Byron Community Unit School District #226
Mr. Buster Barton - Superintendent
696 North Colfax Street, Byron, IL 61010
Phone: (815) 234-5491 Fax: (815) 234-4106

Re: Purchase of 26 School Buses – Byron C.U.S.D. #226

Instruction to Bidders:

Byron Community Unit School District #226 anticipates purchasing the following buses for the 2027-2028 School Year:

- 13 - Type C - Conventional School Bus - 74 Passenger
- 4 - Type C - Conventional Style School Bus - 74 Passenger w/Underbody Luggage
- 2 - Type C - Conventional Style School Bus - 60 Passenger Adaptable with Lift
- 3 - Type A – Cutaway Fully Seated School Bus - 29 Passenger
- 2 – Type A – Cutaway Adaptable School Bus – 21 Passenger Adaptable Wheelchair Bus
- 2 - Type A – Cutaway Multi-Function Activity School Bus - 14 Passenger

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1. Twenty-six (26) buses under the program referred to as a one (1) year "bus buy back". Bid Specifications for this bid are attached. Wherever a particular specification is listed, it is for establishing a standard of quality and the term "or equal" or "or equivalent" shall be understood. Any bidder wishing to bid "or equal" or "or equivalent" to the specifications may do so.

2. The minimum "bus buy back" percentage is **82%** (June, 2028)

3. Bids will be received until **10:00 AM, Friday, November 13, 2026** and publicly opened and read at that time. No fax bids will be accepted.

4. All bids are to be sealed and clearly marked as follows: "School Bus Bid", Mr. Buster Barton, Superintendent, Byron Community Unit School District #226, 696 North Colfax Street, Byron, IL 61010.

5. **Bid Award**: It is expected that Byron CUSD #226 Board of Education will take action to award the bus purchase at the **Wednesday, November 18, 2026**, Board meeting. Should further study of the bids be necessary, a contract will be awarded as soon as practical. The Board of Education reserves the right to reject any or all bids or parts thereof, or irregularities or informalities that do not compromise the integrity of the sealed bid process.

6. **Bid price:** Bid price must include all expenses incurred to deliver buses to Byron Community Unit School District #226 in condition to operate and in compliance with the attached bid specifications. This includes transportation charges, inspection fees, title, license, state and school required lettering and any other normal expenses incurred in the preparation of the bus for use. Do not include Federal and State Sales Tax as the school district is tax exempt.

7. **Delivery Date:** All buses will be delivered during the month of July 2027 on a schedule developed in consultation with the Director of Transportation. District shall retain specific buses for summer use until new buses are received.

8. **Service and Warranty Work:** Bidder shall provide Byron Community Unit School District #226 with a manufacturer's warranty which shall indicate that the buses can be serviced at any authorized dealer of the manufacturer. Such warranty shall be for the manufacturer for both the chassis and the body of the buses. Included with the bid submission shall be a statement by the bidder as to the nearest factory authorized full-service facility for both chassis and body service and warranty repairs. In the event, that a school bus is removed from service for a duration of at least forty-eight (48) hours, the bidder will supply an alternative school bus which complies with all federal and Illinois state regulations comparable with the current fleet specifications and with no air brakes.

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9. Bid will include complete chassis and body in the unit price. Bids on chassis or body alone will not be accepted.

10. The basic bid is for unit cash price for each new passenger bus. In the event Byron Community Unit School District #226 requires additional buses, the bidder guarantees that the cost per bus will remain the same until **December 31, 2026**. Additional buses will be equipped the same as the original bus.

11. Contractor's Certification must be included.

12. Any deviation from the items marked "NO EXCEPTIONS" will immediately disqualify the bid submittal.

13. Contact person regarding bus bids is: Mr. Buster Barton, Superintendent at (815) 234-5491.

14. The bid package received by each bidder shall include:

    a. One copy of the School Bus Specifications as adopted by the Board of Education, Byron Community Unit School District #226 for each of the following:

        - 13 - Type C - Conventional School Bus - 74 Passenger
        - 4 - Type C - Conventional Style School Bus - 74 Passenger w/underbody luggage
        - 2 - Type C - Conventional Style School Bus – 60 Passenger Adaptable with Lift
        - 3 - Type A - Cutaway Fully Seated School Bus - 29 Passenger
        - 2 - Type A - Cutaway School Bus – 21 Passenger Adaptable Wheelchair Bus
        - 2 - Type A - Cutaway Multi-Function Activity School Bus - 14 Passenger

    b. One copy of the bid form for each vehicle listed.

    c. Contractor's Certification (page 13).

    d. Contractor's – Drug Free Workplace Certification (page 14).

    e. Contractor's Compliance for Written Sexual Harassment Policy (page 15).

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2027-2028 Bus Fleet

Bus Bid Timeline

October 15, 2026	Approval of authorization to seek bids
November 3, 2026	Bid specifications and bid documents e-mailed to vendors Bid specifications and bid documents posted to district website Ad sent to local newspaper for publication
November 13, 2026	10:00 AM bid opening for 2027-2028 bus fleet
November 18, 2026	Presentation to Finance Committee
November 18, 2026	Board of Education approved purchase of FY27-28 bus fleet
November 19, 2026	Order fleet

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LATE BIDS CANNOT BE ACCEPTED!

SEALED BID

OPENING DATE: **Friday, November 13, 2026**

OPENING TIME: **10:00 AM (CDST)**

DESCRIPTION: **FY2027/28 Bus Bid**

ATTN: **Superintendent**

DATED MATERIAL-DELIVER IMMEDIATELY

PLEASE CUT OUT AND AFFIX THIS BID LABEL TO THE OUTERMOST ENVELOPE OF YOUR BID TO HELP ENSURE PROPER DELIVERY!

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Appendix

Byron Community Unit School District #226
Mr. Buster Barton - Superintendent
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Bid Form

13 – Type C Conventional School Bus – 74 Passenger

Quantity	Unit Price	Extended Price
13		
Buy-Back Percentage June, 2028 (for one year term)	_____ % buy- back percentage	

Company Name: _____

Address: _____

City, State, Zip: _____

Phone Number: _____ Fax Number: _____

Email: _____

Name of Company Representative Submitting Proposal:

Print: _____

Signature: _____ Date: _____

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Bid Form

4 - Type C Conventional Style School Bus – 74 Passenger w/underbody luggage

Quantity	Unit Price	Extended Price
4		
Buy-Back Percentage June, 2028 (for one year term)	_____% buy- back percentage	

Company Name: _____

Address: _____

City, State, Zip: _____

Phone Number: _____ Fax Number: _____

Email: _____

Name of Company Representative Submitting Proposal:

Print: _____

Signature: _____ Date: _____

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Bid Form

2 - Type C Conventional Style School Bus – 60 Passenger Adaptable w/Lift

Quantity	Unit Price	Extended Price
2		
Buy-Back Percentage June, 2028 (for one year term)	_____% buy- back percentage	

Company Name: _____

Address: _____

City, State, Zip: _____

Phone Number: _____ Fax Number: _____

Email: _____

Name of Company Representative Submitting Proposal:

Print: _____

Signature: _____ Date: _____

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Bid Form

3 – Type A School Bus – 29 Passenger

Quantity	Unit Price	Extended Price
3		
Buy-Back Percentage June, 2028 (for one year term)	_____% buy- back percentage	

Company Name: _____

Address: _____

City, State, Zip: _____

Phone Number: _____ Fax Number: _____

Email: _____

Name of Company Representative Submitting Proposal:

Print: _____

Signature: _____ Date: _____

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Bid Form

2 – Type A School Bus – 21 Passenger Adaptable Wheelchair Bus

Quantity	Unit Price	Extended Price
2		
Buy-Back Percentage June, 2028 (for one year term)	_____% buy- back percentage	

Company Name: _____

Address: _____

City, State, Zip: _____

Phone Number: _____ Fax Number: _____

Email: _____

Name of Company Representative Submitting Proposal:

Print: _____

Signature: _____ Date: _____

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Bid Form

2 – Type A Multi-Function Activity School Bus – 14 Passenger

Quantity	Unit Price	Extended Price
2		
Buy-Back Percentage June, 2028 (for one year term)	_____% buy- back percentage	

Company Name: _____

Address: _____

City, State, Zip: _____

Phone Number: _____ Fax Number: _____

Email: _____

Name of Company Representative Submitting Proposal:

Print: _____

Signature: _____ Date: _____

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Contractor's Certification

In compliance with Section 33E-11 of the Criminal Code of 1961, the undersigned contractor hereby certifies that

_____, Contractor, is not barred from bidding on any contract offered for bid by any unit of State or local government as a result of a violation of either Section 33E-3 (bid-rigging) or Section 33E-4 (bid-rotating) of Article 33E of the Criminal Code of 1961.

This Certification is executed and submitted for the purpose of inducing the Board of Education of Byron Community Unit School District #226 to consider the sealed bid to which it is attached and/or enter into a contract with the undersigned Contractor.

Dated this _____day of _____, 2026

_____
Contractor

_____
Signature of Contractor

Byron Community Unit School District #226
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CONTRACTOR'S - DRUG-FREE WORKPLACE CERTIFICATION

NOTICE: This Contractor's Drug-Free Workplace Certification is to be completed by any corporation, partnerships or other entities with twenty-five (25) or more employees at the time of the contract, or a department, division or unit thereof, directly responsible for the performance of a contract of $5,000 or more with the Byron Community School District ##226. (REVISED 4/98)

Pursuant to Section 3 of the Drug-Free Workplace Act (30ILCS 580/3), the undersigned Contractor hereby certifies to the Board of Education of Byron Community Unity School District No. #226 that it will provide a drug-free workplace by:

A. PUBLISHING A STATEMENT:
   1. Notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance, including cannabis, is prohibited in the contractor's workplace;
   2. Specifying the actions that will be taken against employees for violations of such prohibition;
   3. Notifying the employee that, as a condition of employment on such contract, the employee will:
      1. Abide by the terms of the statement; and
      2. Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.

B. ESTABLISHING A DRUG-FREE AWARENESS PROGRAM TO INFORM EMPLOYEES ABOUT:
   1. The dangers of drug abuse in the workplace;
   2. The Contractor's policy of maintaining a drug-free workplace;
   3. Any available drug counseling, rehabilitation, and employee assistance programs; and
   4. The penalties that may be imposed upon employees for drug violations.

C. Making it a requirement to give a copy of the statement required by subsection "A" above to each employee engaged in the performance of the contract and to post the statement in a prominent place in the workplace.

D. Notifying the contracting or granting agency within (10) days after receiving notice under part (b) of paragraph (3) of subsection (A) from an employee or otherwise receiving actual notice of such conviction.

E. Imposing a sanction on, or requiring the satisfactory participation in drug abuse assistance or rehabilitation program by, an employee who is so convicted, as required by Section 5 of the Drug-Free Workplace Act (30ILCS 580/5).

F. Assisting employees in selecting a course of action in the event drug counseling, treatment, and rehabilitation is required and indicating that a trained referral team is in place.

G. Making a good faith effort to continue to maintain a drug-free workplace through implementation of Section 3 of the Drug-Free Workplace Act.

Failure to abide by the Contractor's Drug-Free Workplace Certification shall subject the Contractor to the penalties set forth in Sections 6, 7 and 8 of the Drug-Free Workplace Act (30ILCS 580/6-8).

Dated this _____ day of _____, 2026

_____ _____

Contractor Signature of Contractor

COMPLIANCE FOR WRITTEN SEXUAL HARRASSMENT POLICY

In compliance with the Illinois Human Rights Act (775ILCS 5/1-101 et seq.) the undersigned contractor hereby certifies that they have written sexual harassment policies that include, at a minimum, the following information:

1. The illegality of sexual harassment;
2. The definition of sexual harassment under state law;
3. A description of sexual harassment, utilizing examples;
4. The contractor's internal complaint process including penalties;
5. The legal recourse, investigative, and complaint process available through the Illinois Department of Human Rights and the Human Rights Commission;
6. Directions on how to contact the Department and Commission, and
7. Protection against retaliation as provided by Section 6-101 of the Human Rights Act.

The "Contractor" also certifies that a copy of the policies shall be provided to the Department of Human Rights, upon request.

Dated this _____day of _____, 2026

_____

Contractor

_____

Signature of Contractor

Byron Community Unit School District #226
Type-C School Bus Specifications
74 Passenger Conventional Bus

The school bus body (or bodies) furnished shall comply with all current state and Federal Motor Vehicle Safety Standards in effect at time of bid. Additionally, Byron C.U.S.D. is requiring the following supplementary specifications. Any exceptions to these specifications should be concisely noted in the space provided (such as number of passenger and/or specifications pertinent to the model of bus you are bidding.) Equivalency of any exceptions to the items requested will be solely at the discretion of Byron C.U.S.D.

Bidding Company Name: _____

Address: _____

_____

Contact: _____

E-Mail Address: _____ Website: _____

Make and Model of Bus Body & Chassis: _____

Passenger Capacity: _____ Kneeroom: **24" Required** Model Year: _____

Item	Body Specifications Minimum Specifications Required	Specifications Furnished. Fill in all spaces, Note & explain equivalents or exceptions.
1. Aisle	There shall be a minimum 12" wide aisle from the entrance door to all emergency doors. The aisle shall be trimmed with stainless steel aisle strips or no aisle strips are required if the aisle and floor seam are tight to prevent debris from entering underneath flooring	
2. Assist Rail	Back side of stepwell: There shall be a stainless steel assist rail at the entrance door, mounted near the midpoint of the stepwell and extending to near the top of the seat barrier. Front side of stepwell: There shall be an additional stainless steel assist rail at the entrance door. Both assist rails shall be securely attached.	
3. Back-up Alarm	The bus shall be equipped with an automatic back-up alarm installed behind the rear axle. This audible alarm shall be rated at 112dba.	DBA:
4. Bumper	Rear: Shall be formed from 3/16" plate steel and a minimum of 9" wide (high) with a .5369 square inch section modulus. Bumper shall wrap around corners of bus and be attached to the chassis frame. Bumper to be diagonally braced with minimum 4" steel tubing.	

5. Camera System	<u>Minimum Camera Head and Installation Specifications:</u> • Quantity (3) – 3.6MM High Definition Dome Camera with (Infrared LED) and Audio Housing: o Die-cast aluminum housing (powder coated), impact-resistant polycarbonate, anti-glare, scratch-resistant hard coating, UV protected surface mount and no extra bracket required. o 1080p progressive scan resolution o Low-profile, vandal-resistant housing o Infrared LEDs to see in low light o True Day/Night Operation o Back-light compensation improves image quality in high contrast conditions o High-fidelity audio o Warranty: 3-year parts and labor o Installation: (1) 3.6MM camera head shall be mounted on the front bulkhead aimed toward the rear of the vehicle, (1) 3.6MM camera head shall be mounted in the dash area aimed within the wiper sweep, recording the windshield view and (1) 3.6MM camera head shall be mounted in the area of the storage compartment above the driver seat aimed toward the stepwell of the vehicle. • Quantity (2) – 171 Degree Ultra-wide High Definition Camera with (Infrared LED) and Audio Housing: o Die-cast aluminum housing (powder coated), impact-resistant polycarbonate, anti-glare and scratch-resistant hard coating o 1080p progressive scan resolution o Infrared LEDs to see in low light o Ultra-Wide viewing angle o True Day/Night Operation o High-fidelity audio o Warranty: 3-year parts and labor o Installation: (1) 171degree camera head shall be mounted street side in row 5 aimed across and toward the curb side of the vehicle and (1) 171degree camera head shall be mounted street side in row 9 aimed across and toward the curb side of the vehicle. • Quantity (1) 16MM High Definition Outdoor Wedge Camera with (Infrared LED): o Solid aluminum housing (powder coated), impact-resistant polycarbonate, anti-glare and scratch-resistant hard coating o 720p/1080p high-definition resolution o Rugged IP67-rated weatherproof housing o True Day/Night Operation o Back-light compensation improves image quality in high contrast conditions o Rotation 360degree gimbal for flexible mounting options o Warranty: 3-year parts and labor o Installation: (1) 16MM camera head shall be mounted near the stop arm aimed toward the rear of the vehicle, recording vehicles passing the vehicle.	

