USD 261
HAYSVILLE
SCHOOLS

TO Haysville USD 261 Board of Education

FR Dr. Clint Schutte – Assistant Superintendent for Business & Finance

DA January 22, 2018

RE Request to seek bids for two Blue Bird Buses – One 72 Passenger and One 21 Passenger

History:

We try to continually replace one to two buses every school year. This avoids the pitfall of having to replace multiple buses when their individual and legally required usage comes to term. School busses can legally be kept on the road for 25 years. We have one bus that is 24 years old. We also consider condition in our decision to keep a bus.

What?

We are asking for a resolution authorizing Haysville USD 261 to seek bids for one 2019 72-passenger Blue Bird All-American bus and one 2018 Blue Bird Microbird G-5 21-passenger bus.

Why?

The market has begun to pick up and by placing our order now we will be able to receive the buses in late fall. It is currently taking up to 6 months to receive bus orders.

Where?

We will seek bids from Kansas authorized dealers of Bluebird buses. This is a proprietary type and will most likely only elicit one bid from Kansas Truck.

When?

We will bring the bids back to the February Board of Education meeting for approval.

How?

We will send the specs together with a request to bid to authorized dealers (see attached).

Who?

Transportation director with the assistance of the director of operations will handle all biding.

How Much?

There is zero cost to seeking bids. Any approved bids will be brought back to the board of education for approval.

Specifications for a 2019 Blue Bird
Forward Engine School Bus Body/Chassis

1. Vehicle shall be new, 2019 year model transit design, built to 2003 FMVSS joint strength standards.
2. CHASSIS AND BODY ARE TO BE DESIGNED, ENGINEERED, AND BUILT IN U.S.A. BY ONE MANUFACTURER AS ONE COMPLETE AND INTEGRATED VEHICLE.
3. Vehicle capacity to be 72 passenger minimum.
4. Wheelbase will be 211 inches maximum.
5. Turning radius at curb not to exceed 31 feet.
6. Minimum body length to be 37 feet.

CHASSIS REQUIREMENTS

1. AIR CLEANER (Combustion)

Must be dry type with an appropriate restriction indicator monitoring air flow from the cleaner to the engine intake is required.

2. AIR INTAKE (Combustion)

The combustion air source for the engine must be located at front above coach floor level and protected from direct road spray for cleanest possible air.

3. ALTERNATOR

Must be 240 Amp Leece Neville, High-Output. **NO EXCEPTIONS.**

4. AXLES / SUSPENSION

Front

Must be Hendrickson steer axle w/fabricated box beam assembly, 14,600 lbs. capacity, Rated at 14,600 Lbs. Oil lubed wheel bearings. Hubcaps with window seal included. Must have 40-degree wheel turn angle – **NO EXCEPTIONS.**

Rear

Must be Meritor, 21,000 lbs. capacity single speed with 5.29 to 1 ratio. Synthetic oil lubed wheel bearings.

SHOCK ABSORBERS

Front and Rear

Heavy duty dual acting shocks (1 per side)

SPRINGS

Front

Must be 4" x 60", two-leaf parabolic taper springs. Maintenance free rubber bushings each end of spring & at shackle bracket. Softek, 14,600# at ground. One-inch spacer block between the front spring and the axle.

Rear

Must be 3"wide, 2-stage, variable rate, flat leaf springs (2), with total rated capacity of 21,000 lbs at the ground. Maintenance free, rubber bushed radius leaf to permit axle adjustment for dog tracking.

5. BATTERIES

Three group 31,12V batteries, 2100 CCA (combined). 2/0 gauge battery cables are included.

6. BRAKING SYSTEM

Service

Both front and rear systems must have 15" diameter x 1.438" thick rotor "Meritor Quadraulic" hydraulic disc, ABS anti-lock brakes. Dual 70MM diameter, 4 pistons per caliper, self-adjusting design. Dustshields front and rear.

Emergency/Parking

Internal expanding, transmission mounted, 9" diameter x 3" wide. Foot operated control to the driver's LH side.

7. BUMPERS

a. Smooth front bumper must be one-piece 1/4" thick steel plate. Front bumper must include step holes for cleaning windshield.
b. Rear bumper to be 12" after forming and have 14" wraparound at corners with double "A" frame bracing for greater rear impact resistance. Rear bumper must be one piece 3/16" thick smooth steel plate which includes die formed 90 degree top and bottom flanges.
c. Front and rear bumpers must be die-formed, 12" high, after forming, with 90° flanges, top and bottom.

