius, defined as the distance from the turning center to the centerline of the tire describing the largest circle while the vehicle is executing its sharpest practicable turn, shall be not greater than 30 feet (ft) [9.1 meters (m)].

3.4 Chassis components.

3.4.1 Engine.

3.4.1.1 Gasoline engine. Unless otherwise specified (see 3.4.1.2), the engine shall be a liquid cooled, internal combustion, four-stroke cycle gasoline type, with not less than six cylinders. The engine shall produce the required vehicle performance when operated on unleaded fuel with a research octane rating of 91, at engine speeds not more than the manufacturer's recommended operating speed. The engine shall be capable of warranted operation on unleaded fuel when used in accordance with the operator's manual. Engine net horsepower used in performance prediction calculations shall be determined in accordance with SAE J1349.

3.4.1.2 Diesel engine. When specified (see 7.2), the engine shall be a liquid-cooled, compression ignition, two-stroke or four-stroke cycle diesel type, with not less than six cylinders. Engine net horsepower used in performance prediction calculations shall be determined in accordance with SAE J1349. The engine shall demonstrate the performance characteristics specified herein when using diesel fuel conforming to A-A-52557.

3.4.2 Governor. When available as standard or optional equipment, an engine governor shall be furnished, set, and sealed to limit the engine to its maximum recommended operating speed.

3.4.3 Cooling system. The cooling system shall maintain the engine coolant at a temperature below the boiling point with the vehicle loaded to GVW, and operated in an ambient air temperature of not less than 125 degrees Fahrenheit (°F) [52 degrees Celsius (°C)]. The coolant system shall include a surge tank or a coolant recovery reservoir of not less than a two-quart capacity. Thermostatic control of engine coolant temperature shall be provided.

3.4.4 Power plant heaters. When specified (see 7.2), coolant and engine oil heaters and fuel warmer (diesel engine driven vehicles only) shall be provided. Unless otherwise specified (see 7.2), a battery heater shall be provided when power plant heaters are specified.

3.4.5 Fuel system. The fuel system shall conform to FMCSRs 393.65 and 393.67.

3.4.5.1 Air cleaner. An air cleaner shall be furnished. When equipped with an oil-bath type air cleaner, oil capacity shall be not less than one quart.

3.4.5.2 Fuel tank. A single safety fuel tank conforming to FMCSRs 393.65 and 393.67 shall be furnished. The fuel tank shall have not less than 22 gallons (gal) [83 liters (L)] capacity, and shall be located under the floor of the bus. The tank filler shall be arranged for safe and convenient filling from exterior of body.

3.4.6 Exhaust system. The exhaust system shall conform to National Safety Council Standards for School Buses and Operations - Exhaust Systems. The exhaust tailpipe shall be located to minimize the possibility of exhaust fumes entering the body.

3.4.7 Transmission. Transmission input torque capacity shall be at least equal to the maximum torque delivered by the engine. Rear axle ratios and transmission ratios shall provide the specified speeds and gradeability (see 3.3.1).

3.4.7.1 Automatic transmission. Unless otherwise specified (see 3.4.7.2), a continuous drive, automatic transmission shall be provided. The transmission shall include a hydraulic torque converter and not less than three forward gear ratios. Normal driving range selector position shall provide not less than three gear ratios without movement of the selector.

3.4.7.2 Manual transmission. When specified (see 7.2), the manufacturer's standard manual synchromesh transmission shall be furnished. The transmission shall provide one reverse speed and not less than three forward speeds. The transmission shall provide for maximum ease of shifting with synchronized shift in all gear ranges.

3.4.7.2.1 Clutch. The clutch shall be the largest capacity clutch offered for the size of engine furnished with torque capacity exceeding maximum delivered engine torque.

3.4.8 Driveline components. Driveline components shall be adequate to transmit the maximum delivered torque of the engine, as developed through the maximum gear train reduction. Propeller shaft guards shall be provided in accordance with FMCSR 393.89.

3.4.9 Suspension. The vehicle shall be equipped with a suspension system having a rated capacity at least equal to the load imposed on each member, measured at the ground, and loaded with specified payload. When suspension capacity is rated at the spring pads, unsprung weight shall be deducted. The vehicle shall be equipped with hydraulic, double-acting shock absorbers on the front and rear wheels.