5. Camera System (continued)	Minimum Digital Video Recorder (DVR) and Installation Specifications: • Quantity (1) DVR shall record up to (6) channels of high-definition (HD) video, up to (6) channels of audio o Recorded Resolution: 1920 x 1080 o Recording at 1080p with HD Cameras o Record Rate – Main: Up to 30 FPS, at 1080p 120FPS Max, Up to 5 FPS all channels o Must have 500 GB to 2 TB (HDD) removable media cartridge with hard drive storage capacity. o Standard computer hard drives or SD style memory cards are NOT acceptable o Must have dimensions no larger than 2.5 x 7 x 9.5 inch (64 x 188 x 241 mm) o Automatic repeat-record when memory device is full (user selectable on-off) o Integrated lock box with removeable locking door, rounded edges, and power painted finish. o Must include Event/Diagnostic Button to mark events for quick retrieval o Requires (5) user customizable full featured signal inputs o Passive GPS system included o Wi-Fi: Built-in 802.11 (AC, AN, BGN) with dual antenna ports o Warranty: 3-year parts and labor • Installation: o DVR: Shall be securely mounted in front bulkhead leaving easy access for hard drive retrieval. o Event/Diagnostic Button: Shall be installed for easy driver access and viewing. o Signal Inputs: Shall be connected and configured to the following vehicle inputs: Warning Lights, Stop Arm, Brake Lights, Left Turn Signal, and Right Turn Signal. o Passive GPS System: Shall be installed to ensure proper signal.	
6. Certificate Holder	Bus shall be equipped with a minimum 4" x 6" transparent certificate and registration holder mounted on the interior front header area of the bus.	
7. Color	Exterior: Shall be National School Bus Yellow. This paint shall be baked-on high solids polyurethane. Trim, including warning light visors (if provided), guard rails, and door handles shall be black. Roof: **Exterior roof panels shall be painted white.** Interior: Shall be light gray baked-on enamel. The area from the bottom of the side windows to the seat rail shall be a clear coated Galvalume steel. All seat frames, dash, heaters, and heater ducts shall have a baked-on black powder coating for scratch resistance. All metal panels on the bus to be painted shall be primed on both sides prior to assembly.	

8. Construction	The bus body shall be constructed to meet or exceed all state and federal school bus requirements in effect at the time of manufacture. *Roof Bows* – The roof bow frame assembly shall consist of continuous, one-piece, 14 gauge rolled channel hat sections, stretch formed and mounted on 30" centers to provide a roll bar type protection. Roof bows shall be 3 1/16" wide with a cross section modulus of .22[3]. *Roof Crash Rails* – two continuous, one-piece 16 gauges rolled channel roof crash rails extending from first to last roof bow shall be applied internally between interior and exterior sheets. *Floor* – Shall be constructed of 14 gauge Galvalume steel formed with overlapping joints on 30" centers. Floor will be further reinforced with 11 gauge Z-channel crossmembers installed on 10" centers and shall extend the full width of the floor except in wheelhouse area. All floor crossmembers shall be welded to 14 gauge steel floor panels, which extend the full length of the body floor on each side. An interior impact panel shall be one piece continuous welded to floor and welded at each intersection with body bow. There shall be an 11-gauge floor X-brace reinforcement added to wheelhouse area. Wheelhouse shall be stamped 16-gauge one-piece design. *Vertical Headers* – Shall be installed at each roof bow extending from upper side sheet to exterior structural header creating closed box type reinforcement at each roof bow.	
9. Defrosters	Defroster shall keep windshield clear of fog, snow, and ice. The defroster shall include full length windshield defroster channel for even distribution of heated air to the windshield. Two defroster fans mounted over windshield center.	
10. Dimensions	• Minimum exterior width 96" • Minimum interior width 90" • Minimum interior height 78"	
11. Doors	Service: The service door shall be **electric operated with a (2) position switch**, outward opening under control of driver and so designed as to prevent accidental openings. The service door shall be operated via a driver controlled switch. The door shall be located rear of the front wheels on the right side of the bus. Door shall seal against a stationary rubber and bottom step edge. No part of door to ride in the stepwell when closed. Vertical closing edges of the door shall be equipped with flexible material. The door panel shall be a bolted frame. Construction and made of anodized extruded aluminum. The door control mechanism shall be located to the left of the driver on the switch cabinet to prevent accidental opening by students. The control mechanism of the door shall be located above the door and concealed behind a hinged panel for ease of service. Door shall offer a minimum 30" clear opening. All doors shall be equipped with padding at the top edge of each door opening. The pad shall be at least 3" wide and 1" thick and extend the full width of the door opening. Battery Door: Battery compartment door shall be equipped with a keyed locking latch, key shall match fuel door lock and Diesel Exhaust Fluid door if those doors are keyed.	Type: Operation:

12. Electrical	**Shall be equipped with fully integrated multiplex electrical system for both body and chassis.** ECMs to be chassis frame mounted for ease of access. Body and chassis wiring to be number and color-coded with matched weatherproof connectors. Nine pin diagnostic to be port located under dash for both body and chassis system. All available circuits protected by a combination of solid-state technology and fuses. All internal wiring shall be routed down the inside of the bus, above the side windows, behind a completely removable cover. This cover shall be removable without loosening the side windows. A complete wiring diagram is to be furnished. All wiring that passes through metal shall be grommeted. Clips are required to support main body wiring harness. Wiring shall be flame retardant. **Switches shall be rocker type design and provide "smart switch" technology offering switches that can be repositioned without rewiring or reprogramming of system.** **Shall include (1) 12 Volt Power Outlet** **Shall include a Master Noise Kill Switch**	
13. Emergency Exits	All emergency exits shall conform to FMVSS 217. Emergency Door: There shall be an emergency door located in the center rear of the bus. Door shall be constructed using self-piercing rivet technology to prevent any leak path and shall have a minimum of 38" horizontal opening and a 61" vertical opening. Door to be equipped with an audible buzzer which will sound when latch is moved toward open position. Door to have upper and lower glass. Piano type hinge is not acceptable. Door shall be equipped with locking device and wired to interrupt starting when in locked position. There shall be a device installed on the top of the emergency door that will automatically hold the door in the open position during emergencies and evacuation drills. Side Emergency Doors Are Not Acceptable. Roof Hatches: There shall be two Transpec Triple Value Roof Hatches. Hatches to be equipped with audible buzzer to conform to all state and FMVSS.	
14. Passenger Post Trip Inspection System	The bus shall be equipped with electronic system that is activated by driver using warning light system. The system shall be designed so as to require the driver to walk to the back of the passenger compartment upon completing route to disarm. If not disarmed the headlights will flash and the horn will sound alerting personnel the bus was not checked to ensure all passengers have exited the bus.	

15. Exterior Paneling	Roof: The roof sheets shall be one piece from window line to window line. The roof panels shall be 20 gauge galvanized steel, secured to body bow frame with Saf-T-Bond™ structural adhesives. Fasteners used on top portion of exterior paneling shall be self-piercing rivet technology to prevent any leak path. All roof sheets shall be sealed to prevent leaks. All roof sheets shall be sealed to prevent leaks. The roof shall be reinforced with two 16 gauge roof crash rails applied internally, below the roof panels and welded into the roof bows to provide an extra measure of strength in the overhead areas. Exterior panels shall be primed both sides before assembly for rust prevention. The exterior side panels shall be at least 20 gauge galvanized steel applied to body bow frames with Saf-T-Bond™ structural adhesives and self-piercing rivet technology to prevent any leak path. Lower side skirt (floor level down) shall be quick-change replaceable design installed with threaded fasteners.	
16. Fire Extinguisher	Each bus shall be equipped with one dry type chemical fire extinguisher to meet state standards. The fire extinguisher shall be mounted in an appropriate mounting box to the front of the stepwell or inside a designated area above the driver.	Fire Extinguisher: Size: **5** Location:
17. First Aid Kit & Triangle Flares	Each bus shall be equipped with a metal type first aid kit that meets state standards. The first aid kit shall be securely fastened to the floor on the curb side of the bus to the front of the stepwell or inside a designated area above the driver. Each bus shall be equipped with a set of triangle flares in accordance with FMVSS. The triangle flares shall be securely fastened to the floor on the curb side of the bus to the front of the stepwell or inside a designated area above the driver.	First Aid Kit: Size: Location:
18. Floor Covering	Floor covering shall be heavy-duty gray vinyl. The floor in the passenger compartment shall be covered with .125" thick smooth vinyl. The aisle and entrance steps shall be covered with slip-resistant vinyl. All floor seams must be sealed with a waterproof sealer and covered with a 1" wide 16 gauge rust proof metal stripping or molding. The floor covering along the side walls shall be covered with metal molding so that dirt cannot readily work underneath the edges. 5/8" plywood floor. Wheelhouses shall be covered with a molded one-piece cover extending over entire wheelhouse.	
19. Fuel Tank Opening	Exterior: The exterior fuel fill opening shall be covered with a hinged metal positive locking door. Thumb turn or key. Interior: The interior fuel tank opening shall contain an access plate in the floor located above the fuel tank for servicing fuel tank sender and connections.	

20. Guard Rails	Minimum of four (4) guard rails to be supplied: One (1) 4" rail located below windows One (1) 4" rail located at seat cushion level One (1) 4" rail located near floor level. One (1) 4" rail located at bottom of skirt. Side rails shall be fluted at the bottom to allow for moisture drainage. Rub rails must also physically secure each roof bow flange for additional protection All rub rails to be applied to exterior of body with Saf-T-Bond™ structural adhesive and must meet 60% body joint requirements.	
21. Heater & Defrosters	*Driver's Heater* - Heater shall be installed at front center of vehicle. The heater to be 4-speed, fresh air type. Heater controls shall be electronic, automotive style. A defroster channel shall run the full length of the windshield for maximum defrosting. Heater ducting shall be distributed at floor and dash level. Defroster system shall direct air to Saf-T-Vision™ side windows. *Passenger Heater* – All heaters to be copper coil design type with aluminum fins. Heater motor/fan mechanism shall be serviceable without disturbing heater core. Passenger heaters shall be equipped with replaceable metal filters. Two (2) rear heaters rated 84,000 BTU minimum. The heater ratings shall be based on testing as outlined by SBMI. Heater cutoff valves - two (2) shall be located in the engine compartment. **Heating system shall include a cast housing booster pump and stainless steel lines/plumbing where available**.	
22. Identification	The bus shall be lettered in accordance with all applicable federal and state requirements. Bus shall be equipped with easily changeable route/bus identification sign attached to exterior rear of entrance door.	
23. Instruments Gauges & Switches	The chassis instruments and gauges shall be located within easy view of the seated driver. (Also see "Instruments in Chassis section)	
24. Insulation	Ceiling, sides, and rear panels shall be insulated with a minimum 2" thick blanket-type polyester insulation to properly deaden sound, reduce vibration, and provide a thermal barrier. The insulation shall be fire-resistant of type approved by Underwriters Laboratories, Inc. A sound absorbing molded cover shall be applied in the driver's vestibule area.	

25. Interior	All interior panels shall have lapped and hemmed edges. . Interior side panels to be mar-proof aluminized steel from window bottom to floor. The interior body height from the floor to the roof shall be a minimum of 78". **All interior ceiling panels shall be perforated to act as sound absorbing panels.**	Interior Headroom**:**
26. Lamps & Signals	All lamps shall conform to applicable FMVSS and state laws in effect at time of manufacture. Lights to include: Headlights: LED headlights with amber turn signal/running lights. Wired to alternately flash when stop arm is deployed as per state specification. Cluster: Three (3) L.E.D. Amber front pin type or with protective shields. Three (3) L.E.D. Red rear pin type or with protective shields. Marker: Two (2) L.E.D. Front corners, Two (2) L.E.D. Rear corners and side roof – All either pin type or with protective shields. Stop/Tail: One right rear L.E.D., One left rear L.E.D. with 48 square inches of illuminated surface. Light assembly to be flush mounted to body. Backup: Two (2) L.E.D. lamps with 28 square inches of illuminated surface clear lens, mounted in taillight assembly. Light to be flush mounted to body. Warning: (4) Amber & (4) Red L.E.D. lamps shall be flush mounted with Lexan covers and shall be serviceable from the interior of the bus. Stepwell: One (1) interior operating with entrance door One (1) exterior operating with entrance door Dome: One (1) for driver, L.E.D. Twelve (12) minimum, (6) rows of (2) L.E.D. Directional Front: Integrated with Headlight Assembly Directional Sides: Two (2) L.E.D. amber, one (1) located behind entrance door below window rail, one (1) located left side, similar position. Directional Rear: One right rear L.E.D., One left rear L.E.D. with 48 square inches of illuminated surface. Light assembly to be flush mounted to body. Reflectors: Two (2) on each side of bus, two (2) on rear school bus and two (2) on lower front of hood. Stop Arm: Transpec with strobing L.E.D. warning lamps to meet FMVSS and state specifications Crossing Arm: Shall be integrated design with operation mechanism located behind curb side of bumper. Crossing gate shall stow above bumper with the use of self stowing guides. Strobe Light: Shall meet FMVSS and state specifications.	

27. Mirrors	Interior mirror to be 6" x 30" safety glass with protected edges. Exterior rearview mirrors shall be breakaway style Rosco heated and remote control with Stainless Steel brackets. Exterior crossview mirrors shall be two (2) fender mounted quadrispherical mirrors heated with Stainless Steel brackets. Mirrors shall be mounted on a tripod mount with breakaway design. Chassis hood shall be reinforced with internal backing plates for durability. Mirrors shall comply with FMVSS 111.	
28. Mounting	Bus body shall be mounted to chassis frame in such a manner as to prevent shifting. Two (2) bolts are required on each mounting bracket. Rubber mounting pads reinforced with fiber shall be used to cushion the body on the chassis at every floor crossmember.	
29. Mud Flaps	There shall be rubber mud flaps mounted on the rear side of the front and rear wheel wells.	
30. Radio:	J1939 compatible AM/FM/AUX/WX Radio with Page & 6 Passenger Speakers.	
31. Reflective Tape:	2" tape applied at floor level on each side 1" tape applied around rear perimeter of vehicle School Bus signs to be 8" black letters with reflective background. Also as required by state and federal regulations.	
32. Seats	Passenger Seats: All seats shall comply with all applicable FMVSS and state specification. Seat frames shall be powder coated, non-reflective black. Cushions to be attached to frame as to prevent detachment; yet allow for cleaning by pivoting cushion upright. Upholstery to be heavy duty fireblock gray material. Seats shall be restraining type seats, no restraints to be included at this time. **First two (2) seats on curb side shall include (2) OEM installed ICS/ISO positions per seat.** **First two (2) seats on street side shall include (2) OEM installed ISO positions per seat.** Seat Spacing: 24" hip to kneeroom seat spacing is required. Driver's Seat: Seat Pedestal shall be a **fully suspended air operated** type to be adjusted by fingertip control. Seat shall be deluxe high back with adjustable seat back and **heated** seat cushion and back. Seat back to recline and include adjustable lumbar support. Seat slide shall have minimum 7" adjustment by finger tip control. Cushion shall be black fabric insert and left and right side arm rests. Seat to meet FMVSS 202 and 222. Driver's seat belt: Shall be a Type II, 3-point belt with an adjustable "D" loop for driver comfort. The belt shall be of ELR design with a push button release and **orange in color** for ease of visibility. Adjustable attachment shall be padded.	

33. Stepwell	3-Step entrance covered with black or gray slip-resistant pebble tread and ribbed rubber white nosing. Diamond plate trim on floor edge to prevent wear. Entrance assist rail to be provided on both front and backside of stepwell. **Stepwell shall be coated** with a durable high performance Tuff Coat material to guard against abrasion, corrosion and weather. Material shall be applied to both the front and back side of the step and provide a flexible, textured surface that is resistant to chemicals including road de-icing treatments.	
34. State Inspection	Bus shall be state of Illinois inspected prior to delivery	
35. Storage	Driver shall have ample storage room including overhead storage compartment above the driver. A cup holder shall be mounted in the dash area. A clipboard holder shall be mounted in the driver compartment area within reach of the driver from the seated position.	
36. Sunvisor	Visor to be 6" x 30" dark acrylic and fully adjustable mounted in adjustable overhead track.	
37. Towing	Two (2) tow eyes/hooks shall be provided at the front of the vehicle and two (2) tow eyes/hooks shall be provided at the rear of the vehicle.	
38. Undercoating	Entire underbody to be completely undercoated with asphalt emulsion water-based undercoating after body to chassis mounting for maximum rust proofing.	
39. Ventilation	Body shall be equipped with a static type, non-adjustable exhaust ventilator located in low pressure area of front roof.	
40. Warranty	<u>School Bus Body & Chassis Warranty:</u> A copy of the body and chassis manufacturer's warranty shall be enclosed with and become a part of any bid which shall receive consideration by the purchaser. Such warranties shall speak specifically to the following: Within the first **5 years** following delivery to the purchaser's location with no mileage limitation: • Failure in major structural components including those caused by deterioration due to rust. • Failure in seat frames and barrier frames. • Failure of the chassis frame including crossmembers. Within the first **3 years/50,000 Miles** following delivery to the purchaser's location - all other original components manufactured by the body and chassis manufacturer, all original components manufactured by outside vendors, and failure of any components manufactured by outside suppliers and included as original equipment by the body and chassis manufacturer.	Warranty:

41. Windows	Two-piece side windows shall be **tinted and tempered** safety glass in flat black frames. The top portion of the side windows shall be capable of being lowered to a position that provides an opening at least 12" high x 25" wide. Windows must be accessible for removal without lowering the wiring harness access panel. All passenger windows shall incorporate 3" aluminum mullion bar design. Rear door glass shall be bonded, flat safety type. Driver's window shall be double-sliding sash with tempered safety glass. All interior and exterior side window frames shall be flat black. *Saf-T-Vision™* - One Saf-T-Vision™ window shall be provided forward of the driver's window and one Saf-T-Vision™ shall be provided below the standard driver's window. Two Saf-T-Vision™ windows shall be provided forward of the entrance door. Stationary glass shall be bonded. Thermopane windows to include the driver's window, top entrance door windows, and the first window behind the entrance door.	
42. Windshield	Windshield shall be one-piece bonded and curved, slanted to reduce glare and breakage and provide maximum vision. The tinted safety plate laminated glass shall provide minimum 3,000 square inches of windshield glass area. **Windshield shall include a 5" tinted band at top.**	
43. Windshield Washer	Dual electric wet arm type windshield washers **with heated wiper fluid reservoir**.	
44. Windshield Wipers	Bus to be equipped with two (2) heavy-duty wet arm type bottom mounted wipers resulting in 1,537 square inches of wiped windshield. Wipers to be intermittent. Wiper motor shall be accessible for service under engine hood.	
45. Custom Interior Options	Trash receptacle shall be included and mounted in a location specified by the customer. Broom handle clip shall be included and mounted in a proper location specified by the customer.	