8. CONTROLS

a. Electronic fast idle
b. Key type starter
c. Column mounted headlight dimmer
d. Hazard switch on steering wheel
e. Self canceling turn signal with indicator lights
f. Rheostat dimmer for driver instrument illumination
g. Dash mounted transmission shifter
h. Backlit rocker switches for all accessories must be mounted for easy access at driver's left below window.

9. COOLING SYSTEM

a. Charge air and down-flow radiator mounted in tandem at vehicle front.
b. A 25" dia. nylon cooling fan with nine blades equipped with a "Fully-On" or "Fully-Off" electromagnetic fan clutch driven by polyvee fan belt with spring loaded tensioner; fan controlled by Engine ECM.
c. Black rubber coolant hose with constant torque clamps to hold seals in place.
d. Transmission fluid cooled by 2100 BTU/Min. heat exchanger mounted external to radiator
e. Cummins Fleetguard Fleetcool EX Ethylene Gylcol 50/50 premix.

10. DRIVE LINE

Must be SPL 70 Series with protective guard around shaft with lubed for life components.

11. ENGINE

Cummins ISB-13 series 220 HP; 520 Ft. Lbs. Must include a 750W, minimum, internal engine block heater. Must include 15-gallon DEF tank mounted on the RH side between the wheels.

12. EXHAUST

4" O.D. 2-Ply stainless steel with catalytic converter, bellow flex style piping from engine turbo-charge to in line muffler. Stainless steel muffler. 5" O.D. 16 gauge aluminized steel tailpipe, exits ahead of rear axle, road side. Wide band exhaust clamps used at all joints.

13. FLOOR, DRIVER AREA

Must be raised 2", minimum, above floor, with .62" plywood with .19" ribbed rubber floor cover.

14. FRAME

Main Frame - Dual "C" channels, 9.63" high with 3" flanges made of .25 thick, 50,000 PSI steel, section Modulus = 10.1 in. cu.

Sub-Frame - Dual "C" channels, 9" high with 2 3/8" flanges made of .25 thick, 50,000 PSI steel, Section Modulus = 8.4 in. cu.

All permanent fixtures on frame are to be attached with hi-tensile strength "Huck-Spin" fasteners with swaged lock nuts. – **NO EXCEPTIONS**

Tapered rails are **not** acceptable – **any deviation from this specification will result in the rejection of your bid.**

15. FUEL SYSTEM

Must be 100 gallon capacity, minimum, aluminized steel, safety tank mounted between frame rails. Includes a sender inspection plate and right hand fill opening with spring loaded, locking door.

Primary fuel filter/water separator must be Racor 490R30, rated @ 90 GPH, 30 Micron filter.

Fuel pump must be mounted on engine.

16. HORN

Electrical dual with non-glare horn button emblem.

17. INSTRUMENTS

a. Electronic speedometer/odometer with seven digits, with trip odometer
b. Fuel level gauge
c. Voltmeter
d. Oil Pressure gauge
e. Low coolant warning light
f. Tachometer with built in hour meter
g. Dash mounted digital clock
h. Coolant temperature gauge
i. Cruise Control
j. High temp./low oil pressure engine warning buzzer.
k. Ammeter

18. STEERING

Must be TRW THP-60 with gear driven hydraulic pump.

Tilt telescoping steering column with 18" diameter, two-spoke, padded steering wheel.

19. TIRES

Michelin tubeless radial tires 275/80R – 22.5 highway tread front and mud/snow rear.

20. TOW HOOKS

Two front and two rear, tow hooks must be frame mounted.

21. TRANSMISSION

Allison PTS 2500 Series transmission, 5 Forward speeds, and 1 reverse. Transmission fluid must be synthetic. Transmission must be programmed for "performance"

22. WHEELS

Hub-piloted steel 10 stud disc wheels, single front, dual rear, 22.5 x 8.25 rims.

BODY REQUIREMENTS

1. ACCESS PANELS

Interior

Hinged access door on engine hood for access for routine daily engine inspection & service.