3.4.10 Axles. Axle ratings shall be at least equal to the load imposed on each axle, measured at the ground, when the vehicle is loaded to the specified GVW. A single reduction rear axle shall be furnished.

3.4.10.1 Positive traction differential. When specified (see 7.2), the drive axle shall be furnished with positive-traction, limited-slip, or automatic locking differential.

3.4.11 Wheels, rims and tires. The vehicle shall be equipped with single front and single or dual rear wheels. Rim size shall be the same for all wheels on the vehicle. Tire size and ply rating shall be the same for all tires on the vehicle. Rim and tire ratings shall conform to Tire and Rim Association recommendations for the type and size of tires furnished.

3.4.11.1 Tires. Tires shall be of the tubeless type with highway tread. Steel belted radial or, when specified (see 7.2), bias ply tires shall be furnished. Tires shall have a rated capacity at least equal to the load imposed on each tire, measured at each wheel, at the ground, with the vehicle loaded to specified GVW. Tires and tire size designation systems shall conform to Tire and Rim Association recommendations.

3.4.11.2 Balancing. Each tire shall balance within practicable limits. Wheels, hubs, and brake drums shall be effectively in balance. Balancing shall be adequate to prevent wheel shimmy at all vehicle speeds.

3.4.12 Brakes. Brakes shall conform to FMCSRs 393.40 through 393.42, and 393.44 through 393.52. The vehicle shall be equipped with vacuum assisted, hydraulic actuated service brakes on all wheels.

3.4.12.1 Split hydraulic brake system. The vehicle shall be equipped with a service brake system so arranged as to provide separate systems for at least two wheels, and so designed and constructed that rupture or leakage-type failure of any single pressure component of the service brake system, except structural failures of the brake master cylinder body, effectiveness indicator body, or other housing common to the divided system, will not result in complete loss of function of the vehicle brakes when force on the brake pedal is continued. “Pressure component” means any internal component of the brake master cylinder or master control unit, wheel brake cylinder, brake line, brake hose, or equivalent, except vacuum assisted components.

3.4.13 Bumpers. Front and rear bumpers shall be provided. The rear bumper shall conform to FMCSR 393.86 and shall be as specified in 3.4.13.1.

3.4.13.1 Rear bumper. The chassis manufacturer’s standard bumper may be furnished for style A. For style B, the rear bumper shall be of the heavy steel channel type with anti-ride and anti-hitch features, attached in a manner to permit the bus to be pushed without permanent distortion of bumper, body, or chassis.

3.5 Electrical system. The electrical system shall be in accordance with FMCSRs 393.27 through 393.31, and 393.33.

3.5.1 Radio interference suppression. The vehicle shall be suppressed to limit electromagnetic radiation in accordance with SAE J551. Any body equipment emitting radiation shall be suppressed to the same level as the vehicle chassis.

3.5.2 Ignition system. For gasoline engine driven vehicles, a 12-volt direct current (dc) ignition system shall be furnished.

3.5.3 Starting system (diesel engine). For diesel engine driven vehicles, a 12-volt dc starting system shall be furnished. Engine starting equipment shall include thermostatic control of engine coolant temperature and ether starting system, or a glow plug. If an ether starting system is furnished in lieu of a glow plug, it shall be of the measured shot type. The measured shot type ether system shall be key operated or manually operated from the driver's compartment and shall be inoperative with the engine warm. Complete provisions for a replaceable reservoir of not less than 12 fluid ounces [350 milliliters (mL)] shall be furnished. A reservoir need not be furnished.

3.5.4 Alternator. Unless otherwise specified (see 7.2), on diesel engine driven vehicles, a minimum 100-ampere (A) alternator shall be furnished. The alternator output with the engine at engine idle speed shall not be less than 20 A. Unless otherwise specified (see 7.2), on gasoline driven vehicles, an alternator of not less than 75 A rated capacity, which provides not less than 20 A dc output at normal engine idle speed, shall be furnished.