Item	Chassis Specifications Minimum Specifications Required	Specifications Furnished. Fill in all spaces, Note & explain equivalents or exceptions.
Conventional	2028 Model Year New Generation Type C Bus type capable of transporting 74 passengers. GVWR shall not be less than 29,800 lbs.	
1. Air Cleaner	Shall be heavy-duty with a replaceable filter element for ease of maintenance. Engine air filtration system must have integrated hood plenum with two (2) expulsion valves to remove moisture and large contaminants. The air cleaner shall be readily accessible for servicing. The air cleaner shall include an air restriction indicator.	
2. Air System	Shall be equipped with an engine mounted air compressor and include one (1) air accessory tank, one (1) automatic air tank drain valve and dash mounted air pressure gauge. Shall be equipped with a Bendix AD-9 heated air dryer. Dryer shall be a desiccant type dryer located between air compressor and wet air tank for the purpose of removing moisture from the air system.	
3. Alternator	Shall be a Delco pad mount 12-volt alternator of not less than 200 amps and provide at least 50% of the rated charge at engine idle.	Alternator Make: Size: **200**
4. Axle, Front	Shall be heavy-duty "I" beam design. Minimum 10,000 lb. Axle shall be equipped with synthetic lubricant. Turning radius (curb) shall not exceed 33'3". Gross axle weight rating dependent on optional equipment selected up to maximum allowable.	Axle Capacity:
5. Axle, Rear	Shall be a full – floating type and have minimum gross weight capacity of 21,000 lbs. Axle shall be equipped with synthetic lubricated wheel bearings and include a magnetic drain plug. Ratio to be determined for desired performance dependant on bus application and operating conditions.	Axle Capacity:
6. Batteries	Shall be three 12-volt low maintenance, lead antimony type batteries with a minimum of 2100 cold cranking amps. Batteries to be mounted on roller bearing slide out tray. Battery tray to have (2) two positive, spring loaded pins to hold the tray in the closed position. Polyethylene battery cover to be provided. Battery box to be chassis frame rail mounted. **Shall include battery disconnect switch.**	CCAs:
7. Bumper	<u>Front:</u> 3/16" thick heavy-duty front bumper swept back style matching the hood shape **Bumper shall be coated** with a durable high-performance Tuff Coat material to guard against abrasion, corrosion and weather. Material shall be applied to both the front and back side of bumper and provide a flexible, textured surface that is resistant to chemicals including road and de-icing treatments.	

8. Brakes	Shall be Hydraulic Pin-Slide ABS Disc Brakes with **Performance Friction** rotors that include corrosion resistant ABS tone ring. Must be equipped with a dash mounted air actuated parking brake. Service brakes shall meet all requirements of FMVSS 121 in effect at time of manufacture. **Brake lines shall be Nyclad coated lines to resist corrosion.**	
9. Brakes - Parking	Expandable drum type mounted to rear axle actuated by dash mounted air valve control.	
10. Cold Starting Aids	Engine Block Heater which shall be rated at 750 watts Ambient Air Intake Warmer to assist with cold starting	
11. Cooling System	Heavy-duty down flow radiator with 700 square inch minimum aluminum core construction for optimum engine and transmission cooling. Shall include an Electro-Magnetic On/Off Fan Clutch. Modulated fan to increase fuel mileage and reduce noise. Formulated long-life coolant required. **Lower radiator piping shall be stainless steel.**	
12. Engine	2024 EPA/CARB Emissions Compliant, **250 horsepower** @2400 RPM minimum; **660 ft. lbs. torque** @ 1600 RPM minimum, electronically controlled in-line 6-cylinder engine. Engine must meet all Federal emissions requirements for engines built after January 1, 2024. **(NO EXCEPTIONS)** Full electronic emission controls are required including dash mounted regeneration process operating condition lights. V-8 engines are not acceptable. **(NO EXCEPTIONS)** A fast engine warm up device that is switch activated shall be supplied. The switch shall activate the fast idle function, split injection performance, activate the intake throttle and close the exhaust flap to facilitate engine warm up for heat and fuel efficiency.	Engine Supplied: Horsepower: Torque:
13. Exhaust Brake	OEM installed integral exhaust brake with variable turbo. Exhaust brake must be able to be electronically controlled driver with on/off dash switch.	
14. Exhaust System	To provide sufficient exhaust treatment to a minimum standard of the 2024 EPA emissions standard. Exhaust system to provide Selective Catalytic Reduction (SCR) emissions technology. The SCR system to include an ATD (After Treatment Device), dosing tube with dosing nozzle, and Selective Catalyst Reduction dosing catalyst. System to also include a minimum of 11gallon Diesel Exhaust Fluid tank equipped with a drain outlet. Dosing lines to self purge upon turning off engine. Access door to be provided for refilling of Diesel Exhaust Fluid tank. Tail pipe shall exit the rear left side beneath the bumper and must include a heat mitigation device. Exhaust shall be effective in reducing exhaust temperatures by at least 200°-250° and be made of stainless steel. **(Bidders may not take exception to this safety requirement)**	

15. Frame	Heavy duty 50,000 PSI frame with 10 1/8" x 3" x 5/16" thick steel minimum. RBM of frame must be 625,000 per frame rail minimum to prevent frame damage	
16. Fuel Tank	100 gallon capacity minimum, meeting all requirements of FMVSS 301. The tank to be located between the frame rails and immediately after of the rear axle. The tank shall also include an underside safety plate for additional protection. The bus floor shall include an access plate for servicing the sending unit of the fuel tank. An outside fuel filler door to be provided. **Fuel tank shall be coated** with a durable high performance Tuff Coat material to guard against abrasion, corrosion and weather. Material shall be applied to the entire exterior of the fuel tank and provide a flexible, textured surface that is resistant to chemicals including road and de-icing treatments.	
17. Fuel/Water Separator	Heated Fuel/Water Separator with Indicator Light & Primer Pump. Shall be rated at 10 Microns.	
18. Hood	Hood shall be equipped with fiberglass tilt hood with easy opening hood for 15# maximum pull effort. Engine splash shield must tilt out of way with the hood needed to gain access for fluid check. Must have removable grill for easy serviceability. Hood must include rubber lined hood pull for driver's comfort. Left side hood, engine air intake with integrated air intake plenum. Hood shall include a two-stage base coat/clear coat finish.	
19. Instrument Panel	Instrument panel shall include the following: • Speedometer/Tripmeter • Tachometer/Hourmeter • Oil pressure gauge • Water temperature gauge • Fuel gauge • Voltmeter • Combination directional signal/headlight dimmer switch on steering column. • Warning lights and buzzers for oil pressure, water temperature, and air pressure if applicable. • Hazard warning switch on the steering column. • Key type starter and engine stop switch. • Electronic RPM control & Cruise Control Switches for RPM control throttle and cruise to be high mount at steering wheel level so driver can operate without removing eyes from road. Instrumentation must provide diagnostic capabilities for body and chassis electrical system.	
20. Rustproofing	All chassis framing, fasteners, and suspension systems are to be painted with a rust inhibiting paint after assembly and before body mounting.	

21. Shock Absorbers	Heavy-duty direct acting double action piston type – two 2 front and two 2 rear.	
22. Springs/Suspension	Front shall be taper leaf type (parabolic) springs, with maintenance free rubber bushings. Minimum capacity of 9,000 lbs. **Rear shall be heavy-duty air-ride suspension** system rated at 21,000 pounds minimum to provide optimum comfort at no load or at full load. System shall include the following: Two (2) air springs Two (2) parabolic leaf spring trailing arms with rubber bushings to eliminate lubrication requirements. Rubber bushed lateral track rod and two heavy duty shock absorbers Dual load sensitive height control valve to maintain constant frame and suspension height.	Spring rating: Front: Rear:
23. Steering	Integral full power TRW THP-60 with a tilt and telescoping steering column and a 18" 2-spoke padded steering wheel.	
24. Tires	11R22.5 14 ply steel belted radial tubeless type tires. Tread Pattern: XZE2 Front & XDN2 Rear	
25. Transmission	Allison PTS 2500 automatic shift control shall be mounted to the right of the steering column. The transmission shall include an external filter and oil to coolant transmission cooler to be mounted in the radiator to provide maximum efficiency and fewest connections and fittings. The transmission fluid fill and check shall be located on the left side of the engine opposite the exhaust manifold. Transmission shall be programmed for **(6) forward gears** for maximum fuel economy performance. **Transynd Synthetic Transmission Fluid is Required.**	Transmission:
26. Wheelbase	Shall be a minimum 279 inches with a maximum curb to curb turning radius of 33’3”.	
27. Wheels	Six minimum 8.25" x 22.5" 10-hole disc. All wheels to be interchangeable. May include rim mounted Tire Pressure Monitoring System Sensors on each wheel.	

28. Wiring	**Shall be equipped with fully integrated multiplex electrical system for both body and chassis.** ECMs to be chassis frame mounted for ease of access. Body and chassis wiring to be number and color-coded with matched weatherproof connectors. Nine pin diagnostic to be port located under dash for both body and chassis system. All available circuits protected by a combination of solid-state technology and fuses. All internal wiring shall be routed down the inside of the bus, above the side windows, behind a completely removable cover. This cover shall be removable without loosening the side windows. A complete wiring diagram is to be furnished. All wiring that passes through metal shall be grommeted. Clips are required to support main body wiring harness. Wiring shall be flame retardant.	

Byron Community Unit School District #226
Type-C School Bus Specifications

74 Passenger Conventional Bus
With Underbody Luggage Compartments

The school bus body (or bodies) furnished shall comply with all current state and Federal Motor Vehicle Safety Standards in effect at time of bid. Additionally, Byron C.U.S.D. is requiring the following supplementary specifications. Any exceptions to these specifications should be concisely noted in the space provided (such as number of passenger and/or specifications pertinent to the model of bus you are bidding.) Equivalency of any exceptions to the items requested will be solely at the discretion of Byron C.U.S.D.

Bidding Company Name: _____

Address: _____

_____

Contact: _____

E-Mail Address: _____ Website: _____

Make and Model of Bus Body & Chassis: _____

Passenger Capacity: _____ Kneeroom: **24" Required** Model Year: _____

Item	Body Specifications Minimum Specifications Required	Specifications Furnished. Fill in all spaces, Note & explain equivalents or exceptions.
1. Aisle	There shall be a minimum 12" wide aisle from the entrance door to all emergency doors. The aisle shall be trimmed with stainless steel aisle strips or no aisle strips are required if the aisle and floor seam are tight to prevent debris from entering underneath flooring	
2. Assist Rail	Back side of stepwell: There shall be a stainless steel assist rail at the entrance door, mounted near the midpoint of the stepwell and extending to near the top of the seat barrier. Front side of stepwell: There shall be an additional stainless steel assist rail at the entrance door. Both assist rails shall be securely attached.	
3. Back-up Alarm	The bus shall be equipped with an automatic back-up alarm installed behind the rear axle. This audible alarm shall be rated at 112dba.	DBA:
4. Bumper	Rear: Shall be formed from 3/16" plate steel and a minimum of 9" wide (high) with a .5369 square inch section modulus. Bumper shall wrap around corners of bus and be attached to the chassis frame. Bumper to be diagonally braced with minimum 4" steel tubing.	

5. Camera System	<u>Minimum Camera Head and Installation Specifications:</u> • Quantity (3) – 3.6MM High Definition Dome Camera with (Infrared LED) and Audio Housing: o Die-cast aluminum housing (powder coated), impact-resistant polycarbonate, anti-glare, scratch-resistant hard coating, UV protected surface mount and no extra bracket required. o 1080p progressive scan resolution o Low-profile, vandal-resistant housing o Infrared LEDs to see in low light o True Day/Night Operation o Back-light compensation improves image quality in high contrast conditions o High-fidelity audio o Warranty: 3-year parts and labor o Installation: (1) 3.6MM camera head shall be mounted on the front bulkhead aimed toward the rear of the vehicle, (1) 3.6MM camera head shall be mounted in the dash area aimed within the wiper sweep, recording the windshield view and (1) 3.6MM camera head shall be mounted in the area of the storage compartment above the driver seat aimed toward the stepwell of the vehicle. • Quantity (2) – 171 Degree Ultra-wide High Definition Camera with (Infrared LED) and Audio Housing: o Die-cast aluminum housing (powder coated), impact-resistant polycarbonate, anti-glare and scratch-resistant hard coating o 1080p progressive scan resolution o Infrared LEDs to see in low light o Ultra-Wide viewing angle o True Day/Night Operation o High-fidelity audio o Warranty: 3-year parts and labor o Installation: (1) 171degree camera head shall be mounted street side in row 5 aimed across and toward the curb side of the vehicle and (1) 171degree camera head shall be mounted street side in row 9 aimed across and toward the curb side of the vehicle. • Quantity (1) 16MM High Definition Outdoor Wedge Camera with (Infrared LED): o Solid aluminum housing (powder coated), impact-resistant polycarbonate, anti-glare and scratch-resistant hard coating o 720p/1080p high-definition resolution o Rugged IP67-rated weatherproof housing o True Day/Night Operation o Back-light compensation improves image quality in high contrast conditions o Rotation 360degree gimbal for flexible mounting options o Warranty: 3-year parts and labor o Installation: (1) 16MM camera head shall be mounted near the stop arm aimed toward the rear of the vehicle, recording vehicles passing the vehicle.	

5. Camera System (continued)	Minimum Digital Video Recorder (DVR) and Installation Specifications: • Quantity (1) DVR shall record up to (6) channels of high-definition (HD) video, up to (6) channels of audio o Recorded Resolution: 1920 x 1080 o Recording at 1080p with HD Cameras o Record Rate – Main: Up to 30 FPS, at 1080p 120FPS Max, Up to 5 FPS all channels o Must have 500 GB to 2 TB (HDD) removable media cartridge with hard drive storage capacity. o Standard computer hard drives or SD style memory cards are NOT acceptable o Must have dimensions no larger than 2.5 x 7 x 9.5 inch (64 x 188 x 241 mm) o Automatic repeat-record when memory device is full (user selectable on-off) o Integrated lock box with removeable locking door, rounded edges, and power painted finish. o Must include Event/Diagnostic Button to mark events for quick retrieval o Requires (5) user customizable full featured signal inputs o Passive GPS system included o Wi-Fi: Built-in 802.11 (AC, AN, BGN) with dual antenna ports o Warranty: 3-year parts and labor • Installation: o DVR: Shall be securely mounted in front bulkhead leaving easy access for hard drive retrieval. o Event/Diagnostic Button: Shall be installed for easy driver access and viewing. o Signal Inputs: Shall be connected and configured to the following vehicle inputs: Warning Lights, Stop Arm, Brake Lights, Left Turn Signal, and Right Turn Signal. Passive GPS System: Shall be installed to ensure proper signal.	
6. Certificate Holder	Bus shall be equipped with a minimum 4” x 6” transparent certificate and registration holder mounted on the interior front header area of the bus.	
7. Color	Exterior: Shall be National School Bus Yellow. This paint shall be baked-on high solids polyurethane. Trim, including warning light visors (if provided), guard rails, and door handles shall be black. Roof: **Exterior roof panels shall be painted white.** Interior: Shall be light gray baked-on enamel. The area from the bottom of the side windows to the seat rail shall be a clear coated Galvalume steel. All seat frames, dash, heaters, and heater ducts shall have a baked-on black powder coating for scratch resistance. All metal panels on the bus to be painted shall be primed on both sides prior to assembly.	