Exterior

Electrical Terminal: 27" x 16" hinged door located exterior below driver's windows for access to body electrical junction, terminals and circuit breakers. Door must have retainer to hold in open position. Front Grill: Hinged downward for service access to fill and sight glass

Right Front: 19" x 15 1/2" hinged door to permit access to heater air intake screen, air restriction indicator, windshield washer reservoir and wiper motor.

Left Front: 19" x 15 1/2" hinged door to permit access to power steering reservoir and wiper motor. All access panels must include keyed, locked latches.

2. AIR INTAKE

Heater intake must be on right front below the windshield level is electrically controlled. Driver fresh air must be located on the left side by the driver's feet.

3. COMPARTMENTS

Battery

Enclosed sliding tray 231/2" x 15 1/2" with locking hinged door.

Glove Box

An 11" x 6 1/2" door above windshield on right side with door and latch must be provided for driver storage.

4. CONSTRUCTION

a. ALL RIVETED BODY CONSTRUCTION. THIS UNIT MUST MEET 2003 FMVSS JOINT STRENGTH REQUIREMENTS.

b. Rubber isolators to be located between body and chassis in front cowl area and rear body tie-down area – **any deviation from this specification will result in the rejection of your bid.**

c. Body sheet metal must be fastened with buck rivets on exterior and pull rivets on interior side and ceiling panels. Roof sheets must also be riveted to each and every roof bow. Roof sheets riveted only where seamed are not acceptable to our district. SHEET METAL SCREWS NOT ACCEPTABLE – **any deviation from this specification will result in the rejection of your bid.**

d. Roof sheets must lay vertical (window top to window top) and be one-piece, double lapped and secured with two rows of rivets for maximum strength. Formed rain visors, embossed in roof panels are REQUIRED by the district – **any deviation from this specification will result in the rejection of your bid.**

e. One-piece, 14 gauge hat-shaped roof bows, without welds, from floor overhead to floor on other side must be used. Bows must not extend past floor on either side of bus – **any deviation from this specification will result in rejection of your bid.**
f. A minimum of (4) protective 16-gauge steel rub rails, including snow rail on bottom must be used. These rails must be RIVETED to structural bows and side panels with buck rivets. **Sheet metal screws NOT acceptable**.
g. Zinc coated body panels (roof, inner sides, headlining)
h. All body parts must be thoroughly rust-proofed after fabrication and before assembly.
i. Body must be fully undercoated before mounting to the chassis
j. Outside side panels must be constructed of 20 gauge fluted steel. Side panels must extend from below the side windows to a distance of 19 3/4" below the floor.
k. A removable 18-gauge steel front upper inner panel must be installed to allow access to the front roof cap area. A removable 20-gauge steel rear upper inner panel must be installed to allow access to the rear roof cap area. Removable composite wire moldings, right and left must be installed to allow access to body wiring harnesses. Textured aluminized fully hemmed steel inside side panels.
l. A steel kick panel must also be installed in driver's area side walls.

5. DEFROSTER

Sufficient defroster warm air outlets/snorkels must be provided to keep windshield and driver's window, free of fog, snow, and ice.

6. DOORS

Emergency

Rear center emergency door with 37.7" wide x 52.5" high opening. Latching mechanism includes a single-point bar lock. Door includes upper and lower tempered green tinted safety glass.

A 5" fire-block upholstered header pad is to be included along with a telescopic prop support attached to the top inside of the emergency door to hold it open at approx. 95°.

A Slide-bolt security latch with an audible alarm must also be included to warn the driver if the lock is activated after the engine is running.

Entrance

Entrance door must be ball bearing suspended, outward opening, two-panel door and seal against outside edge of lower step when door is shut. Door must be electronically controlled. Door must be laminated green tinted glass and include a manual lock, locking mechanism built into the forward outward opening door assembly. Vandal lock must be included. A 4" fire-block upholstered header pad over the interior of the entrance door along with a stainless steel assist rail at the rear of the stepwell.

7. ELECTRICAL

Power Socket Accessory with Cap must be provided. This socket must provide 12-volt power for connecting electrical accessories such as cellular phones, CB radios, etc.

8. FENDERS

Front and Rear fenders, black rubber

9. FLOOR

a. 3/16" thick ribbed **tan** rubber in aisles and at entrance aisle area. Aluminum aisle trim over joint in floor covering, full length of body
b. 1/8" Smooth **tan** rubber. Cove molding at wall is to be galvanized steel.
c. Front and rear molded black smooth rubber wheelhousing. Galvanized steel wheelhouse trim.

d. 5/8" treated plywood sub floor, attached with screws.