3.5.5 Batteries. Each battery shall be of 12-volt (V) potential. The total reserve capacity rating, measured in accordance with SAE J537, shall be not less than 100 minutes for gasoline engine driven vehicles, and not less than 320 minutes for diesel engine driven vehicles. The total cold cranking rating at 0°F (-18°C), measured in accordance with SAE J537, shall be not less than 500 A for gasoline engine driven vehicles and not less than 1200 A for diesel engine driven vehicles. The batteries shall be of the maintenance-free type. The batteries shall be located in an accessible location in the engine compartment or on a sliding tray in an enclosed compartment. The tray shall be coated with acid-resistant material. The battery compartment shall be provided with an access door on the side of the body, and the sliding tray, with battery(s) mounted, shall be capable of being pulled out for inspection without detaching the battery(s). When air conditioning is specified (see 3.8.3), additional battery capacity shall be furnished, if required, to meet total electrical power requirements.

3.5.6 Battery cables. The battery cables shall be routed and secured in such a manner as to prevent chafing of the cable at any point. The vehicle shall be furnished with a one-piece battery-to-ground cable and a one-piece battery-to-solenoid cable. Cables shall be mounted, fastened, and protected so that they will not become loose during service. The edges of all holes in metal members, through which the cables pass, shall be bushed with rubber grommets.

3.5.7 Lighting. Vehicle lights, reflectors, and wiring shall be the manufacturer's standard and shall comply with FMVSS No. 108. The electrical system shall be 12 V. Lights and reflectors shall not be mounted on rub rails (unless recessed and fully protected) or vehicle bumpers. An illuminated rear license plate holder shall be provided. When specified (see 7.2), two fog lamps, in accordance with SAE J583, shall be furnished.

3.5.7.1 Turn signals. The vehicle shall be provided with double-faced front signal units, or single-faced front signal units in conjunction with armored, amber turn signals over the front wheelwells, and with single-faced rear signal units. Front and rear signaling lamps shall operate simultaneously. Turn signals shall not be mounted on the engine compartment hood.

3.5.7.2 Brake lights. At least one pair of brake lights shall override the four-way emergency flasher or the two systems shall be independent of each other. Modifications to the manufacturer's standard product to accommodate this requirement shall not compromise conformance to any FMVSS. If additional lights are added to the vehicle, the lights shall be selected from the chassis or body manufacturer's standard matching hardware.

3.5.7.3 Interior lighting. Interior lighting shall include 15 candela domelights, of grade and quality providing not less than 21 square inches (in^2) [135 square centimeters (cm^2)] of polished reflecting surface, fitted with frosted translucent lens providing not less than 30 in^2 (193 cm^2) areas. For style A bus, not less than two domelights shall be installed in the passenger area. For style B bus, domelights shall be installed over each row of two-passenger seats, placed over the first or second seat from the front, and thereafter over each second seat. One domelight shall be installed over the driver area and controlled with a separate switch. Door operated step lamp(s) shall be furnished and installed to provide illumination of stepwell and ground adjacent to steps. An emergency door identification red light, with not less than a 3 inch (in.) [7.6 centimeter (cm)] diameter lens, shall be provided in accordance with FMCSR 393.92.

3.5.7.4 Indicator light. The split hydraulic brake system shall be equipped with an electrically operated red light mounted on the instrument panel to indicate system effectiveness. The light shall have an area of not less than 0.2 in^2 (1.3 cm^2). It shall illuminate upon application of the brakes when an actuating-pressure component of the system has sustained a loss of pressure. The indicator light system shall include a means for testing by the vehicle operator to assure that the light bulb is operable.

3.5.7.5 School bus red signal lamps. Unless otherwise specified (see 7.2), the vehicle shall be equipped with four red signal lamps conforming to FMVSS No. 108.

3.5.8 Passenger signal buzzer. When specified (see 7.2), the manufacturer's standard signal buzzer equipment shall be furnished, operated by pull cords on both sides of the bus, and provided with a driver's cut-out switch.

3.6 Body.

3.6.1 Body styles. The style A bus shall be a forward control van conversion with a low headroom raised roof and the chassis manufacturer's standard body width at the beltline, or a wide body with low headroom mounted on a forward control chassis. The style B bus shall be a

high headroom, constant beltline width body mounted on a forward control chassis, or the passenger area of the body shall be wider than the driver's cab and mounted on a commercial cutaway van chassis.