8. Construction	The bus body shall be constructed to meet or exceed all state and federal school bus requirements in effect at the time of manufacture. *Roof Bows* – The roof bow frame assembly shall consist of continuous, one-piece, 14 gauge rolled channel hat sections, stretch formed and mounted on 30" centers to provide a roll bar type protection. Roof bows shall be 3 1/16" wide with a cross section modulus of .22[3]. *Roof Crash Rails* – two continuous, one-piece 16 gauges rolled channel roof crash rails extending from first to last roof bow shall be applied internally between interior and exterior sheets. *Floor* – Shall be constructed of 14 gauge Galvalume steel formed with overlapping joints on 30" centers. Floor will be further reinforced with 11 gauge Z-channel crossmembers installed on 10" centers and shall extend the full width of the floor except in wheelhouse area. All floor crossmembers shall be welded to 14 gauge steel floor panels, which extend the full length of the body floor on each side. An interior impact panel shall be one piece continuous welded to floor and welded at each intersection with body bow. There shall be an 11-gauge floor X-brace reinforcement added to wheelhouse area. Wheelhouse shall be stamped 16-gauge one-piece design. *Vertical Headers* – Shall be installed at each roof bow extending from upper side sheet to exterior structural header creating closed box type reinforcement at each roof bow.	
9. Defrosters	Defroster shall keep windshield clear of fog, snow, and ice. The defroster shall include full length windshield defroster channel for even distribution of heated air to the windshield. Two defroster fans mounted over windshield center.	
10. Dimensions	• Minimum exterior width 96" • Minimum interior width 90" • Minimum interior height 78"	
11. Doors	Service: The service door shall be **electric operated with a (2) position switch**, outward opening under control of driver and so designed as to prevent accidental openings. The service door shall be operated via a driver controlled switch. The door shall be located rear of the front wheels on the right side of the bus. Door shall seal against a stationary rubber and bottom step edge. No part of door to ride in the stepwell when closed. Vertical closing edges of the door shall be equipped with flexible material. The door panel shall be a bolted frame. Construction and made of anodized extruded aluminum. The door control mechanism shall be located to the left of the driver on the switch cabinet to prevent accidental opening by students. The control mechanism of the door shall be located above the door and concealed behind a hinged panel for ease of service. Door shall offer a minimum 30" clear opening. All doors shall be equipped with padding at the top edge of each door opening. The pad shall be at least 3" wide and 1" thick and extend the full width of the door opening. Battery Door: Battery compartment door shall be equipped with a keyed locking latch, key shall match fuel door lock and Diesel Exhaust Fluid door if those doors are keyed.	Type: Operation:

12. Electrical	**Shall be equipped with fully integrated multiplex electrical system for both body and chassis.** ECMs to be chassis frame mounted for ease of access. Body and chassis wiring to be number and color-coded with matched weatherproof connectors. Nine pin diagnostic to be port located under dash for both body and chassis system. All available circuits protected by a combination of solid-state technology and fuses. All internal wiring shall be routed down the inside of the bus, above the side windows, behind a completely removable cover. This cover shall be removable without loosening the side windows. A complete wiring diagram is to be furnished. All wiring that passes through metal shall be grommeted. Clips are required to support main body wiring harness. Wiring shall be flame retardant. **Switches shall be rocker type design and provide "smart switch" technology offering switches that can be repositioned without rewiring or reprogramming of system.** **Shall include (1) 12 Volt Power Outlet** **Shall include a Master Noise Kill Switch**	
13. Emergency Exits	All emergency exits shall conform to FMVSS 217. Emergency Door: There shall be an emergency door located in the center rear of the bus. Door shall be constructed using self-piercing rivet technology to prevent any leak path and shall have a minimum of 38" horizontal opening and a 61" vertical opening. Door to be equipped with an audible buzzer which will sound when latch is moved toward open position. Door to have upper and lower glass. Piano type hinge is not acceptable. Door shall be equipped with locking device and wired to interrupt starting when in locked position. There shall be a device installed on the top of the emergency door that will automatically hold the door in the open position during emergencies and evacuation drills. Side Emergency Doors Are Not Acceptable. Roof Hatches: There shall be two Transpec Triple Value Roof Hatches. Hatches to be equipped with audible buzzer to conform to all state and FMVSS.	
14. Passenger Post Trip Inspection System	The bus shall be equipped with electronic system that is activated by driver using warning light system. The system shall be designed so as to require the driver to walk to the back of the passenger compartment upon completing route to disarm. If not disarmed the headlights will flash and the horn will sound alerting personnel the bus was not checked to ensure all passengers have exited the bus.	

15. Exterior Paneling	Roof: The roof sheets shall be one piece from window line to window line. The roof panels shall be 20 gauge galvanized steel, secured to body bow frame with Saf-T-Bond™ structural adhesives. Fasteners used on top portion of exterior paneling shall be self-piercing rivet technology to prevent any leak path. All roof sheets shall be sealed to prevent leaks. All roof sheets shall be sealed to prevent leaks. The roof shall be reinforced with two 16 gauge roof crash rails applied internally, below the roof panels and welded into the roof bows to provide an extra measure of strength in the overhead areas. Exterior panels shall be primed both sides before assembly for rust prevention. The exterior side panels shall be at least 20 gauge galvanized steel applied to body bow frames with Saf-T-Bond™ structural adhesives and self-piercing rivet technology to prevent any leak path. Lower side skirt (floor level down) shall be quick-change replaceable design installed with threaded fasteners.	
16. Fire Extinguisher	Each bus shall be equipped with one dry type chemical fire extinguisher to meet state standards. The fire extinguisher shall be mounted in an appropriate mounting box to the front of the stepwell or inside a designated area above the driver.	Fire Extinguisher: Size: Location:
17. First Aid Kit & Triangle Flares	Each bus shall be equipped with a metal type first aid kit which meets state standards. The first aid kit shall be securely fastened to the floor on the curb side of the bus to the front of the stepwell or inside a designated area above the driver. Each bus shall be equipped with a set of triangle flares in accordance with FMVSS. The triangle flares shall be securely fastened to the floor on the curb side of the bus to the front of the stepwell or inside a designated area above the driver.	First Aid Kit: Size: Location:
18. Floor Covering	Floor covering shall be heavy-duty gray vinyl. The floor in the passenger compartment shall be covered with .125" thick smooth vinyl. The aisle and entrance steps shall be covered with slip-resistant vinyl. All floor seams must be sealed with a waterproof sealer and covered with a 1" wide 16 gauge rust proof metal stripping or molding. The floor covering along the side walls shall be covered with metal molding so that dirt cannot readily work underneath the edges. 5/8" plywood floor. Wheelhouses shall be covered with a molded one-piece cover extending over entire wheelhouse.	
19. Fuel Tank Opening	Exterior: The exterior fuel fill opening shall be covered with a hinged metal positive locking door. Thumb turn or key. Interior: The interior fuel tank opening shall contain an access plate in the floor located above the fuel tank for servicing fuel tank sender and connections.	

20. Guard Rails	Minimum of four (4) guard rails to be supplied: One (1) 4" rail located below windows One (1) 4" rail located at seat cushion level One (1) 4" rail located near floor level. One (1) 4" rail located at bottom of skirt. Side rails shall be fluted at the bottom to allow for moisture drainage. Rub rails must also physically secure each roof bow flange for additional protection All rub rails to be applied to exterior of body with Saf-T-Bond™ structural adhesive and must meet 60% body joint requirements.	
21. Heater & Defrosters	*Driver's Heater* - Heater shall be installed at front center of vehicle. The heater to be 4-speed, fresh air type. Heater controls shall be electronic, automotive style. A defroster channel shall run the full length of the windshield for maximum defrosting. Heater ducting shall be distributed at floor and dash level. Defroster system shall direct air to Saf-T-Vision™ side windows. *Passenger Heater* – All heaters to be copper coil design type with aluminum fins. Heater motor/fan mechanism shall be serviceable without disturbing heater core. Passenger heaters shall be equipped with replaceable metal filters. Two (2) rear heaters rated 84,000 BTU minimum. The heater ratings shall be based on testing as outlined by SBMI. Heater cutoff valves - two (2) shall be located in the engine compartment. **Heating system shall include a cast housing booster pump and stainless steel lines/plumbing where available**.	
22. Identification	The bus shall be lettered in accordance with all applicable federal and state requirements. Bus shall be equipped with easily changeable route/bus identification sign attached to exterior rear of entrance door.	
23. Instruments Gauges & Switches	The chassis instruments and gauges shall be located within easy view of the seated driver. (Also see "Instruments in Chassis section)	
24. Insulation	Ceiling, sides, and rear panels shall be insulated with a minimum 2" thick blanket-type polyester insulation to properly deaden sound, reduce vibration, and provide a thermal barrier. The insulation shall be fire-resistant of type approved by Underwriters Laboratories, Inc. A sound absorbing molded cover shall be applied in the driver's vestibule area.	

25. Interior	All interior panels shall have lapped and hemmed edges. . Interior side panels to be mar-proof aluminized steel from window bottom to floor. The interior body height from the floor to the roof shall be a minimum of 78". **All interior ceiling panels shall be perforated to act as sound absorbing panels.**	Interior Headroom**:**
26. Lamps & Signals	All lamps shall conform to applicable FMVSS and state laws in effect at time of manufacture. Lights to include: Headlights: LED headlights with amber turn signal/running lights. Wired to alternately flash when stop arm is deployed as per state specification. Cluster: Three (3) L.E.D. Amber front pin type or with protective shields. Three (3) L.E.D. Red rear pin type or with protective shields. Marker: Two (2) L.E.D. Front corners, Two (2) L.E.D. Rear corners and side roof – All either pin type or with protective shields. Stop/Tail: One right rear L.E.D., One left rear L.E.D. with 48 square inches of illuminated surface. Light assembly to be flush mounted to body. Backup: Two (2) L.E.D. lamps with 28 square inches of illuminated surface clear lens, mounted in taillight assembly. Light to be flush mounted to body. Warning: (4) Amber & (4) Red L.E.D. lamps shall be flush mounted with Lexan covers and shall be serviceable from the interior of the bus. Stepwell: One (1) interior operating with entrance door One (1) exterior operating with entrance door Dome: One (1) for driver, L.E.D. Twelve (12) minimum, (6) rows of (2) L.E.D. Directional Front: Integrated with Headlight Assembly Directional Sides: Two (2) L.E.D. amber, one (1) located behind entrance door below window rail, one (1) located left side, similar position. Directional Rear: One right rear L.E.D., One left rear L.E.D. with 48 square inches of illuminated surface. Light assembly to be flush mounted to body. Reflectors: Two (2) on each side of bus, two (2) on rear school bus and two (2) on lower front of hood. Stop Arm: Transpec with strobing L.E.D. warning lamps to meet FMVSS and state specifications Crossing Arm: Shall be integrated design with operation mechanism located behind curb side of bumper. Crossing gate shall stow above bumper with the use of self stowing guides. Strobe Light: Shall meet FMVSS and state specifications.	

27. Luggage - Exterior	Curbside Luggage Compartment: 100” Wide x 20” High x 25.7” Deep (29.7 Cubic Feet) Driver’s Side Luggage Compartment: 100” Wide x 20” High x 25.7” Deep (29.7 Cubic Feet) Both luggage compartments shall have a key operated lock as well as hydraulic/gas operated struts which shall act as hold open devices in lieu of chains.	
28. Mirrors	Interior mirror to be 6" x 30" safety glass & protected edge. Exterior rearview mirrors shall be breakaway style Rosco heated and remote control with Stainless Steel brackets. Exterior crossview mirrors shall be two (2) fender mounted quadrispherical mirrors heated with Stainless Steel brackets. Mirrors shall be mounted on a tripod mount with breakaway design. Chassis hood shall be reinforced with internal backing plates for durability. Mirrors shall comply with FMVSS 111.	
29. Mounting	Bus body shall be mounted to chassis frame in such a manner as to prevent shifting. Two (2) bolts are required on each mounting bracket. Rubber mounting pads reinforced with fiber shall be used to cushion the body on the chassis at every floor crossmember.	
30. Mud Flaps	There shall be rubber mud flaps mounted on the rear side of the front and rear wheel wells.	
31. Radio:	J1939 compatible AM/FM/AUX/WX Radio with Page & 6 Passenger Speakers.	
32. Reflective Tape:	2” tape applied at floor level on each side 1” tape applied around rear perimeter of vehicle School Bus signs to be 8” black letters with reflective background. Also as required by state and federal regulations.	
33. Seats	Passenger Seats: All seats shall comply with all applicable FMVSS and state specification. Seat frames shall be powder coated, non-reflective black. Cushions to be attached to frame so as to prevent detachment yet allow for cleaning by pivoting cushion upright. Upholstery to be heavy duty fireblock gray material. Seats shall be restraining type seats, no restraints to be included at this time. **First two (2) seats on curb side shall include (2) OEM installed ICS/ISO positions per seat.** **First two (2) seats on street side shall include (2) OEM installed ISO positions per seat.** Driver’s Seat: Seat Pedestal shall be a **fully suspended air operated** type to be adjusted by fingertip control. Seat shall be deluxe high back with adjustable seat back and **heated** seat cushion and back. Seat back to recline and include adjustable lumbar support. Seat slide shall have minimum 7" adjustment by finger tip control. Cushion shall be black fabric insert and left and right side arm rests. Seat to meet FMVSS 202 and 222.	

33. Seats (continued)	Seat Spacing: 24" hip to kneeroom seat spacing is required. Driver's seat belt: Shall be a Type II, 3-point belt with an adjustable "D" loop for driver comfort. The belt shall be of ELR design with a push button release and **orange in color** for ease of visibility. Adjustable attachment shall be padded.	
34. Stepwell	3-Step entrance covered with black or gray slip-resistant pebble tread and ribbed rubber white nosing. Diamond plate trim on floor edge to prevent wear. Entrance assist rail to be provided on both front and backside of stepwell. **Stepwell shall be coated** with a durable high performance Tuff Coat material to guard against abrasion, corrosion and weather. Material shall be applied to both the front and back side of the step and provide a flexible, textured surface that is resistant to chemicals including road and de-icing treatments.	
35. State Inspection	Bus shall be state of Illinois inspected prior to delivery	
36. Storage	Driver shall have ample storage room including overhead storage compartment above the driver. A cup holder shall be mounted in the dash area. A clipboard holder shall be mounted in the driver compartment area within reach of the driver from the seated position.	
37. Sunvisor	Visor to be 6" x 30" dark acrylic and fully adjustable mounted in adjustable overhead track.	
38. Towing	Two (2) tow eyes/hooks shall be provided at the front of the vehicle and two (2) tow eyes/hooks shall be provided at the rear of the vehicle.	
39. Undercoating	Entire underbody to be completely undercoated with asphalt emulsion water-based undercoating after body to chassis mounting for maximum rust proofing.	
40. Ventilation	Body shall be equipped with a static type, non-adjustable exhaust ventilator located in low pressure area of front roof.	
41. Warranty	School Bus Body & Chassis Warranty: A copy of the body and chassis manufacturer's warranty shall be enclosed with and become a part of any bid which shall receive consideration by the purchaser. Such warranties shall speak specifically to the following: Within the first **5 years** following delivery to the purchaser's location with no mileage limitation: • Failure in major structural components including those caused by deterioration due to rust. • Failure in seat frames and barrier frames. • Failure of the chassis frame including crossmembers.	Warranty:

41. Warranty (continued)	Within the first **3 years/50,000 Miles** following delivery to the purchaser's location - all other original components manufactured by the body and chassis manufacturer, all original components manufactured by outside vendors, and failure of any components manufactured by outside suppliers and included as original equipment by the body and chassis manufacturer.	
42. Windows	Two-piece side windows shall be **tinted and tempered** safety glass in flat black frames. The top portion of the side windows shall be capable of being lowered to a position that provides an opening at least 12" high x 25" wide. Windows must be accessible for removal without lowering the wiring harness access panel. All passenger windows shall incorporate 3" aluminum mullion bar design. Rear door glass shall be bonded, flat safety type. Driver's window shall be double-sliding sash with tempered safety glass. All interior and exterior side window frames shall be flat black. *Saf-T-Vision™* - One Saf-T-Vision™ window shall be provided forward of the driver's window and one Saf-T-Vision™ shall be provided below the standard driver's window. Two Saf-T-Vision™ windows shall be provided forward of the entrance door. Stationary glass shall be bonded. Thermopane windows to include the driver's window, top entrance door windows, and the first window behind the entrance door.	
43. Windshield	Windshield shall be one-piece bonded and curved, slanted to reduce glare and breakage and provide maximum vision. The tinted safety plate laminated glass shall provide minimum 3,000 square inches of windshield glass area. **Windshield shall include a 5" tinted band at top.**	
44. Windshield Washer	Dual electric wet arm type windshield washers **with heated wiper fluid reservoir**.	
45. Windshield Wipers	Bus to be equipped with two (2) heavy-duty wet arm type bottom mounted wipers resulting in 1,537 square inches of wiped windshield. Wipers to be intermittent. Wiper motor shall be accessible for service under engine hood.	
46. Custom Interior Options	Trash receptacle shall be included and mounted in a location specified by the customer. Broom handle clip shall be included and mounted in a proper location specified by the customer.	