10. HEADROOM

Full 77", over floor covering and 5/8" plywood sub floor, measured at center aisle.

11. HEATER/DEFROSTER

a. 90K BTU front system with continuous defroster duct under windshield and driver window.
b. 6" fan mounted to wire molding, located in the upper left, above driver's window.
   6" fan mounted to windshield header, center of body.
c. 12K BTU driver heater at left under driver seat, single speed fan
d. 80K BTU, underseat, mid-ship minimum. Dual fans with separate 2-speed motors (must have washable filters)
e. 80K BTU, rear underseat minimum. Dual fans with separate 2-speed motors (must have washable filters)
f. Heater water booster pump must also be installed
g. Dual ball type heater cut-off valves must be provided to isolate heater system from engine / radiator.
h. Manual ball type water flow control valve on heater next to driver must be provided, for temperature control.
i. Goodyear Hi-Miler heater hose with constant torque clamps at all joints. Includes all heater hoses and hose clamps within the body heater system.
j. Electrically controlled water regulating valve.

12. INSULATION

The roof front and rear (including corners & roof bows) are to be insulated with 1 1/2" thick fiberglass providing an "R" Value of 5.75. Fiberglass insulation in sidewalls will result in rejection of your bid.

Sound deadening and vibration reducing material must be sprayed on unexposed surface of interior and exterior roof panels.

Perforated acoustic headlining panels spanning the entire length of the bus.
Polyester insulation in the roof, fiberglass in the bow cavities.

13. LETTERING

a. School district side lettering as furnished by our district (5 inches).
   HAYSVILLE UNIFIED SCHOOL DISTRICT 261
b. Bus number to be applied as furnished by our district. _____
   Locations: Both sides, LH rear and front of bus

14. LIGHTS

a. Warning System - **LED** 8 light non-sequential system with dual hoods. – **No deviation from hooded.**
b. Headlights – single high/low beam headlight.
c. Daytime Running - Head lamps, tail, license plate, clearance & marker lights
d. **LED** dome - Two rows equally spaced at center over aisle, two switches, left and right with a separate switch for the rearmost 2 lights. Driver's dome light to be activated with separate switch.
e. **LED** Stop and Tail - Two combination lights, 4" right and left rear license panel in combination with 7" stop and tail lights with clear red lens activated when engine is running.

f. **LED** Directional - two 7" front amber and two 7" amber mounted on rear. Side Directional – Amber sealed shock mounted, side directional mounted at front belt line area.
g. **LED** Back-Up - two 4" clear right and left rear.
h. **LED** stepwell light to operate with ID lights when entrance door is open.
i. **LED** exterior landing light by entrance door.
j. **LED** Clearance - two amber front and two red rear single, with shields.
k. **LED** Side Marker - Amber right and left intermediate side marker lights with shields.
l. **LED** Cluster - three amber front and three red rear with shields.
m. White flashing roof strobe mounted approx. 4' from rear. (required)
n. 100 amp solenoid to control body electrical circuits.

15. MIRRORS

Exterior

All exterior mirrors are to be remote control and heated. Heat to be controlled by an on/off switch.

Crossview

Rosco "Eye-Max LP" Crossview mirror system to allow a seated driver to view pedestrians while the bus is stopped. The Crossview mirror is must be asymmetric shaped, LH & RH sides with tunnel/tube mount. Mirror arms must be painted black steel – **any deviation from this specification will result in the rejection of your bid.**

Rearview

The Rosco Open View, Split System. The RH rearview mirrors are located so as to be visible through the wiped area of the windshield. The LH rearview mirrors are located so as to be visible through the driver's window. The Split System is comprised of two (2) independent mirror assemblies with one (1) flat mirror glass assembly a minimum of 7 3/8" x 10" and one (1) convex mirror glass assembly a minimum of 7 3/8" x 5"– **any deviations from these specifications will result in the rejection of your bid.**

Interior

10" x 30" with clear safety glass with padded edges.

16. MUD FLAPS

Required front and rear mud flaps

17. PAINT

Exterior

National school bus yellow with black trim and black bumpers. OEM, heat cured, polyurethane. Roof to be painted white.