3.6.2 Dimensions. Bus interior body dimensions shall be as specified in 3.7.1, and bus external dimensions shall be as follows:

a. Overall width shall not be less than 79 in. (201 cm) for style A bus, not less than 84 in. (213 cm) for style B bus, and not greater than 96 in. (244 cm) for either style A or style B bus. The body width at the driver's station for style B bus shall not be less than 79 in. (201 cm), but need not be equal to the passenger compartment width.
b. Overall height shall not be greater than 117 in. (297 cm).
c. Wheelbase shall be not less than 125 in. (318 cm), except style B, type III bus shall not be less than 157 in. (399 cm).
d. Overall length shall be not greater than 230 in. (584 cm), except style B, type III bus shall be not greater than 253 in. (643 cm).
e. Ground clearance shall not be less than 7 in. (18 cm) under axles and tie rods and not less than 9 in. (23 cm) under all other parts.

3.6.3 Construction. The body, roof, and panel joints shall be watertight and leakproof. All parts, where applicable, shall be fastened together in a manner which will prevent loosening of bolts, screws, and rivets, and cracking of welded joints when the vehicle is properly maintained and operated under the intended service conditions. Self-tapping screws shall not be used where subjected to stress.

3.6.4 Body mounting. Heavy rubber cushions or antisqueak material shall be utilized between the body frame and attaching chassis parts on the forward control chassis. Reinforcements or filler blocks shall be used where mounting devices might otherwise deform frame flanges. Mounting devices shall be locked units which will minimize loosening, but which may be tightened if necessary. The cutaway van chassis may use direct mounting of the body to the frame.

3.6.5 Wheelhousings. Rear wheelhousings shall include splash shields under the body. Splash shields shall extend around the top of the wheel, and to the bottom of the body side skirting, front and rear. Ample clearance for the use of tire chains on at least the outside driving wheels shall be provided.

3.6.6 Roof. The roof exterior and interior panels shall be of steel sheet, aluminum sheet, or molded fiberglass construction. All panels shall be fully integrated into the body shell and securely fastened to the framing or roof bows, as applicable.

3.6.7 Rollover protection. The bus roof structure shall be in accordance with FMVSS 220.

3.6.8 Insulation. Nonsettling, nonhygroscopic, fungus resistant, fireproof insulation shall be installed in roof, side, and end walls. In addition, a coat of material shall be applied to the inner (not exposed) surfaces of exterior panels and other sheet metal as added insulation, and to prevent drumming.

3.6.9 Doors. Not less than two doors shall be provided in the bus. The service door shall be at the front, on the side opposite the driving controls, for use by entering and departing passengers. The emergency exit door shall be centrally located in the rear. Each shall be provided with effective compression or overlapping seals to minimize entry of dust, water, and cold air.

3.6.9.1 Service door. The service door shall be either sedan type or two-leaf type, with manual control conveniently located for driver use. The operating linkage shall be installed within the body or enclosed to prevent accumulation of mud, ice, or snow. Minimum dimensions for style B bus door clear opening shall be 24 x 70 in. (61 x 178 cm), unobstructed by door seals or door operating mechanisms.

3.6.9.2 Emergency door. The emergency door shall be located in the center, at the rear, for convenient exit. A permanently installed handle, recessed flush with the rear of the body, shall be provided for opening the emergency door from outside the bus. A switch operated by the door bolt shall be connected to a buzzer in the driver's area to indicate to the driver when the emergency door is not safely latched. A red emergency door identification light (see 3.5.7.3) shall be installed on the emergency door header. The red warning light shall activate when the ignition switch is in the "on" position. The header shall be marked with the following in block letters not less than 2 in. high: EMERGENCY DOOR.

3.6.9.3 Door locking provisions. When specified (see 7.2), locking provisions shall be furnished for the service and emergency doors. The sedan type service door shall be key locked, and two-leaf doors shall be provided with a hasp for padlocking. A locking bolt shall be provided for the emergency door, with an interlock to prevent the engine from starting when the emergency door is locked.

3.6.10 Windows. Windows shall be provided with fingertip control, permitting ready opening and adjustment to various desired openings. Windows shall be rattleproof and, when closed, rainproof, waterproof, and windproof. Driver's window(s) shall permit use for signaling and ventilation. Safety glass shall be used in all windows. All windows shall be fitted with locking devices. When air conditioning is furnished, or when specified (see 7.2), manufacturer's standard tinted windows and windshield shall be furnished.