Item	Chassis Specifications Minimum Specifications Required	Specifications Furnished. Fill in all spaces, Note & explain equivalents or exceptions.
Conventional	2028 Model Year New Generation Type C Bus type capable of transporting 74 passengers. GVWR shall not be less than 29,800 lbs.	
1. Air Cleaner	Shall be heavy-duty with a replaceable filter element for ease of maintenance. Engine air filtration system must have integrated hood plenum with two (2) expulsion valves to remove moisture and large contaminants. The air cleaner shall be readily accessible for servicing. The air cleaner shall include an air restriction indicator.	
2. Air System	Shall be equipped with an engine mounted air compressor and include one (1) air accessory tank, one (1) automatic air tank drain valve and dash mounted air pressure gauge. Shall be equipped with a Bendix AD-9 heated air dryer. Dryer shall be a desiccant type dryer located between air compressor and wet air tank for the purpose of removing moisture from the air system.	
3. Alternator	Shall be a Delco pad mount 12-volt alternator of not less than 200 amps and provide at least 50% of the rated charge at engine idle.	Alternator Make: Size:
4. Auxiliary Heating System	OEM installed Webasto 17,000 BTU auxiliary coolant heating system to provide reduced engine idle time, and lower maintenance costs while delivering auxiliary heat to windshields, windows and bus interior. Shall include a Webasto (7) day programmable timer.	
5. Axle, Front	Shall be heavy-duty "I" beam design. Minimum 10,000 lb. Axle shall be equipped with synthetic lubricant. Turning radius (curb) shall not exceed 33'3". Gross axle weight rating dependent on optional equipment selected up to maximum allowable.	Axle Capacity:
6. Axle, Rear	Shall be a full – floating type and have minimum gross weight capacity of 21,000 lbs. Axle shall be equipped with synthetic lubricated wheel bearings and include a magnetic drain plug. Ratio to be determined for desired performance dependant on bus application and operating conditions.	Axle Capacity:
7. Batteries	Shall be three 12-volt low maintenance, lead antimony type batteries with a minimum of 2100 cold cranking amps. Batteries to be mounted on roller bearing slide out tray. Battery tray to have (2) two positive, spring loaded pins to hold the tray in the closed position. Polyethylene battery cover to be provided. Battery box to be chassis frame rail mounted. **Shall include battery disconnect switch.**	CCAs:

8. Bumper	Front: 3/16" thick heavy-duty front bumper swept back style matching the hood shape **Bumper shall be coated** with a durable high performance Tuff Coat material to guard against abrasion, corrosion and weather. Material shall be applied to both the front and back side of bumper and provide a flexible, textured surface that is resistant to chemicals including road and de-icing treatments.	
9. Brakes	Shall be Hydraulic Pin-Slide ABS Disc Brakes with **Performance Friction** rotors that include corrosion resistant ABS tone ring. Must be equipped with a dash mounted air actuated parking brake. Service brakes shall meet all requirements of FMVSS 121 in effect at time of manufacture. **Brake lines shall be Nyclad coated lines to resist corrosion.**	
10. Brakes - Parking	Expandable drum type mounted to rear axle actuated by dash mounted air valve control.	
11. Cold Starting Aids	Engine Block Heater which shall be rated at 750 watts Ambient Air Intake Warmer to assist with cold starting	
12. Cooling System	Heavy-duty down flow radiator with 700 square inch minimum aluminum core construction for optimum engine and transmission cooling. Shall include an Electro-Magnetic On/Off Fan Clutch. Modulated fan to increase fuel mileage and reduce noise. Formulated long-life coolant required. **Lower radiator piping shall be stainless steel.**	
13. Engine	2024 EPA/CARB Emissions Compliant, **250 horsepower** @2400 RPM minimum; **660 ft. lbs. torque** @ 1600 RPM minimum, electronically controlled in-line 6-cylinder engine. Engine must meet all Federal emissions requirements for engines built after January 1, 2024. **(NO EXCEPTIONS)** Full electronic emission controls are required including dash mounted regeneration process operating condition lights. V-8 engines are not acceptable. **(NO EXCEPTIONS)** A fast engine warm up device that is switch activated shall be supplied. The switch shall activate the fast idle function, split injection performance, activate the intake throttle and close the exhaust flap to facilitate engine warm up for heat and fuel efficiency.	Engine Supplied: Horsepower: Torque:
14. Exhaust Brake	OEM installed integral exhaust brake with variable turbo. Exhaust brake must be able to be electronically controlled driver with on/off dash switch.	

15. Exhaust System	To provide sufficient exhaust treatment to a minimum standard of the 2024 EPA emissions standard. Exhaust system to provide Selective Catalytic Reduction (SCR) emissions technology. The SCR system to include an ATD (After Treatment Device), dosing tube with dosing nozzle, and Selective Catalyst Reduction dosing catalyst. System to also include a minimum of 11 gallon Diesel Exhaust Fluid tank equipped with a drain outlet. Dosing lines to self purge upon turning off engine. Access door to be provided for refilling of Diesel Exhaust Fluid tank. Tail pipe shall exit the rear left side beneath the bumper and must include a heat mitigation device. Exhaust shall be effective in reducing exhaust temperatures by at least 200°-250° and be made of stainless steel. **(Bidders may not take exception to this safety requirement)**	
16. Frame	Heavy duty 100,000 PSI frame with 10 1/8" x 3" x 5/16" thick steel minimum. RBM of frame must be 625,000 per frame rail minimum to prevent frame damage	
17. Fuel Tank	100 gallon capacity minimum, meeting all requirements of FMVSS 301. The tank to be located between the frame rails and immediately after of the rear axle. The tank shall also include an underside safety plate for additional protection. The bus floor shall include an access plate for servicing the sending unit of the fuel tank. An outside fuel filler door to be provided. **Fuel tank shall be coated** with a durable high performance Tuff Coat material to guard against abrasion, corrosion and weather. Material shall be applied to the entire exterior of the fuel tank and provide a flexible, textured surface that is resistant to chemicals including road and de-icing treatments.	
18. Fuel/Water Separator	Heated Fuel/Water Separator with Indicator Light & Primer Pump. Shall be rated at 10 Microns.	
19. Hood	Hood shall be equipped with fiberglass tilt hood with easy opening hood for 15# maximum pull effort. Engine splash shield must tilt out of way with the hood needed to gain access for fluid check. Must have removable grille for easy serviceability. Hood must include rubber lined hood pull for driver's comfort. Left side hood, engine air intake with integrated air intake plenum. Hood shall include a two-stage base coat/clear coat finish.	

20. Instrument Panel	Instrument panel shall include the following: • Speedometer/Tripmeter • Tachometer/Hourmeter • Oil pressure gauge • Water temperature gauge • Fuel gauge • Voltmeter • Combination directional signal/headlight dimmer switch on steering column. • Warning lights and buzzers for oil pressure, water temperature, and air pressure if applicable. • Hazard warning switch on the steering column. • Key type starter and engine stop switch. • Electronic RPM control & Cruise Control Switches for RPM control throttle and cruise to be high mount at steering wheel level so driver can operate without removing eyes from road. Instrumentation must provide diagnostic capabilities for body and chassis electrical system.	
21. Rustproofing	All chassis framing, fasteners, and suspension systems are to be painted with a rust inhibiting paint after assembly and before body mounting.	
22. Shock Absorbers	Heavy-duty direct acting double action piston type – two 2 front and two 2 rear.	
23. Springs/Suspension	Front shall be taper leaf type (parabolic) springs, with maintenance free rubber bushings. Minimum capacity of 9,000 lbs. **Rear shall be heavy-duty air-ride suspension** system rated at 21,000 pounds minimum to provide optimum comfort at no load or at full load. System shall include the following: Two (2) air springs Two (2) parabolic leaf spring trailing arms with rubber bushings to eliminate lubrication requirements. Rubber bushed lateral track rod and two heavy duty shock absorbers Dual load sensitive height control valve to maintain constant frame and suspension height.	Spring rating: Front: Rear:
24. Steering	Integral full power TRW THP-60 with a tilt and telescoping steering column and a 18" 2-spoke padded steering wheel.	
25. Tires	11R22.5 14 ply steel belted radial tubeless type tires. Tread Pattern: XZE2 Front & XDN2 Rear	

26. Transmission	Allison PTS 2500 automatic shift control shall be mounted to the right of the steering column. The transmission shall include an external filter and oil to coolant transmission cooler to be mounted in the radiator to provide maximum efficiency and fewest connections and fittings. The transmission fluid fill and check shall be located on the left side of the engine opposite the exhaust manifold. Transmission shall be programmed for **(6) forward gears** for maximum fuel economy performance. **Transynd Synthetic Transmission Fluid is Required.**	Transmission:
27. Wheelbase	Shall be a minimum 279 inches with a maximum curb to curb turning radius of 33'3".	
28. Wheels	Six minimum 8.25" x 22.5" 10-hole disc. All wheels to be interchangeable. May include rim mounted Tire Pressure Monitoring System Sensors on each wheel.	
29. Wiring	**Shall be equipped with fully integrated multiplex electrical system for both body and chassis.** ECMs to be chassis frame mounted for ease of access. Body and chassis wiring to be number and color-coded with matched weatherproof connectors. Nine pin diagnostic to be port located under dash for both body and chassis system. All available circuits protected by a combination of solid-state technology and fuses. All internal wiring shall be routed down the inside of the bus, above the side windows, behind a completely removable cover. This cover shall be removable without loosening the side windows. A complete wiring diagram is to be furnished. All wiring that passes through metal shall be grommeted. Clips are required to support main body wiring harness. Wiring shall be flame retardant.	

Byron Community Unit School District #226
Type-C School Bus Specifications

Middle Lift Door with Wheelchair Lift – Fully Seated 60 Passenger
(Adaptable to 54+1 W/C, or 48 + 2W/C, or 42 + 3 W/C, or 36 + 4 W/C)

The school bus body (or bodies) furnished shall comply with all current state and Federal Motor Vehicle Safety Standards in effect at time of bid. Additionally, Byron C.U.S.D. is requiring the following supplementary specifications. Any exceptions to these specifications should be concisely noted in the space provided (such as number of passenger and/or specifications pertinent to the model of bus you are bidding.) Equivalency of any exceptions to the items requested will be solely at the discretion of Byron C.U.S.D.

Bidding Company Name: _____

Address: _____

_____

Contact: _____

E-Mail Address: _____ Website: _____

Make and Model of Bus Body & Chassis: _____

Passenger Capacity: _____ Kneeroom: **24" Required** Model Year: _____

Item	Body Specifications Minimum Specifications Required	Specifications Furnished. Fill in all spaces, Note & explain equivalents or exceptions.
1. Air Conditioning	Bus shall be equipped with an MCC A/C system as follows: MCC Transport free-blowing air conditioning system which utilizes R-134A refrigerant. System shall be a multi-speed, free-blowing system with adjustable directional louvers producing 126,000 BTU/HR System shall consist of the following components: One (1) IW-10 Evaporator – Rear Flush Bulkhead Mount One (1) IW-4 Evaporator - Front Flush Bulkhead Mount One (1) KR430 Condensers - Roof Mounted Two (2) TM-21 Seltec Compressors Dash Automotive Style Air Conditioning Includes Dash Mounted Thermostatic Temperature Control Module. Refrigerant hoses, fittings and hose clamps must meet SAE J-2604 Type D (Quick Type) specifications.	
2. Aisle	There shall be a minimum 12" wide aisle from the entrance door to all emergency doors. The aisle shall be trimmed with stainless steel aisle strips or no aisle strips are required if the aisle and floor seam are tight to prevent debris from entering underneath flooring	

3. Assist Rail	Back side of stepwell: There shall be a stainless steel assist rail at the entrance door, mounted near the midpoint of the stepwell and extending to near the top of the seat barrier. Front side of stepwell: There shall be an additional stainless steel assist rail at the entrance door. Both assist rails shall be securely attached.	
4. Back-up Alarm	The bus shall be equipped with an automatic back-up alarm installed behind the rear axle. This audible alarm shall be rated at 112dba.	DBA:
5. Bumper	Rear: Shall be formed from 3/16" plate steel and a minimum of 9" wide (high) with a .5369 square inch section modulus. Bumper shall wrap around corners of bus and be attached to the chassis frame. Bumper to be diagonally braced with minimum 4" steel tubing.	
6. Camera System	Minimum Camera Head and Installation Specifications: • Quantity (3) – 3.6MM High Definition Dome Camera with (Infrared LED) and Audio Housing: o Die-cast aluminum housing (powder coated), impact-resistant polycarbonate, anti-glare, scratch-resistant hard coating, UV protected surface mount and no extra bracket required. o 1080p progressive scan resolution o Low-profile, vandal-resistant housing o Infrared LEDs to see in low light o True Day/Night Operation o Back-light compensation improves image quality in high contrast conditions o High-fidelity audio o Warranty: 3-year parts and labor o Installation: (1) 3.6MM camera head shall be mounted on the front bulkhead aimed toward the rear of the vehicle, (1) 3.6MM camera head shall be mounted in the dash area aimed within the wiper sweep, recording the windshield view and (1) 3.6MM camera head shall be mounted in the area of the storage compartment above the driver seat aimed toward the stepwell of the vehicle. • Quantity (2) – 171 Degree Ultra-wide High Definition Camera with (Infrared LED) and Audio Housing: o Die-cast aluminum housing (powder coated), impact-resistant polycarbonate, anti-glare and scratch-resistant hard coating o 1080p progressive scan resolution o Infrared LEDs to see in low light o Ultra-Wide viewing angle o True Day/Night Operation o High-fidelity audio o Warranty: 3-year parts and labor o Installation: (1) 171degree camera head shall be mounted street side in row 5 aimed across and toward the curb side of the vehicle and (1) 171degree camera head shall be mounted street side in row 9 aimed across and toward the curb side of the vehicle.	

6. Camera System (continued)	• Quantity (1) 16MM High Definition Outdoor Wedge Camera with (Infrared LED): o Solid aluminum housing (powder coated), impact-resistant polycarbonate, anti-glare and scratch-resistant hard coating o 720p/1080p high-definition resolution o Rugged IP67-rated weatherproof housing o True Day/Night Operation o Back-light compensation improves image quality in high contrast conditions o Rotation 360degree gimbal for flexible mounting options o Warranty: 3-year parts and labor o Installation: (1) 16MM camera head shall be mounted near the stop arm aimed toward the rear of the vehicle, recording vehicles passing the vehicle. <u>Minimum Digital Video Recorder (DVR) and Installation Specifications:</u> • Quantity (1) DVR shall record up to (6) channels of high-definition (HD) video, up to (6) channels of audio o Recorded Resolution: 1920 x 1080 o Recording at 1080p with HD Cameras o Record Rate – Main: Up to 30 FPS, at 1080p 120FPS Max, Up to 5 FPS all channels o Must have 500 GB to 2 TB (HDD) removable media cartridge with hard drive storage capacity. o Standard computer hard drives or SD style memory cards are NOT acceptable o Must have dimensions no larger than 2.5 x 7 x 9.5 inch (64 x 188 x 241 mm) o Automatic repeat-record when memory device is full (user selectable on-off) o Integrated lock box with removeable locking door, rounded edges, and power painted finish. o Must include Event/Diagnostic Button to mark events for quick retrieval o Requires (5) user customizable full featured signal inputs o Passive GPS system included o Wi-Fi: Built-in 802.11 (AC, AN, BGN) with dual antenna ports o Warranty: 3-year parts and labor • Installation: o DVR: Shall be securely mounted in front bulkhead leaving easy access for hard drive retrieval. o Event/Diagnostic Button: Shall be installed for easy driver access and viewing. o Signal Inputs: Shall be connected and configured to the following vehicle inputs: Warning Lights, Stop Arm, Brake Lights, Left Turn Signal, and Right Turn Signal. o Passive GPS System: Shall be installed to ensure proper signal.	