Interior

Astro White, hot sprayed-on baked enamel, except aluminized inner side panels.

18. RADIO

AM/FM/PA/CD with 8 deluxe speaker system.

19. REFLECTORS

a. Two 3" red mounted on side of body near rear installed with screws.
b. Two 3" red, mounted on rear of body installed with screws.
c. Two 3" amber right and left intermediate side reflectors installed with screws.
d. Two 3" amber mounted on side of body near front installed with screws.

20. REFLECTIVE TAPE

a. 3M Diamond Grade tape one-inch minimum width strip must surround each emergency exit, 1 3/4" wide rear structure, and 2" wide strip on each side of unit at approximately floor level.
b. 3M Diamond Grade tape front and rear roof cap, with black 8" "SCHOOL BUS" lettering.

21. SAFETY EQUIPMENT

a. Fire extinguisher – 5lb. Dry with hose
b. 24 unit standard first aid kit
c. Triangular warning devices – floor mounted
d. Body fluid clean up kit
e. Reverse activated back up alarm
f. Locking toolbox with lid
g. Roof vent/hatches, two (2), must be installed in body roof, with buzzer to driver's area. Transpec "Triple Value".

22. SEATS

a. Driver's

National NS 2000 air-ride driver's seat with dedicated compressor. This seat has 7.5" height adjustment, 7" fore and aft seat slides, recline angle infinitely adjustable, two position front cushion, mechanical lumbar adjustment.

b. Upholstery

All Passenger seats and barriers must have burgundy fire-block upholstery.

c. Passenger seats

First seat on the RH and LH side must be a C.E. White Child Restraint seat. All remaining passenger seats frames must be seatbelt ready and deluxe, fully padded safety back school bus seats, Department of Education approved. Protective barriers must also be installed forward of the front seats. All seats/barriers to be installed with bolts – **No deviation from bolted seats.**

23. STEPWELL

Stainless steel step treads with white abrasive stripe inserted and bonded into a recessed area. 3" white rubber wear plate is located at the floor level step of the entrance door. Stepwell design must be designed to National standards 1990.

24. STOP ARM

Specialty Solid State electric operated high intensity reflective octagonal stop arm, red with 6" high lettering on both sides. Includes red LED STROBE lights over and under the word "STOP" on both sides.

25. SUN VISOR

Transparent dark green tint 6.5" x 30" smooth edge plastic, located in front of driver.

26. SWITCH PANEL

Mounted on left of driver with rocker-type, illuminated switches for electrical equipment. Brightness of illumination must be controlled by an additional rheostat switch.

27. VENTILATION

Static non-closing type in front roof.

28. WINDOWS

Driver's

Double sliding aluminum sash with security fastener for locking both sashes, tempered, tinted safety glass.

Side

12" split sash, tempered-tinted glass in aluminum frame, provides 12" opening when lowered. Push out windows each side, 2RH/2LH, with buzzer to driver's area.

Rear Vision

Tempered - tinted.

29. WINDSHIELD

Two-piece curved tinted and shaded safety plate glass. Grip handles mounted on both sides, right and left cowls, to facilitate cleaning of the windshield.

30. WINDSHIELD/WIPERS

Electric, intermittent single switch, wet arm wipers. Bottom mounted with non-glare arms and blades. Electric windshield washer with hard plastic 6-quart capacity reservoir located behind RH access door, washer outlets mounted on wiper arms.

31. WIRING

Colored and continuously number coded in composite molding on top of side windows for access to harness without removing window. Body wiring protected by automatic resetting circuit breakers.

32. LUGGAGE

Luggage compartments built into body sidewalls with locking doors, minimum capacity to be 61.4 cu. ft.

33. TRAINING

Successful bidder must provide mechanical training/service school pertaining to the bus being Quoted within 30 miles of the district. Service school must be offered biannually at a minimum, and consist of approximately 14 hours of classroom instruction.

34. WARRANTY

Base warranty for the unit being bid must be for 3 years/unlimited mileage, and cover all body/chassis components, workmanship, and materials.

35. AUXILARY HEATER

Install Espar E-Guardian D-12 45,000 BTU auxiliary heater.

PLEASE NOTE: These specifications represent the minimum specifications acceptable to the district. Any deviation here to must be specifically identified and described on an attached sheet. Failure to do so will result in the rejection of your bid and/or your product for reason of non-compliance with our invitation.