3.6.11 Windshield. A windshield, allowing maximum practicable driver vision, shall be installed at a slope sufficient to minimize external glare or reflections from inside the body. If the windshield is not cleanable from ground level, a step and a grab handle shall be provided on each side of the bus to facilitate cleaning the windshield.

3.7 Body interior.

3.7.1 Inside body dimensions. At the top of the passenger seat back, the body inside width shall not be less than 72 in. (183 cm) for style A bus; not less than 78 in. (198 cm) for style B, type I bus; and not less than 85.5 in. (217 cm) for style B, type II and type III buses. At the aisle centerline, the inside height shall not be less than 60 in. (152 cm) for style A bus, and not less than 72 in. (183 cm) for style B bus. The length of the passenger compartment shall be sufficient to provide not less than the minimum seat spacing.

3.7.2 Floor. The floor frame and floor plates, with entrance step and wheelhousings, shall be of substantial construction properly integrated with the body structure, and shall conform to FMCSR 393.84. Wood parts, including plywood, shall be treated to prevent against deterioration.

3.7.2.1 Floor coverings. The underseat floor area, wheelhousings, aisle, and entrance shall be covered with rubber or synthetic rubber blend material. Coverings shall be properly installed and adequately sealed at the joints. The floor in the driver's area shall be covered with a mat or with the same materials used in the underseat or aisle areas.

3.7.2.2 Stepwell. The stepwell shall be of the enclosed two-step type, constructed of steel, covered with ribbed rubber or synthetic rubber blend material. Padding shall be provided above the stepwell to provide head protection for exiting passengers.

3.7.3 Seating. Seating shall be provided for the number of adult passengers specified (see 2.).

3.7.3.1 Seating arrangement. The seating arrangement shall consist of three, four, or five rows of forward facing seats mounted on each side of an aisle of not less than 14 in. (36 cm) in width. For styles A and B, type I buses, two-passenger seats shall be furnished on both sides of the aisle, or there shall be two-passenger seats on one side of the aisle and one-passenger seats on the other. On style B, types II and III buses, two-passenger seats shall be furnished on both sides of the aisle. The aisle and seating locations shall be arranged to provide adequate access to the front streetside door and rear emergency door. Individual seat locations in one row may be staggered with respect to the other row, if required to maximize seat spacing or improve access.

3.7.3.2 Seating dimensions. Seats shall be spaced on not less than 30 in. (76 cm) centers for style A, 32 in. (81 cm) centers for style B, type I, and 29 in. (74 cm) centers for style B, types II and III buses. There shall not be less than 10 in. (25 cm) between the forward edge of the seat cushions,

and the back of the seat or barrier panel ahead. Seat width for two-passenger seats shall be not less than 36 in. (91 cm). Width for single-passenger seats shall not be less than 22 in. (56 cm). Seat back width may be reduced at the emergency door to provide clear access to the door. Seat cushions shall have a free depth of not less than 17 in. (43 cm) from the forward edge of the cushion to the seat back. Seat back height from the seat cushion shall not be less than 18 in. (46 cm).

3.7.3.3 Passenger seat construction. Seat backs shall be inclined, shaped, and padded to provide passenger support and comfort. The top, the upper corners, and the upper 10 in. (25 cm) of the rear surface of each passenger seat back (except the rearmost seats) shall be constructed of, or covered with, force distributing material. The material shall minimize force and spread the area of contact, upon impact by an occupant in the next seat, to the rear.

3.7.3.4 Seat covering. All seat material shall be in accordance with the flameproof requirements of FMVSS No. 302. Color of upholstery shall be appropriate with exterior color and shall coordinate with interior colors.

3.7.3.5 Seat belts. Unless otherwise specified, or required to be furnished under the FMVSSs, passenger seat belts need not be furnished. When specified (see 7.2), bus manufacturer's standard or optional type I, single occupancy seat belts, of the pelvic (lap) restraint type, shall be installed for each bus passenger. The seat belt assemblies shall conform to FMVSS No. 209, and the seat belt assembly anchors shall conform to FMVSS No. 210.