7. Certificate Holder	Bus shall be equipped with a minimum 4" x 6" transparent certificate and registration holder mounted on the interior front header area of the bus.	
8. Color	Exterior: Shall be National School Bus Yellow. This paint shall be baked-on high solids polyurethane. Trim, including warning light visors (if provided), guard rails, and door handles shall be black. Roof: **Exterior roof panels shall be painted white.** Interior: Shall be light gray baked-on enamel. The area from the bottom of the side windows to the seat rail shall be a clear coated Galvalume steel. All seat frames, dash, heaters, and heater ducts shall have a baked-on black powder coating for scratch resistance. All metal panels on the bus to be painted shall be primed on both sides prior to assembly.	
9. Construction	The bus body shall be constructed to meet or exceed all state and federal school bus requirements in effect at the time of manufacture. *Roof Bows* – The roof bow frame assembly shall consist of continuous, one-piece, 14 gauge rolled channel hat sections, stretch formed and mounted on 30" centers to provide a roll bar type protection. Roof bows shall be 3 1/16" wide with a cross section modulus of $.22^3$. *Roof Crash Rails* – two continuous, one-piece 16 gauges rolled channel roof crash rails extending from first to last roof bow shall be applied internally between interior and exterior sheets. *Floor* – Shall be constructed of 14 gauge Galvalume steel formed with overlapping joints on 30" centers. Floor will be further reinforced with 11 gauge Z-channel crossmembers installed on 10" centers and shall extend the full width of the floor except in wheelhouse area. All floor crossmembers shall be welded to 14 gauge steel floor panels, which extend the full length of the body floor on each side. An interior impact panel shall be one piece continuous welded to floor and welded at each intersection with body bow. There shall be an 11-gauge floor X-brace reinforcement added to wheelhouse area. Wheelhouse shall be stamped 16-gauge one-piece design. *Vertical Headers* – Shall be installed at each roof bow extending from upper side sheet to exterior structural header creating closed box type reinforcement at each roof bow.	
10. Defrosters	Defroster shall keep windshield clear of fog, snow, and ice. The defroster shall include full length windshield defroster channel for even distribution of heated air to the windshield. Two defroster fans mounted over windshield center.	
11. Dimensions	• Minimum exterior width 96" • Minimum interior width 90" • Minimum interior height 78"	

12. Doors	Service: The service door shall be **electric operated with a (2) position switch**, outward opening under control of driver and so designed as to prevent accidental openings. The service door shall be operated via a driver controlled switch. The door shall be located rear of the front wheels on the right side of the bus. Door shall seal against a stationary rubber and bottom step edge. No part of door to ride in the stepwell when closed. Vertical closing edges of the door shall be equipped with flexible material. The door panel shall be a bolted frame. Construction and made of anodized extruded aluminum. The door control mechanism shall be located to the left of the driver on the switch cabinet to prevent accidental opening by students. The control mechanism of the door shall be located above the door and concealed behind a hinged panel for ease of service. Door shall offer a minimum 30" clear opening. All doors shall be equipped with padding at the top edge of each door opening. The pad shall be at least 3" wide and 1" thick and extend the full width of the door opening. Battery Door: Battery compartment door shall be equipped with a keyed locking latch, key shall match fuel door lock and Diesel Exhaust Fluid door if those doors are keyed. Lift Door: The wheelchair lift door shall be a single door hinged with a minimum of (2) strap style greaseable hinges positioned as far forward in the bus as possible. Door must include exterior rub rails painted black. Door shall offer a minimum 50" clear opening.	Type: Operation:
13. Electrical	**Shall be equipped with fully integrated multiplex electrical system for both body and chassis.** ECMs to be chassis frame mounted for ease of access. Body and chassis wiring to be number and color-coded with matched weatherproof connectors. Nine pin diagnostic to be port located under dash for both body and chassis system. All available circuits protected by a combination of solid-state technology and fuses. All internal wiring shall be routed down the inside of the bus, above the side windows, behind a completely removable cover. This cover shall be removable without loosening the side windows. A complete wiring diagram is to be furnished. All wiring that passes through metal shall be grommeted. Clips are required to support main body wiring harness. Wiring shall be flame retardant. **Switches shall be rocker type design and provide "smart switch" technology offering switches that can be repositioned without rewiring or reprogramming of system.** **Shall include (1) 12 Volt Power Outlet** **Shall include a Master Noise Kill Switch**	

14. Emergency Exits	All emergency exits shall conform to FMVSS 217. Emergency Door: There shall be an emergency door located in the center rear of the bus. Door shall be constructed using self-piercing rivet technology to prevent any leak path and shall have a minimum of 38" horizontal opening and a 61" vertical opening. Door to be equipped with an audible buzzer which will sound when latch is moved toward open position. Door to have upper and lower glass. Piano type hinge is not acceptable. Door shall be equipped with locking device and wired to interrupt starting when in locked position. There shall be a device installed on the top of the emergency door that will automatically hold the door in the open position during emergencies and evacuation drills. Side Emergency Doors Are Not Acceptable. Roof Hatches: There shall be two Transpec Triple Value Roof Hatches. Hatches to be equipped with audible buzzer to conform to all state and FMVSS.	
15. Passenger Post Trip Inspection System	The bus shall be equipped with electronic system that is activated by driver using warning light system. The system shall be designed so as to require the driver to walk to the back of the passenger compartment upon completing route to disarm. If not disarmed the headlights will flash and the horn will sound alerting personnel the bus was not checked to ensure all passengers have exited the bus.	
16. Exterior Paneling	Roof: The roof sheets shall be one piece from window line to window line. The roof panels shall be 20 gauge galvanized steel, secured to body bow frame with Saf-T-Bond™ structural adhesives. Fasteners used on top portion of exterior paneling shall be self-piercing rivet technology to prevent any leak path. All roof sheets shall be sealed to prevent leaks. All roof sheets shall be sealed to prevent leaks. The roof shall be reinforced with two 16 gauge roof crash rails applied internally, below the roof panels and welded into the roof bows to provide an extra measure of strength in the overhead areas. Exterior panels shall be primed both sides before assembly for rust prevention. The exterior side panels shall be at least 20 gauge galvanized steel applied to body bow frames with Saf-T-Bond™ structural adhesives and self-piercing rivet technology to prevent any leak path. Lower side skirt (floor level down) shall be quick-change replaceable design installed with threaded fasteners.	
17. Fire Extinguisher	Each bus shall be equipped with one dry type chemical fire extinguisher to meet state standards. The fire extinguisher shall be mounted in an appropriate mounting box to the front of the stepwell or inside a designated area above the driver.	Fire Extinguisher: Size: Location:

18. First Aid Kit & Triangle Flares	Each bus shall be equipped with a metal type first aid kit that meets state standards. The first aid kit shall be securely fastened to the floor on the curb side of the bus to the front of the stepwell or inside a designated area above the driver. Each bus shall be equipped with a set of triangle flares in accordance with FMVSS. The triangle flares shall be securely fastened to the floor on the curb side of the bus to the front of the stepwell or inside a designated area above the driver.	First Aid Kit: Size: Location:
19. Floor Covering	Floor covering shall be heavy-duty gray vinyl. The floor in the passenger compartment shall be covered with .125" thick smooth vinyl. The aisle and entrance steps shall be covered with slip-resistant vinyl. All floor seams must be sealed with a waterproof sealer and covered with a 1" wide 16 gauge rust proof metal stripping or molding. The floor covering along the side walls shall be covered with metal molding so that dirt cannot readily work underneath the edges. 5/8" plywood floor. Wheelhouses shall be covered with a molded one-piece cover extending over entire wheelhouse.	
20. Fuel Tank Opening	Exterior: The exterior fuel fill opening shall be covered with a hinged metal positive locking door. Thumb turn or key. Interior: The interior fuel tank opening shall contain an access plate in the floor located above the fuel tank for servicing fuel tank sender and connections.	
21. Guard Rails	Minimum of four (4) guard rails to be supplied: One (1) 4" rail located below windows One (1) 4" rail located at seat cushion level One (1) 4" rail located near floor level. One (1) 4" rail located at bottom of skirt. Side rails shall be fluted at the bottom to allow for moisture drainage. Rub rails must also physically secure each roof bow flange for additional protection All rub rails to be applied to exterior of body with Saf-T-Bond™ structural adhesive and must meet 60% body joint requirements.	
22. Heater & Defrosters	*Driver's Heater* - Heater shall be installed at front center of vehicle. The heater to be 4-speed, fresh air type. Heater controls shall be electronic, automotive style. A defroster channel shall run the full length of the windshield for maximum defrosting. Heater ducting shall be distributed at floor and dash level. Defroster system shall direct air to Saf-T-Vision™ side windows. *Passenger Heater* – All heaters to be copper coil design type with aluminum fins. Heater motor/fan mechanism shall be serviceable without disturbing heater core. Passenger heaters shall be equipped with replaceable metal filters. Two (2) rear heaters rated 84,000 BTU minimum.	

22. Heater & Defrosters (continued)	The heater ratings shall be based on testing as outlined by SBMI. Heater cutoff valves - two (2) shall be located in the engine compartment. **Heating system shall include a cast housing booster pump and stainless steel lines/plumbing where available**.	
23. Identification	The bus shall be lettered in accordance with all applicable federal and state requirements. Bus shall be equipped with easily changeable route/bus identification sign attached to exterior rear of entrance door.	
24. Instruments Gauges & Switches	The chassis instruments and gauges shall be located within easy view of the seated driver. (Also see "Instruments in Chassis section)	
25. Insulation	Ceiling, sides, and rear panels shall be insulated with a minimum 2" thick blanket-type polyester insulation to properly deaden sound, reduce vibration, and provide a thermal barrier. The insulation shall be fire-resistant of type approved by Underwriters Laboratories, Inc. A sound absorbing molded cover shall be applied in the driver's vestibule area.	
26. Interior	All interior panels shall have lapped and hemmed edges. . Interior side panels to be mar-proof aluminized steel from window bottom to floor. The interior body height from the floor to the roof shall be a minimum of 78". **All interior ceiling panels shall be perforated to act as sound absorbing panels.**	Interior Headroom**:**
27. Lamps & Signals	All lamps shall conform to applicable FMVSS and state laws in effect at time of manufacture. Lights to include: Headlights: LED headlights with amber turn signal/running lights. Wired to alternately flash when stop arm is deployed as per state specification. Cluster: Three (3) L.E.D. Amber front pin type or with protective shields. Three (3) L.E.D. Red rear pin type or with protective shields. Marker: Two (2) L.E.D. Front corners, Two (2) L.E.D. Rear corners and side roof – All either pin type or with protective shields. Stop/Tail: One right rear L.E.D., One left rear L.E.D. with 48 square inches of illuminated surface. Light assembly to be flush mounted to body. Backup: Two (2) L.E.D. lamps with 28 square inches of illuminated surface clear lens, mounted in taillight assembly. Light to be flush mounted to body.	

27. Lamps & Signals (continued)	Warning: (4) Amber & (4) Red L.E.D. lamps shall be flush mounted with Lexan covers and shall be serviceable from the interior of the bus. Stepwell: One (1) interior operating with entrance door One (1) exterior operating with entrance door Dome: One (1) for driver, LED Twelve (12) minimum, (6) rows of (2) L.E.D. Directional Front: Integrated with Headlight Assembly Directional Sides: Two (2) L.E.D. amber, one (1) located behind entrance door below window rail, one (1) located left side, similar position. Directional Rear: One right rear L.E.D., One left rear L.E.D. with 48 square inches of illuminated surface. Light assembly to be flush mounted to body. Reflectors: Two (2) on each side of bus, two (2) on rear school bus and two (2) on lower front of hood. Stop Arm: Transpec with strobing L.E.D. warning lamps to meet FMVSS and state specifications Crossing Arm: Shall be integrated design with operation mechanism located behind curb side of bumper. Crossing gate shall stow above bumper with the use of self stowing guides. Strobe Light: Shall meet FMVSS and state specifications. Lift Door Light: One 4" Clear Light Switched to Illuminate When Lift Door is Open	
28. Mirrors	Interior mirror to be 6" x 30" safety glass with protected edges. Exterior rearview mirrors shall be breakaway style Rosco heated and remote control with Stainless Steel brackets. Exterior crossview mirrors shall be two (2) fender mounted quadrispherical mirrors heated with Stainless Steel brackets. Mirrors shall be mounted on a tripod mount with breakaway design. Chassis hood shall be reinforced with internal backing plates for durability. Mirrors shall comply with FMVSS 111.	
29. Mounting	Bus body shall be mounted to chassis frame in such a manner as to prevent shifting. Two (2) bolts are required on each mounting bracket. Rubber mounting pads reinforced with fiber shall be used to cushion the body on the chassis at every floor crossmember.	
30. Mud Flaps	There shall be rubber mud flaps mounted on the rear side of the front and rear wheel wells.	
31. Radio:	J1939 compatible AM/FM/AUX/WX Radio with Page & 6 Passenger Speakers.	

32. Reflective Tape:	2” tape applied at floor level on each side 1” tape applied around rear perimeter of vehicle School Bus signs to be 8” black letters with reflective background. Also as required by state and federal regulations.	
33. Seats	Passenger Seats: All seats shall comply with all applicable FMVSS and state specification. Seat frames shall be powder coated, non-reflective black. Cushions to be attached to frame as to prevent detachment; yet allow for cleaning by pivoting cushion upright. Upholstery to be heavy duty fireblock gray material. **First two (2) seats on curb side shall include (2) OEM installed ICS/ISO positions per seat.** **First two (3) seats on street side shall include (2) OEM installed ISO positions per seat.** **All remaining seats shall be restraining type seats with lap seat belt restraints included in all seating positions.** Seat Spacing: 24” hip to kneeroom seat spacing is required. Driver’s Seat: Seat Pedestal shall be a **fully suspended air operated** type to be adjusted by fingertip control. Seat shall be deluxe high back with adjustable seat back and **heated** seat cushion and back. Seat back to recline and include adjustable lumbar support. Seat slide shall have minimum 7" adjustment by finger tip control. Cushion shall be black fabric insert and left and right side arm rests. Seat to meet FMVSS 202 and 222. Driver’s seat belt: Shall be a Type II, 3-point belt with an adjustable “D” loop for driver comfort. The belt shall be of ELR design with a push button release and **orange in color** for ease of visibility. Adjustable attachment shall be padded.	
34. Stepwell	3-Step entrance covered with black or gray slip-resistant pebble tread and ribbed rubber white nosing. Diamond plate trim on floor edge to prevent wear. Entrance assist rail to be provided on both front and backside of stepwell. **Stepwell shall be coated** with a durable high performance Tuff Coat material to guard against abrasion, corrosion and weather. Material shall be applied to both the front and back side of the step and provide a flexible, textured surface that is resistant to chemicals including road de-icing treatments.	
35. State Inspection	Bus shall be state of Illinois inspected prior to delivery	
36. Storage	Driver shall have ample storage room including overhead storage compartment above the driver. A cup holder shall be mounted in the dash area. A clipboard holder shall be mounted in the driver compartment area within reach of the driver from the seated position.	
37. Sunvisor	Visor to be 6" x 30" dark acrylic and fully adjustable mounted in adjustable overhead track.	

38. Towing	Two (2) tow eyes/hooks shall be provided at the front of the vehicle and two (2) tow eyes/hooks shall be provided at the rear of the vehicle.	
39. Undercoating	Entire underbody to be completely undercoated with asphalt emulsion water-based undercoating after body to chassis mounting for maximum rust proofing.	
40. Ventilation	Body shall be equipped with a static type, non-adjustable exhaust ventilator located in low pressure area of front roof.	
41. Warranty	School Bus Body & Chassis Warranty: A copy of the body and chassis manufacturer's warranty shall be enclosed with and become a part of any bid which shall receive consideration by the purchaser. Such warranties shall speak specifically to the following: Within the first **5 years** following delivery to the purchaser's location with no mileage limitation: • Failure in major structural components including those caused by deterioration due to rust. • Failure in seat frames and barrier frames. • Failure of the chassis frame including crossmembers. Within the first **3 years/50,000 Miles** following delivery to the purchaser's location - all other original components manufactured by the body and chassis manufacturer, all original components manufactured by outside vendors, and failure of any components manufactured by outside suppliers and included as original equipment by the body and chassis manufacturer.	Warranty:
42. Windows	Two-piece side windows shall be **tinted and tempered** safety glass in flat black frames. The top portion of the side windows shall be capable of being lowered to a position that provides an opening at least 12" high x 25" wide. Windows must be accessible for removal without lowering the wiring harness access panel. All passenger windows shall incorporate 3" aluminum mullion bar design. Rear door glass shall be bonded, flat safety type. Driver's window shall be double-sliding sash with tempered safety glass. All interior and exterior side window frames shall be flat black. *Saf-T-Vision™* - One Saf-T-Vision™ window shall be provided forward of the driver's window and one Saf-T-Vision™ shall be provided below the standard driver's window. Two Saf-T-Vision™ windows shall be provided forward of the entrance door. Stationary glass shall be bonded. Thermopane windows to include the driver's window, top entrance door windows, and the first window behind the entrance door.	