IMPORTANT: Bidder must include with his bid a list of fifteen (15) Kansas School districts that have taken delivery of the same model of bus as bidder is now offering to the distict. SAME MODEL is defined as bus whose chassis manufacturer and body manufacturer have remained constant and

unchanged during the delivery period of the fifteen (15) units listed by the bidder. FAILURE TO PROVIDE THIS LIST WILL RESULT IN THE REJECTION OF YOUR BID!!

CHASSIS SPECIFICATIONS

Body Application:	2018 Blue Bird Microbird G-5
Passenger capacity:	21
Chassis:	2018 Chevy 12,300lb. GVWR Dual Rear Wheel
Engine:	6.0L Vortec gas engine Block heater Air Filter-oil paper element type. Oil Filter-1 qt. full flow, disposable type
Transmission:	Automatic, with overdrive
Electrical:	Alternator, 220 AMP minimum Battery Delco Freedom 600 CCA, dual
Front/Rear Axle:	Dual rear wheel 8600 lb. rear axle - 3.73 ratio 4300 lb. front axle Heavy duty-front & rear shock absorbers
Front/Rear Springs:	Leaf springs – rear Independent coil springs-front
Chassis Frame:	139" W.B. Stabilizer bar Drive shaft guards Front bumper
Fuel tank:	33 gallon fuel tank, mounted between frame rails Fuel tank guard-frame mounted, steel, bolted/welded construction
Brakes:	Four wheel disc brakes Four wheel anti lock brakes. Parking Brakes
Tires and Wheels:	Front Tires LT-225/75R 16E-Radials-All Season Dual Rear Tires LT-225/75R 16E-Radials-All Season
Miscellaneous:	Horn - single electric, high & low note. Windshield Wipers - intermittent, coordinated washer. Drivers retractable lap & shoulder belt High back driver¹s seat-adjustable style, door arm rest Undercoating-front wheelhousing Tinted Windshield & driver¹s window Heavy Duty Radiator-extra cooling Volt.-Temp.-Oil Gauges Power Tilt steering wheel and cruise control Factory dash air-conditioning

BODY SPECIFICATIONS

BODY TYPE: 2018 Blue Bird Microbird G-5
PASSENGER SIZE: 21

AISLE
Emergency exit door, entrance door and special service entrance doors must be a 15" aisle.

BATTERY COMPARTMENT
Battery(ies) must be located on the right side immediately behind the main entrance door and mounted on a galvanized steel tray with slide out bearings. Compartment must be weather-sealed with an EPDM rubber and equipped with a drip rail and mounted on stainless steel piano hinge.

BUMPERS
- **Rear Bumper**
  School bus bumper must be a 3/16" pressed steel channel, 10" high, flanged 2" at top and bottom, with a 12" wrap around. The bumper must extend 1" beyond the rearmost part of the body surface to prevent hitching to or riding thereon.

COLORS
- **Exterior**
  The school bus body must be painted National School Bus Yellow with Sikkens low VOC high gloss acrylic Urethane paint. Between window panels and lower window sills shall be black. Roof to be painted white.

- **Interior**
  The interior must be painted white.

CONSTRUCTION
Main structure must be assembled with locked bolts, huck-fasteners, and structural rivets. Only front and rear structures may be assembled with welds.

- **Body Structure**
  Roof bows must be one-piece, floor-to-floor, hat section type and be made of 16-gauge G90 galvanized steel. Two (2) black, 18-gauge structural beams extending the full length of the body.

- **Exterior Panels**

  Exterior Rear and Front Panels

  Rear panel must be one-piece and made of fiberglass reinforced composite, with waterproof recesses for lights. The front panel must be two-pieces made with fiberglass reinforced composite, waterproof recesses for lights.

  Exterior Side Panels

  Exterior side panels to be made of 0.040" pre-primed aluminum for corrosion protection and paint adhesion.

  Roof Panel

  The roof panel must be made of one-piece 0.040" aluminum to prevent water infiltration through roof seams. Panels located immediately above side windows shall incorporate a drip rail running the full length of the body.

- **Exterior Rear Wheel Trims**

  1/8" Thermoplastic wheel trim must be applied over the rear wheels.