3.7.3.6 Driver's seat. The driver's seat shall be the chassis or body manufacturer's standard seat, and shall be adjustable, fore and aft, without the use of tools. The seat shall be positioned for convenient and safe operation of all controls by the driver. The seat cushion and back shall be padded, contoured to provide maximum driver comfort, and covered with heavy duty vinyl or polyester material. A seat belt shall be provided.

3.7.4 Stanchion and barriers. A stanchion or grab rail shall be provided at the service door to assist entering passengers. When the stanchion is located to the rear of the service door, it shall be padded. A padded barrier shall be provided ahead of the right front seat between the seat and the entrance step. The barrier width shall be approximately equal to the seat width.

3.8 Accessory equipment. The following minimum equipment shall be furnished:

a. Key-operated ignition switch.
b. Ammeter, charging indicator or voltmeter.
c. Fuel gage.
d. Oil pressure gage or indicator.

e. Engine temperature gage or indicator.
f. Speedometer.
g. Recording odometer.
h. Highbeam operation indicator light.
i. Tachometer (diesel engine driven buses only).
j. Electric horn.
k. Dual windshield wipers and washers.
l. Power steering.

3.8.1 Controls and operating mechanisms. All controls and operating mechanisms shall be located for left hand drive. Controls shall be complete and conveniently operable by the driver when in a seated position. Lever controls shall be designed and located to permit easy entrance and exit of the operator to and from the driver's seat. All instruments and controls shall be identified as to their function and installed in a manner to facilitate removal and servicing. All instruments shall be visible to the driver when seated in the driving position.

3.8.2 Heating, defrosting and ventilating. The heating, defrosting, and ventilating system shall conform to FMCSRs 393.77 and 393.79.

3.8.2.1 Heater. A hot water heater system, having a total capacity of not less than 35 000 British thermal units (Btu) per hour for style A bus and 60 000 Btu per hour for style B bus at 150°F (66°C) water to ambient air temperature differential, shall be installed. Adjustable manual controls shall be provided to permit outside air, recirculated air, or variable mixtures, as desired, to circulate through at least the main heater core. Heater(s) shall be located to assure flow of heated air to the driver's area and to all parts of the passenger compartment without the direct flow of air into the passengers. Heater hoses shall be shielded from the passenger compartment and located in protected positions. An auxiliary recirculating heater shall be provided, if required, to maintain a comfortable temperature for all passengers.

3.8.2.2 Defroster. Defroster outlets with suitable connections and independent blower(s) shall be furnished for the driver's side of the windshield, and a fan or blower for the opposite side, to provide an adequate flow of air to both halves of the windshield. The windshield defrosting systems shall conform to SAE J381 and SAE J382.

3.8.2.3 Ventilator. Ventilator(s) of the static type, capable of providing an adequate supply of fresh air and properly ejecting foul air under all conditions of operation, shall be provided in the roof. Outside openings for heaters and ventilators shall be located to minimize entry of fumes, rain, road dust, and road wash. Vent openings shall be provided with a weatherproof cover capable of being opened and closed from inside the vehicle.

3.8.3 Air conditioning. When specified (see 7.2), the manufacturer's standard air conditioning system shall be furnished. The system shall provide adequate cooling for all passenger locations. The air conditioning system shall include, but shall not be limited to, any necessary insulation, increased engine cooling capacity, alternator and battery capacities, and tinted windshield, window, and door glass, if available.

3.8.4 Mirrors. Two outside rearview combination mirrors (flat and convex), enclosed in a common housing, shall be furnished. Each mirror shall have at least 50 in^2 (323 cm^2) of flat reflective area, a convex surface having at least 25 in^2 (161 cm^2) of reflective area, and a radius of curvature of not less than 20 in. (51 cm). The inside rearview mirror shall be furnished having a reflective surface area of not less than 80 in^2 (516 cm^2). When specified (see 7.2), the manufacturer's standard convex crossview mirror(s) shall be mounted on the front of the bus to provide a driver's view of the front bumper and the area in front of the bus.

3.8.5 Sunvisor. An adjustable sunvisor, not less than 6 x 16 in. (15 x 41 cm), shall be furnished.

3.8.6 Stowage compartment(s). Provisions shall be made for weatherproof stowage of tools and tire chains, when carried, to be secured by a padlock. The padlock is not required to be furnished.