43. Windshield	Windshield shall be one-piece bonded and curved, slanted to reduce glare and breakage and provide maximum vision. The tinted safety plate laminated glass shall provide minimum 3,000 square inches of windshield glass area. **Windshield shall include a 5" tinted band at top.**	
44. Windshield Washer	Dual electric wet arm type windshield washers **with heated wiper fluid reservoir**.	
45. Windshield Wipers	Bus to be equipped with two (2) heavy-duty wet arm type bottom mounted wipers resulting in 1,537 square inches of wiped windshield. Wipers to be intermittent. Wiper motor shall be accessible for service under engine hood.	
46. Wheelchair Lift Interlock	Bus shall have an OEM installed FMVSS 403/404 compliant wheelchair lift and vehicle brake interlock system installed.	
47. Wheelchair Lift	Bus shall have an OEM installed FMVSS 403/404 compliant wheelchair lift installed at Lift Door. Lift shall have a minimum usable platform size of 33" x 51". Padding kit shall be included and installed prior to delivery.	
48. Wheelchair Restraint System	Four (4) Q'Straint QRT360 Model Q-10008 **Slide & Click** mounted retractable wheelchair restraints shall be included with bus. Three (3) driver's side and one (1) curb side forward of the wheelchair lift. **All wheelchair tie-down systems and occupant restraint equipment must be WC18 compliant.** **(NO EXCEPTIONS)** **Seating arrangement shall be designed for up to (4) wheelchair positions. All wheelchair positions shall be installed with quick release STARS mounted seats installed to allow for either ambulatory or wheelchair passengers.** **Six (6) seats on the driver's side shall be installed with the quick release STARS system for easy removal and conversion for up to three (3) future wheelchair positions. Two (2) seats on the curb side shall be installed with the quick release STARS system for easy removal and conversion for (1) future wheelchair position.**	
49. Custom Interior Options	Trash receptacle shall be included and mounted in a location specified by the customer. Broom handle clip shall be included and mounted in a proper location specified by the customer.	

Item	Chassis Specifications Minimum Specifications Required	Specifications Furnished. Fill in all spaces, Note & explain equivalents or exceptions.
Conventional	2028 Model Year New Generation Type C Bus type capable of transporting 60 passengers. GVWR shall not be less than 29,800 lbs.	
1. Air Cleaner	Shall be heavy-duty with a replaceable filter element for ease of maintenance. Engine air filtration system must have integrated hood plenum with two (2) expulsion valves to remove moisture and large contaminants. The air cleaner shall be readily accessible for servicing. The air cleaner shall include an air restriction indicator.	
2. Air System	Shall be equipped with an engine mounted air compressor and include one (1) air accessory tank, one (1) automatic air tank drain valve and dash mounted air pressure gauge. Shall be equipped with a Bendix AD-IP heated air dryer. Dryer shall be a desiccant type dryer located between air compressor and wet air tank for the purpose of removing moisture from the air system.	
3. Alternator	Shall be a Leece-Neville pad mount 12-volt alternator of not less than 320 amps and provide at least 50% of the rated charge at engine idle.	Alternator Make: Size:
4. Auxiliary Heating System	OEM installed Webasto 31,000 BTU auxiliary coolant heating system to provide reduced engine idle time, and lower maintenance costs while delivering auxiliary heat to windshields, windows and bus interior. Shall include a Webasto (7) day programmable timer.	
5. Axle, Front	Shall be heavy-duty "I" beam design. Minimum 10,000 lb. Axle shall be equipped with synthetic lubricant. Turning radius (curb) shall not exceed 33'3". Gross axle weight rating dependent on optional equipment selected up to maximum allowable.	Axle Capacity:
6. Axle, Rear	Shall be a full – floating type and have minimum gross weight capacity of 21,000 lbs. Axle shall be equipped with synthetic lubricated wheel bearings and include a magnetic drain plug. Ratio to be determined for desired performance dependant on bus application and operating conditions.	Axle Capacity:
7. Batteries	Shall be three 12-volt low maintenance, lead antimony type batteries with a minimum of 2100 cold cranking amps. Batteries to be mounted on roller bearing slide out tray. Battery tray to have (2) two positive, spring loaded pins to hold the tray in the closed position. Polyethylene battery cover to be provided. Battery box to be chassis frame rail mounted. **Shall include battery disconnect switch.**	CCAs:

8. Bumper	Front: 3/16" thick heavy-duty front bumper swept back style matching the hood shape **Bumper shall be coated** with a durable high-performance Tuff Coat material to guard against abrasion, corrosion and weather. Material shall be applied to both the front and back side of bumper and provide a flexible, textured surface that is resistant to chemicals including road and de-icing treatments.	
9. Brakes	Shall be Hydraulic Pin-Slide ABS Disc Brakes with **Performance Friction** rotors that include corrosion resistant ABS tone ring. Must be equipped with a dash mounted air actuated parking brake. Service brakes shall meet all requirements of FMVSS 121 in effect at time of manufacture. **Brake lines shall be Nyclad coated lines to resist corrosion.**	
10. Brakes - Parking	Expandable drum type mounted to rear axle actuated by dash mounted air valve control.	
11. Cold Starting Aids	Engine Block Heater which shall be rated at 750 watts Ambient Air Intake Warmer to assist with cold starting	
12. Cooling System	Heavy-duty down flow radiator with 700 square inch minimum aluminum core construction for optimum engine and transmission cooling. Shall include an Electro-Magnetic On/Off Fan Clutch. Modulated fan to increase fuel mileage and reduce noise. Formulated long-life coolant required. **Lower radiator piping shall be stainless steel.**	
13. Engine	2024 EPA/CARB Emissions Compliant, **250 horsepower** @2400 RPM minimum; **660 ft. lbs. torque** @ 1600 RPM minimum, electronically controlled in-line 6-cylinder engine. Engine must meet all Federal emissions requirements for engines built after January 1, 2024. **(NO EXCEPTIONS)** Full electronic emission controls are required including dash mounted regeneration process operating condition lights. V-8 engines are not acceptable. **(NO EXCEPTIONS)** A fast engine warm up device that is switch activated shall be supplied. The switch shall activate the fast idle function, split injection performance, activate the intake throttle and close the exhaust flap to facilitate engine warm up for heat and fuel efficiency.	Engine Supplied: Horsepower: Torque:
14. Exhaust Brake	OEM installed integral exhaust brake with variable turbo. Exhaust brake must be able to be electronically controlled driver with on/off dash switch.	

15. Exhaust System	To provide sufficient exhaust treatment to a minimum standard of the 2024 EPA emissions standard. Exhaust system to provide Selective Catalytic Reduction (SCR) emissions technology. The SCR system to include an ATD (After Treatment Device), dosing tube with dosing nozzle, and Selective Catalyst Reduction dosing catalyst. System to also include a minimum of 11gallon Diesel Exhaust Fluid tank equipped with a drain outlet. Dosing lines to self purge upon turning off engine. Access door to be provided for refilling of Diesel Exhaust Fluid tank. Tail pipe shall exit the rear left side beneath the bumper and must include a heat mitigation device. Exhaust shall be effective in reducing exhaust temperatures by at least 200°-250° and be made of stainless steel. **(Bidders may not take exception to this safety requirement)**	
16. Frame	Heavy duty 50,000 PSI frame with 10 1/8" x 3" x 5/16" thick steel minimum. RBM of frame must be 625,000 per frame rail minimum to prevent frame damage	
17. Fuel Tank	100 gallon capacity minimum, meeting all requirements of FMVSS 301. The tank to be located between the frame rails and immediately after of the rear axle. The tank shall also include an underside safety plate for additional protection. The bus floor shall include an access plate for servicing the sending unit of the fuel tank. An outside fuel filler door to be provided. **Fuel tank shall be coated** with a durable high performance Tuff Coat material to guard against abrasion, corrosion and weather. Material shall be applied to the entire exterior of the fuel tank and provide a flexible, textured surface that is resistant to chemicals including road and de-icing treatments.	
18. Fuel/Water Separator	Heated Fuel/Water Separator with Indicator Light & Primer Pump. Shall be rated at 10 Microns.	
19. Hood	Hood shall be equipped with fiberglass tilt hood with easy opening hood for 15# maximum pull effort. Engine splash shield must tilt out of way with the hood needed to gain access for fluid check. Must have removable grill for easy serviceability. Hood must include rubber lined hood pull for driver's comfort. Left side hood, engine air intake with integrated air intake plenum. Hood shall include a two-stage base coat/clear coat finish.	

20. Instrument Panel	Instrument panel shall include the following: • Speedometer/Tripmeter • Tachometer/Hourmeter • Oil pressure gauge • Water temperature gauge • Fuel gauge • Voltmeter • Combination directional signal/headlight dimmer switch on steering column. • Warning lights and buzzers for oil pressure, water temperature, and air pressure if applicable. • Hazard warning switch on the steering column. • Key type starter and engine stop switch. • Electronic RPM control & Cruise Control Switches for RPM control throttle and cruise to be high mount at steering wheel level so driver can operate without removing eyes from road. Instrumentation must provide diagnostic capabilities for body and chassis electrical system.	
21. Rustproofing	All chassis framing, fasteners, and suspension systems are to be painted with a rust inhibiting paint after assembly and before body mounting.	
22. Shock Absorbers	Heavy-duty direct acting double action piston type – two 2 front and two 2 rear.	
23. Springs/Suspension	Front shall be taper leaf type (parabolic) springs, with maintenance free rubber bushings. Minimum capacity of 9,000 lbs. **Rear shall be heavy-duty air-ride suspension** system rated at 21,000 pounds minimum to provide optimum comfort at no load or at full load. System shall include the following: Two (2) air springs Two (2) parabolic leaf spring trailing arms with rubber bushings to eliminate lubrication requirements. Rubber bushed lateral track rod and two heavy duty shock absorbers Dual load sensitive height control valve to maintain constant frame and suspension height.	Spring rating: Front: Rear:
24. Steering	Integral full power TRW THP-60 with a tilt and telescoping steering column and a 18" 2-spoke padded steering wheel.	
25. Tires	11R22.5 16 ply steel belted radial tubeless type tires. Tread Pattern: XZE2 Front & XDN2 Rear	

26. Transmission	Allison PTS 2500 automatic shift control shall be mounted to the right of the steering column. The transmission shall include an external filter and oil to coolant transmission cooler to be mounted in the radiator to provide maximum efficiency and fewest connections and fittings. The transmission fluid fill and check shall be located on the left side of the engine opposite the exhaust manifold. Transmission shall be programmed for **(6) forward gears** for maximum fuel economy performance. **Transynd Synthetic Transmission Fluid is Required.**	Transmission:
27. Wheelbase	Shall be a minimum 279 inches with a maximum curb to curb turning radius of 33'3".	
28. Wheels	Six minimum 8.25" x 22.5" 10-hole disc. All wheels to be interchangeable. May include rim mounted Tire Pressure Monitoring System Sensors on each wheel.	
29. Wiring	**Shall be equipped with fully integrated multiplex electrical system for both body and chassis.** ECMs to be chassis frame mounted for ease of access. Body and chassis wiring to be number and color-coded with matched weatherproof connectors. Nine pin diagnostic to be port located under dash for both body and chassis system. All available circuits protected by a combination of solid-state technology and fuses. All internal wiring shall be routed down the inside of the bus, above the side windows, behind a completely removable cover. This cover shall be removable without loosening the side windows. A complete wiring diagram is to be furnished. All wiring that passes through metal shall be grommeted. Clips are required to support main body wiring harness. Wiring shall be flame retardant.	

Byron Community Unit School District #226
Type-A School Bus Specifications
29 Passenger School Bus – Gasoline Chassis

The school bus body (or bodies) furnished shall comply with all current state and Federal Motor Vehicle Safety Standards in effect at time of bid. Additionally, Byron C.U.S.D. is requiring the following supplementary specifications. Any exceptions to these specifications should be concisely noted in the space provided. Equivalency of any exceptions to the items requested will be solely at the discretion of Byron C.U.S.D.

Bidding Company Name: _____

Address: _____

_____

Contact: _____

E-Mail Address: _____ Website: _____

Make and Model of Bus Body & Chassis: _____

Passenger Capacity: _____ Kneeroom: **24" Required** Model Year: _____

Item	Body Specifications Minimum Specifications Required	Specifications Furnished. Fill in all spaces, Note & explain equivalents or exceptions.
1. Aisle	There shall be a minimum 12" wide aisle from the entrance door to all emergency doors. The aisle shall be trimmed with stainless steel aisle strips or no aisle strips are required if the aisle and floor seem are tight to prevent debris from entering underneath flooring	
2. Assist Rail	Back side of stepwell: There shall be a stainless steel assist rail at the entrance door, mounted near the midpoint of the stepwell and extending to near the top of the seat barrier. Front side of stepwell: There shall be an additional stainless steel assist rail at the entrance door. Both assist rails shall be securely attached.	
3. Back-up Alarm	The bus shall be equipped with an automatic back-up alarm installed behind the rear axle. This audible alarm shall be rated at 112dba.	DBA:
4. Bumper	Front: Shall be supplied by chassis manufacturer. Rear: Shall be formed from 12-gauge plate steel and a minimum of 9 3/4" wide (high) x 7/64" with a .5369 square inch section modulus. Bumper shall wrap around corners of bus and be attached to the chassis frame. Bumper to be diagonally braced.	

5. Camera System	<u>Minimum Camera Head and Installation Specifications:</u> • Quantity (4) – 3.6MM High Definition Dome Camera with (Infrared LED) and Audio Housing: o Die-cast aluminum housing (powder coated), impact-resistant polycarbonate, anti-glare, scratch-resistant hard coating, UV protected surface mount and no extra bracket required. o 1080p progressive scan resolution o Low-profile, vandal-resistant housing o Infrared LEDs to see in low light o True Day/Night Operation -- High-fidelity audio o Back-light compensation improves image quality in high contrast conditions o Warranty: 3-year parts and labor o Installation: (1) 3.6MM camera head shall be mounted on the front bulkhead aimed toward the rear of the vehicle, (1) 3.6MM camera head shall be mounted street side in row 3 aimed across and toward the curbside of the vehicle, (1) 3.6MM camera head shall be mounted in the dash area aimed within the wiper sweep, recording the windshield view and (1) 3.6MM camera head shall be mounted in the area of the storage compartment above the driver seat aimed toward the stepwell of the vehicle. • Quantity (1) 16MM High Definition Outdoor Wedge Camera with (Infrared LED): o Solid aluminum housing (powder coated), impact-resistant polycarbonate, anti-glare and scratch-resistant hard coating o 720p/1080p high-definition resolution o Rugged IP67-rated weatherproof housing o True Day/Night Operation o Back-light compensation improves image quality in high contrast conditions o Rotation 360degree gimbal for flexible mounting o Warranty: 3-year parts and labor o Installation: (1) 16MM camera head shall be mounted near the stop arm aimed toward the rear of the vehicle, recording vehicles passing the vehicle.	