- **Floor structure**

  Aluminum

  Longitudinal "C" shaped sub frames must be mounted to the OEM chassis frame rails using a double action energy-absorbing soft mount system. The sub frame must be made of 10-gauge G90 galvanized steel. Transversal "C" sections of floor must be made of 0.060" aluminum linked with "L" shaped cross-members and fastened to the sub frame. All passenger seats shall be fastened to 16-gauge G90 galvanized steel reinforcement channel.

- **Front and Rear End Structures**

  The front and rear end structures must be made of aluminized steel square tubing for corrosion protection. Front and rear structures must be mechanically affixed to sub-floor and roof bows.

- **Gravel Shields**

  Thermoplastic gravel shields must be installed on the lower front section of each body side. Shields shall be 12" in height and flanged 3 ¾" underneath the body.

- **Side Impact Barrier**

  Reinforced side impact barriers made of G90 galvanized steel must be incorporated into body design and riveted to the sub-floor. An L-shaped reinforcement must be integrated into the seat rail and run the full-length of the body.

ELECTRICAL SYSTEM

- **Electrical Compartment**
  Electrical compartment must be located under the right portion of the chassis dashboard as not to obstruct driver visibility through the More-View window.
  The compartment shall enclose the body electrical control panel, the air conditioning control panel, the school bus alternately flashing signal lamps module, the 75-amp continuous-duty relay.

- **Body Instrument Panel**
  The body instrument panel must be located at the right of the driver and integrated to the OEM-supplied engine console cover so as to not impede or obscure the driver's visibility of the loading zone and/or the More-View window.
  A cup holder shall be provided on the body instrument panel.

- **Body Wiring Harness**
  Main body harness(es) must be color and number coded. Harness(es) must be protected with loom under the body and in the engine compartment. Grommets must be installed to protect every wire passing through metal openings. Wiring harness(es) must be located within the passenger compartment, for easy access.

- **Wiring Diagram**
  A complete body-wiring diagram must be provided.

EMERGENCY EXIT

The emergency door shall be equipped with a header pad and a 3-point fastening device and door hinge shall be stainless steel piano type, shall extend the full height of the door and provide an unobstructed opening of 53" H by 33" W. The emergency door must be weather-sealed with a bulb-type seal trim made of EPDM rubber.
An upper and lower glass must be incorporated into the rear emergency door. Upper glass surface shall be 671 square inches and lower glass surface shall be 408 square inches. Both windows shall be tempered safety glass with 62% light transmittance. Glass shall be bonded to prevent water infiltration.

ENTRANCE DOOR

The entrance door must be **electrically operated**. The entrance door must be equipped with a positive locking mechanism to avoid strain of the electrical motor when the door is closed. Electrical motor assembly must have passed a ten (10) year, 200,000-cycle test.
The entrance door shall have a minimum horizontal opening of 32", and a minimum vertical opening of 74 ½". 2 full-length clear glass panels must be installed with a minimum unobstructed area of 1,730 square inches. Glass shall be bonded to prevent water infiltration. When door is closed it must not create a blind spot larger than 5 ½" wide.
The upper bearings of the door mechanism shall be maintenance-free type. The lower bearings shall be lifetime maintenance-free Iglide® bushings with stainless steel pins to prevent corrosion.

FLOOR COVERING
5/8" plywood under a 1/8" grey smooth rubber material. The floor covering in the aisle must grey ribbed rubber covering.

HANDRAILS
The handrail must be made of 1.25" black powder coated steel and mounted on the interior left side of entrance door step well.

HEATER
Front heater and windshield defroster shall be as supplied by the OEM chassis manufacturer. Rear heater must be floor mounted and rated at 42,000 BTU, minimum.

INSIDE HEIGHT
Inside body height must be 76", measured at the center aisle over the floor covering, at any point on longitudinal centerline from front vertical bow to rear vertical bow.

INSIDE WIDTH
Inside body width must be 93", measured at the seat cushion and floor level.

INSULATION
Body must be insulated with 1½" thick fiberglass in the headlining, side, front and rear walls of the school bus. All roof bows shall also be insulated with 1½" thick fiberglass.

INTERIOR
- **Interior Panels**
  All interior and ceiling panels must be constructed of 0.025" and 0.040" pre-painted aluminum. ABS trim panels installed over all doors. Full length, easily removable PVC service panels located above side passenger windows and must enclose the electrical harnesses to facilitate maintenance.
  Ceiling panels must be inserted into longitudinal mounting tracks. **NO EXCEPTIONS**
  Below the windows, panels must be made of 0.025" embossed aluminum and hemmed on all sides.