3.8.7 Emergency equipment. A 5 lb dry chemical type fire extinguisher conforming to FMCSR 393.95(a) shall be mounted convenient to the driver. The fire extinguisher shall have an Underwriter's Laboratory rating of 2A 10B:C or more, shall be a minimum of 5.5 lb, shall have a hose, shall include a metal safety pin and wire, and shall conform to type I or type II, class 2, size 5 of A-A-393. The fire extinguisher shall permit visual determination of condition of charge. Three emergency reflective triangles conforming to FMCSR 393.95(f)(2)(i) shall be furnished and properly stowed.

3.8.8 Spare tire assembly and tools. When specified (see 7.2), a spare tire assembly shall be furnished and stowed on the vehicle in a readily accessible location. The tire assembly shall consist of a tire mounted on a wheel or rim and shall be of the same type as the other tire assemblies furnished on the vehicle. The spare tire assembly shall be so located as to not protrude beyond the body. Threaded fasteners, when used to secure the spare wheel in the carrier, shall be constructed of, or plated with, corrosion-resistant material. When specified (see 7.2), the vehicle shall be furnished with tools required for exchanging a mounted tire assembly with a spare assembly, and shall include at least a hydraulic jack, jack handle, and wheel nut wrench. The jack shall be of such closed height as to permit its location under axle, or other satisfactory lift point, at any wheel with the tire flat. The jack, without blocking, shall be capable of raising any wheel of the loaded vehicle to a height adequate to permit removal and replacement of the wheel and tire assembly.

3.8.9 Signs. Signs to read “DANGER - DO NOT EXTEND ARMS FROM WINDOWS” shall be affixed to the interior of the body, in not less than four appropriate locations, legible at a distance of 20 ft (6 m); one at the front, one at the rear, and one on each side.

3.8.9.1 Destination sign compartment. When specified (see 7.2), a destination sign compartment shall be installed at front center of the roof above the windshield. The compartment shall provide not less than 180 in^2 (1160 cm^2) of glass enclosed frontal area of a height to permit reading of 6 in. (15 cm) letters on the sign roller, and shall be readily accessible through the latched door from inside the bus. The compartment shall be illuminated to permit reading of the destination sign at night. The destination sign shall be a roller type of a capacity to apply 15 listings of 6 in. high letters and shall be operable from the interior of the bus. Unless otherwise specified (see 7.2), the destination sign roll will be furnished blank.

3.8.9.2 Standee line signs. Areas prohibited to standees shall be marked in accordance with FMCSR 393.90.

3.8.10 Keys. Keys in duplicate, for all key-operated locks, properly identified, shall be safely packed and secured to the vehicle steering wheel, or otherwise stowed in an approved manner for shipment. All locks on the same vehicle shall be of the same key code, except the ignition.

3.9 Servicing and adjusting. Prior to acceptance of the vehicle by the Government inspector, the contractor shall service and adjust the vehicle for operational use including at least the following:

a. Aligning of lights.
b. Adjustment of engine and brake systems.
c. Filling and charging of battery.
d. Alignment of front wheels.
e. Inflation of all tires.
f. Complete lubrication of body, chassis, engine, and running gear, with grades of lubricants recommended for the ambient air temperature at the delivery point.
g. Servicing of cooling system with a solution of ethylene glycol type antifreeze and water in equal parts by volume.
h. Servicing of windshield washer reservoir with water and appropriate additives.

3.10 Treatment and painting. Unless otherwise specified (see 7.2), treatment and painting shall be in accordance with the manufacturer’s standard practice, and the color shall be National School Bus Yellow.

3.11 Rustproofing. When specified (see 7.2), the vehicle shall be rustproofed in accordance with the manufacturer’s standard practices. The vehicle shall be fabricated from compatible materials providing corrosion protection and coating adherence equal to or exceeding that provided by hot

dip galvanized 1010 steel, with coating thickness in accordance with ASTM A123. A proposed alternate design shall be compared to a galvanized sample (as described above) using ASTM D522 Mandrel Bend Test, followed by the Accelerated Corrosion Test GM 9540P, Method B, 120 cycles, or until prior failure of one of the items with defects, such as extensive corrosion at scribe or significant penetration of base material.

3.12 Identification marking. All markings shall be as specified in the contract or order (see 7.2). When specified (see 7.2), concealed markings shall be furnished.

4. REGULATORY REQUIREMENTS

4.1 Recovered material. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

5. QUALITY ASSURANCE PROVISIONS

5.1 Responsibility for inspection. The contractor is responsible for the performance of all inspections, examinations, and tests.

5.2 Contractor certification. The contractor must certify and maintain substantiating evidence that the product offered meets the salient characteristics of this CID, and that the product conforms to the producer's own drawings, specifications, workmanship standards, and quality assurance practices. Items with known defects will not be submitted for Government acceptance. The Government reserves the right to require proof of such conformance prior to the first delivery, and thereafter, as may be otherwise provided for under the provisions of the contract.

6. PACKING. Preservation, packing and marking shall be as specified in the contract (see 7.2).

7. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

7.1 Addresses for obtaining copies of referenced documents.

7.1.1 Government documents. Copies of CIDs A-A-393 and A-A-52557 may be obtained from the Defense Printing Service Detachment Office, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094. Copies of DoT publications may be obtained from the Department of

Transportation, Federal Highway Administration, Washington, DC 20591. Copies of Environmental Protection Agency publications may be obtained from the Code of Federal Regulations, 40 CFR, which may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

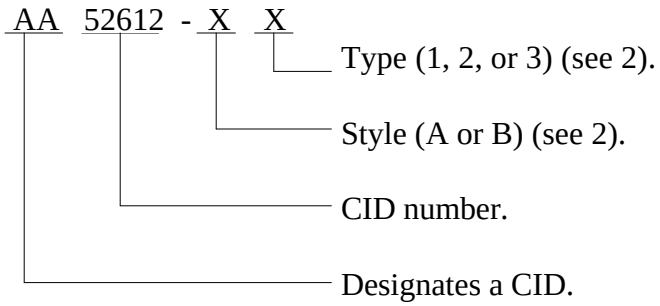
7.1.2 Non-Government publications. Copies of ASTM A123 and D522 may be obtained from the American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959. Copies of GM 9540P may be obtained from General Motors Corporation, c/o Global Engineering, 15 Inverness Way, Englewood, CO 80112. Copies of NSC Standards for School Buses and Operations may be obtained from the National Safety Council (NSC), P.O. Box 558, Itasca, IL 60143-0558. Copies of SAE J381, J382, J537, J551, J583, J688, and J1349 may be obtained from the Society of Automotive Engineers (SAE), 400 Commonwealth Drive, Warrendale, PA 15096-0001. Copies of the "Vehicle Code of California" may be obtained from the Department of Motor Vehicles, 2570 24th Street, Sacramento, CA 95809. Copies of the "Tire and Rim Association Yearbook" may be obtained from the Tire and Rim Association, Inc., 175 Montrose West Ave., Suite 150, Copley, OH 44321.

7.2 Ordering data. Acquisition documents must specify the following:

a. Title, number, and date of this CID.
b. Issue of DODISS to be cited in the solicitation.
c. PIN and quantity of buses required.
d. If a diesel engine is required.
e. If power plant heaters are required.
f. If battery heater is not required.
g. If manual transmission is required.
h. If positive traction differential is required.
i. If bias ply tires are required.
j. Alternator capacity if other than as specified.
k. If fog lights are required.
l. If red signal lamps are not required.
m. If signal buzzer is required.
n. If door locking provisions are required.
o. If tinted windows are required.
p. If seat belts are required.
q. If air conditioning is required.
r. If crossview mirrors are required.
s. If spare tire assembly is required.
t. If tools are required.
u. If destination sign compartment is required.
v. If other than a blank destination sign roll is required.

w. Type of treatment and painting required.
x. Color required if other than specified.
y. If rustproofing is required.
z. Type of marking required.
aa. If concealed markings are required.
ab. Packing requirements.

7.3 Part or Identification Number (PIN). The PINs to be used for buses acquired to this CID are created as follows:



7.4 Cross reference data. Buses conforming to this CID are interchangeable/substitutable with buses conforming to MIL-B-62117J.

MILITARY INTERESTS:

Custodians:
Army - AT
Navy - YD1
Air Force - 99

Review Activities:
Navy - MC
Air Force - 84, 85

CIVIL AGENCY COORDINATING ACTIVITY:
GSA - FSS

Preparing Activity:
Army - AT

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