LAMPS AND SIGNALS
- Two (2) 4" **LED** white rear backup lamps
- Two (2) 4" **LED** red stop/tail lamps.
- Two (2) 7" **LED** red stop/tail lamps must be mounted on the rear.
- Four **LED** (4) dome lamps must be mounted in the interior roof panels over the seats.
- Interior **LED** stepwell light must operate when the entrance door is open.
- Three (3) **LED** identification lamps shall be installed in the rear cap and three (3) **LED** amber identification lamps shall be installed in the front cap.
- Bus must be equipped with **LED,** non-sequential 8-way warning lights, two (2) red and two (2) amber lamps at the front and rear of the vehicle.

- **LED** side marker/clearance lamps.
- Specialty solid state electric operated high intensity reflective octagonal stoparm, red with a white boarder and 6" high lettering "STOP" on both sides. Includes red LED STROBE lights over and under the word "STOP" visible from both sides.

LETTERING
HAYSVILLE USD 261 is to be applied on both sides of the body and bus number is to be applied in an appropriate spot near the doors on both sides, front and rear of bus.

MIRRORS
- **Interior Mirrors**
  A 6" x 16" mirror, with padded edges, must be installed.

- **Exterior Mirrors**
  Self-defrosting Rosco side view and cross view mirrors.

RADIO
AM/FM/CD Stereo, with digital clock, including four speakers 2-front and 2-rear.

REFLECTIVE MARKING
3M Scotchlite Diamond Grade reflective tape package including body sides tape, rear outline tape, and "SCHOOL BUS" front and rear.

SEATS AND BARRIERS
First row of passenger seats must be HSM Child Restraint seats with 3-point seatbelts. Remaining seats must be as follows: 3-39" HSM seats with 3-point seatbelts on the LH side and 3-34" HSM seats with 3-point seatbelts, Department of Transportation approved. Burgundy fire-block upholstery.

UNDERCOATING
The entire underside of the body, including but not limited to floor, skirts, wheel housings, sub-floor structure, rear bumper mounting brackets and braces, must be coated with rust-proofing material that meets the requirements for salt spray resistance (5% salt and 1000h), abrasion resistance and fire resistance.

VENTILATION
A non-closing type static vent must be in forward section of roof panel over driver area.

WATER INFILTRATION TEST
A positive pressure water infiltration test must be performed by manufacturer before delivery to ensure proper water seal of joints, fasteners, and gaskets found on vehicle.

WHEEL HOUSINGS
Wheel housings must be made of G90 galvanized steel and sealed with polyurethane sealant. Stainless steel rivets must be used to attach wheel housings to the floor structure and floor sheets.

WINDOWS

- **More-View Window**
  All school buses must be equipped with a More-View window located between the A-pillar of the chassis and the entrance door.

- **Rear Windows**
  The glass shall be made of tinted- tempered AS3 glazing with a 62% light transmittance. Glass shall be bonded to prevent water infiltration.

- **Side Windows**
  Side windows shall be 12" split-sash type and made with black aluminum frames. The glass shall be made of tinted-tempered AS3 glazing with a 62% light transmittance. **Exterior horizontal ledge must be angled to evacuate water towards the exterior of the vehicle. Neoprene gaskets and sealant must be used to ensure proper water seal.**

MISCELLANEOUS

- Fire Extinguisher, 5 lb. dry with hose.
- 24 unit first aid kit.
- Triangular warning devices kit
- Body fluid cleanup kit
- Tow hooks, rear (2).
- Mudflaps, black rubber, front and rear.
- Windshield defroster fan.
- Vandal lock for rear emergency door and front entry door.
- Complete pre-delivery servicing and inspection.
- 112 DB reverse activated back up alarm.
- Transpec "Triple Value" roof hatch

AIR CONDITIONING

In wall bulkhead mount Carrier air-conditioning model AC6iw22MAX, 58,000 BTU minimum output.

PLEASE NOTE: These are basic minimum specifications required by District. Any deviations from these specifications must be listed by bidder on a separate sheet and must accompany bid. Failure to do so will result in rejection of your bid and/or your product for reason of non-compliance with our invitation.