5. Camera System (continued)	Minimum Digital Video Recorder Specifications: • Quantity (1) DVR shall record up to (6) channels high-definition (HD) video and up to (6) channels of audio o Recorded Resolution: 1920 x 1080 o Recording at 1080p with HD Cameras o Record rate – Main: Up to 15 FPS, at 1080p / Second: Up to 5 FPS all channels o Must have 500 GB to 2 TB (HDD) removable media cartridge with hard drive storage capacity. o Standard computer hard drives or SD style memory cards are NOT acceptable o Must have dimensions no larger than 2.5 x 7 x 9.5 inch (64 x 188 x 241 mm) o Automatic repeat-record when memory device is full (user selectable on-off) o Integrated lock box with removeable locking door, rounded edges, and power painted finish. o Must include Event/Diagnostic Button to mark events for quick retrieval o Requires (5) user customizable signal inputs o Passive GPS system & Wi-Fi 802.11 included o Warranty: 3-year parts and labor Minimum Digital Video Recorder Installation Specifications: • Installation: o DVR: Shall be securely mounted in storage compartment above the driver seat leaving easy access for hard drive retrieval. o Event/Diagnostic Button: Shall be installed for easy driver access and viewing. o Signal Inputs: Shall be connected and configured to the following vehicle inputs: Warning Lights, Stop Arm, Brake Lights, Left Turn Signal, and Right Turn Signal. o Passive GPS System: Shall be installed to ensure proper signal	
6. Certificate Holder	Bus shall be equipped with a minimum 4” x 6” transparent certificate and registration holder mounted on the interior front header area of the bus.	
7. Color	Exterior: Shall be National School Bus Yellow. This paint shall be baked-on high solids polyurethane. Trim, including guard rails, warning light visors, and door handles shall be black. Roof: **Exterior roof panels shall be painted white.** Interior: Shall be light gray baked-on enamel. The area from the bottom of the side windows to the seat rail shall be a clear coated Galvalume steel. All seat frames, dash, heaters, and heater ducts shall have a baked-on black powder coating for scratch resistance. All metal panels on the bus to be painted shall be primed on both sides prior to assembly.	

8. Construction	The bus body shall be constructed to meet or exceed all state and federal school bus requirements in effect at the time of manufacture. Internal skeletal structure shall be welded. Screws, rivets, or huck bolts are not acceptable. Roof Bows: The roof bow frame assembly shall consist of 16-gauge hat section bows extending from the bottom of skirting on one side to the other. Bow frames shall be continuous, one-piece, 16-gauge rolled channel hat sections 1 7/8" deep, mounted on 28 3/4" centers to provide a rollbar type protection. Floor: Floor shall be constructed of 16-gauge high tensile steel "C" channel joists (horizontally positioned) the entire width of the bus at each rafter location with four (4) strategically placed longitudinal reinforcements for seat mounting. These joists shall be covered with 14 gauge .0625 thick steel corrugated floor sheets. There shall be a plywood sub-floor of a nominal 1/2" thickness minimum.	
9. Defrosters	Defroster shall be sufficient capacity to keep windshield clear of fog, snow, and ice. The defroster shall include full length windshield defroster channel for even distribution of heated air to the windshield.	
10. Doors	Service: The service door shall be **electric operated**, outward opening under control of driver and so designed as to prevent accidental openings. Door control mechanism shall be located overhead of door and concealed behind a removable panel. Door shall seal against a stationary rubber and bottom step edge. No part of door to ride in the stepwell when closed. Vertical closing edges of door shall be equipped with flexible material. Door hinges shall be greasable type. Minimum clear opening shall be 24" x 72". All doors shall be equipped with padding at the top edge of each door opening. The pad shall be at least 3" wide and 1" thick and extend the full width of the door opening. The service door and side and rear emergency doors shall contain drainage holes in the bottom of the door to allow for drainage of condensation and to deter corrosion.	Type: Operation:
11. Electrical	The electrical system shall be 12-volts. The wiring shall be color and number coded and a wiring diagram shall be furnished with each bus. Interior body wiring shall be routed down the side of the bus, above the side windows, behind a completely removable cover. This cover shall be removable without loosening the side windows. All wires shall be insulated and protected from external damage. The body wires shall be securely fastened to a metal stringer, which runs from the front of the passenger compartment to the back, behind the wiring cover. The wires shall be fastened at intervals of not more than 24". **Shall include a Master Noise Kill Switch**	

12. Passenger Post Trip Inspection System	The bus shall be equipped with electronic system that is activated by driver using warning light system. The system shall be designed so as to require the driver to walk to the back of the passenger compartment upon completing route to disarm. If not disarmed the headlights will flash and the horn will sound alerting personnel the bus was not checked to ensure all passengers have exited the bus. **Driver's door must be integrated in the system and not allow the driver to exit that door without disarming.**	
13. Emergency Exits	All emergency exits shall conform to FMVSS 217. Emergency Door: There shall be an emergency door located in the center rear of the bus. Door to be equipped with an audible buzzer which will sound when latch is moved toward open position. This door shall have a minimum of 33" horizontal opening and a 54" vertical opening. Door to have upper and lower glass. Door hinges shall be greasable type. Piano type hinge **is not** acceptable. Door shall be equipped with locking device and wired to interrupt starting when in locked position.	
14. Exterior Paneling	Roof: The roof panels shall be double-lapped, 22 gauge .040 thick aluminum, riveted to each flange of the body bow frame. The roof sheets shall be pieced in three sections, two laterally and one lengthwise over seams. All roof sheets shall be sealed. The roof shall be reinforced with two 16-gauge roof rails applied externally, riveted through the roof panels and into the roof bows to provide an extra measure of strength in the overhead areas. Exterior panels shall be primed both sides before assembly for rust prevention. Exterior Side Panels: shall be 16 gauge .050" thick smooth aluminum o, double-riveted to body bow frames. The side panels shall be primed on both sides before assembly.	
15. Fire Extinguisher	Each bus shall be equipped with one dry type chemical fire extinguisher to meet state standards. The fire extinguisher shall be mounted in an appropriate mounting box in front of the stepwell area or overhead of the driver.	Fire Extinguisher: Size: Location:
16. First Aid Kit & Triangle Flares	Each bus shall be equipped with a metal type first aid kit which meets state standards. The first aid kit shall be securely fastened in front of the stepwell area or overhead of the driver. Each bus shall be equipped with a set of triangle flares in accordance with FMVSS. The triangle flares shall be securely in front of the stepwell area or overhead of the driver.	First Aid Kit: Size: Location:

17. Floor Covering	Floor covering shall be heavy-duty gray marbleized vinyl. The floor under the seats, over the wheelhouses, on the side of the wheelhouses, and in the driver's compartment shall be covered with smooth vinyl. The aisle and entrance steps shall be covered with slip-resistant ribbed vinyl. All floor seams must be sealed with a waterproof sealer and covered with a 1" wide 16 gauge rust proof metal stripping or molding. The floor covering along the side walls shall be covered with metal molding so that dirt cannot readily work underneath the edges. 5/8" plywood floor.	
18. Fuel Tank Opening	Exterior: As supplied by the chassis manufacturer.	
19. Guard Rails	Minimum of four (4) guard rails to be supplied: One 4 1/4" located below windows One 4 1/4" located at seat cushion level One 4 1/4" located at floor level One 4 1/4" located at skirt level Two 2 15/16" roof rails extending the length of the passenger compartment. Side rails shall be fluted at the bottom to allow for moisture drainage.	
20. Heater & Defrosters	Front: Supplied by the chassis manufacturer. All passenger compartment heaters to be easily serviceable with cleanable air filters. All passenger compartment heaters shall be of the copper coil design type with aluminum fins. If more than one heater is used, they shall be plumbed in parallel to obtain the maximum heater output.	
21. Identification	The bus shall be lettered in accordance with all applicable federal and state requirements. Bus shall be equipped with easily changeable route/bus identification sign attached to exterior rear of entrance door.	
22. Instruments Gauges & Switches	The body switches shall be located above the windshield in front of the driver's seat and be forward facing for quick and easy access. The chassis instruments and gauges shall be located within easy view of the seated driver.	
23. Insulation	Ceiling, sides, and rear panels shall be insulated with a minimum 2" thick blanket-type polyester insulation to properly deaden sound, reduce vibration, and provide a thermal barrier. The insulation shall be fire-resistant of type approved by Underwriters Laboratories, Inc.	

24. Interior	All interior panels shall have lapped edges. Interior side panels to be 22 gauge .025" thick embossed aluminum and shall extend from the window line to the floor. <u>Engine Cover:</u> Shall be insulated and sealed to shield the driver from noise, heat and fumes. The cover shall be held in place by positive fasteners as supplied by the chassis manufacturers. Interior headroom shall be a minimum 73".	Interior Headroom:
25. Lamps & Signals	All lamps shall conform to applicable FMVSS and state laws in effect at time of manufacture. Lights to include: Headlights: Single sealed beam halogen (42 watt low beam/65 watt high beam) Wired to alternately flash when stop arm is deployed as per state specification. Cluster: Three (3) L.E.D. Amber front pin type or with protective shields Three (3) L.E.D. Red rear pin type or with protective shields Marker: Two (2) L.E.D. Front corners, Two (2) L.E.D. Rear corners and side roof – All either pin type of with protective shields Stop/Tail: One right rear L.E.D., One left rear L.E.D. with 48 square inches of illuminated surface. Light assembly to be flush mounted to body. Two (2) L.E.D. Red Rear 4" Minimum Backup: Two (2) L.E.D. lamps with 28 square inches of illuminated surface clear lens, mounted in taillight assembly. Light to be flush mounted. Warning: Four (4) Amber & Four (4) Red halogen lamps shall be provided to meet latest state and Federal Motor Vehicle Safety Standards Stepwell: One (1) interior operating with entrance door One (1) exterior operating with entrance door Dome: One (1) for driver Six (6) minimum, (3) rows of (2) Chassis Side/Fender Mount Directional Lights: One right fender mount, One left fender mount with 16 square inches of illumination each Directional Sides: Two (2) L.E.D. amber, one (1) located behind entrance door below window rail, one (1) located left side, similar position Reflectors: Two (2) on each side of bus, two (2) on rear school bus and two (2) on front of bus body. Stop Arm: Transpec Solid State with strobing L.E.D. warning lamps to meet FMVSS and state specifications Crossing Arm: Specialty Solid State Motor with Poly Arm to meet FMVSS and state requirements Strobe Light: Shall meet FMVSS and State Specifications	

26. Mirrors	Interior mirror to be 6" x 30" safety glass with protected edges. Exterior rearview mirrors shall be Rosco heated and hand adjustable with Stainless Steel brackets. Exterior crossview mirrors shall be two (2) quadrispherical mirrors heated with Stainless Steel brackets. One (1) left and one (1) right fender-mounted. Mirrors shall comply with FMVSS 111.	
27. Mounting	Bus body shall be mounted to chassis frame in such a manner as to prevent shifting. Mounting to chassis shall be with frame risers and 1/2" bolts. The body must be completely sealed where the body and the chassis cab are joined.	
28. Mud Flaps	There shall be rubber mud flaps mounted on the rear side of the front and rear wheel wells.	
29. Radio	AM/FM with 4 Passenger Speakers	
30. Reflective Tape	2” tape applied at floor level on side 1” tape applied around rear perimeter of vehicle School Bus signs to be 8” black letters with reflective background. Also as required by state and federal regulations around emergency exit windows, doors and hatches.	
31. Seats	Passenger Seats: All seats shall comply with all applicable FMVSS and state specification. Seat frames shall be powder coated, non-reflective black. Cushions to be attached to frame so as to prevent detachment yet allow for cleaning by pivoting cushion upright. Upholstery to be heavy duty fireblock gray material. **Seats shall be restraining type seats with lap belts installed. One seat with ISO latch is required.** Seat Spacing: 24” hip to kneeroom seat spacing is required. Driver’s seat: Shall be adjustable high-back seat supplied by the chassis manufacturer. Driver’s seat belt: Shall be a Type II, 3-point belt as supplied by the chassis manufacturer. **Orange in color.**	

32. Stepwell	The stepwell shall include two (2) full-depth steps. The entrance and egress area including the top landing area adjacent to the driver's seat shall be unobstructed by the engine cover or other components. The maximum distance from the first step to the ground shall be no greater than 11". **Stepwell shall be coated** with a durable high performance Tuff Coat material to guard against abrasion, corrosion and weather. Material shall be applied to both the front and back side of the step and provide a flexible, textured surface that is resistant to chemicals including road de-icing treatments.	
33. Storage Compartment	An overhead storage compartment shall be located above the windshield. Compartment door shall be hinged at top.	
34. State Inspection	Bus shall be state of Illinois inspected prior to delivery	
35. Sunvisor	Visor to be supplied by the chassis manufacturer.	
36. Switch Panel	Switches for the body electrical components shall be mounted above the driver over the windshield. Rocker type switches are to be supplied. The switches shall provide with L.E.D. backlit illuminated lenses, international symbols and labeling for the appropriate functions.	
37. Towing	Two (2) tow eyes/hooks shall be provided by the chassis manufacturer on the front of the vehicle and two (2) tow eyes/hooks shall be provided at the rear of the vehicle.	
38. Undercoating	Entire underbody to be completely undercoated with asphalt emulsion water-based undercoating after body to chassis mounting for maximum rust proofing.	
39. Ventilation	Body shall be equipped with a static type, non-adjustable exhaust ventilator located in low pressure area of front roof. A driver-controlled fresh air vent shall be provided.	

40. Warranty	<u>School Bus Body Warranty:</u> A copy of the body manufacturer's warranty shall be enclosed with and become a part of any bid which shall receive consideration by the purchaser. Such warranties shall speak specifically to the following: Within the first **5 years** following delivery to the purchaser's location with no mileage limitation: • Failure in major structural components including those caused by deterioration due to rust. • Failure in seat frames and barrier frames. Within the first **3 years** following delivery to the purchaser's location with no mileage limitation - all other original components manufactured by the body manufacturer. Within **3 year** following delivery to the purchaser's location with no mileage limitation - all original components manufactured by outside vendors. Where the outside supplier's warranty exceeds that of the body manufacturers, then such warranty shall be stated and shall apply.	
41. Windows	2-piece side windows to be of safety tempered glass in flat black, powder-coated aluminum frames. The top portion of the side windows shall be capable of being lowered to a position that provides an opening at least 12" x 28". Windows must be accessible for removal without lowering the wiring harness access panel. All glass to be tinted. Thermopane windows to include the top entrance door windows, and the first window behind the entrance door.	
42. Windshield	As supplied by the chassis manufacturer.	
43. Windshield Washer	As supplied by the chassis manufacturer **with heated wiper fluid reservoir**.	
44. Windshield Wipers	As supplied by the chassis manufacturer.	
45. Custom Interior Options	Trash receptacle shall be included and mounted in a location specified by the customer. Broom handle clip shall be included and mounted in a proper location specified by the customer.	

Item	Chassis Specifications Minimum Specifications Required	Specifications Furnished. Fill in all spaces, Note & explain equivalents or exceptions.
Chassis Type	2026/2027 Model Year Dual Rear Wheel Chassis GVWR not less than 12,300 lbs.	
1. Alternator	Shall be a 12-volt alternator of not less than 220 amps.	
2. Axle, Front	Twin-I-Beam IFS - Minimum 4,300 lbs.	Axle Capacity:
3. Axle, Rear	Dana Full Floating - Minimum 8,600 lbs. 3.73 Axle Ratio	Axle Capacity:
4. Batteries	Shall be dual 12-volt low maintenance, lead antimony type battery with a minimum of 770 cold cranking amps.	CCAs:
5. Brakes	Shall be Four Wheel Hydraulic Disc with Four Wheel ABS.	
6. Cruise Control	Chassis shall include OEM Electronic Cruise Control	
7. Driver Door Step	An external step shall be installed underneath the driver door to assist driver with entrance/exit as well as shield debris from the bus body.	
8. Engine	6.6L V8 Gasoline with Electronic Fuel Injection 401 Horsepower @ 5,200 RPM 464 Lb.-Ft. Torque @ 4,000 RPM	Engine Supplied: Horsepower: Torque:
9. Exhaust System	Single non-catalytic muffler with 3" tailpipe exiting the rear below the bumper.	
10. Fuel Tank	33 Gallon capacity minimum, located behind the rear axle, meeting all requirements of FMVSS 301. An outside fuel filler to be provided.	
11. Shock Absorbers	1.38” Heavy Duty Gas-Type, Front & Rear	
12. Springs/Suspension	Front: shall be independent coil springs with stabilizer bar. Rear: shall be heavy-duty multi-leaf to provide optimum comfort at no load or at full load.	
13. Steering	Tilt Steering Wheel shall be provided.	
14. Transmission	(6) Speed Automatic with Overdrive, Electronically Controlled with Overdrive and Tow/Haul Mode. Shall Include Cruise Grade Braking and Powertrain Grade Braking	
15. Wheelbase	159” Minimum	

Byron Community Unit School District #226
Type-A School Bus Specifications

Fully Seated 21 Passenger Flat Floor Wheelchair Bus – Gasoline Chassis
(Adaptable to 15+1 W/C, 12+2 W/C or 6+3 W/C)

The school bus body (or bodies) furnished shall comply with all current state and Federal Motor Vehicle Safety Standards in effect at time of bid. Additionally, Byron C.U.S.D. is requiring the following supplementary specifications. Any exceptions to these specifications should be concisely noted in the space provided. Equivalency of any exceptions to the items requested will be solely at the discretion of Byron C.U.S.D.

Bidding Company Name: _____

Address: _____

_____

Contact: _____

E-Mail Address: _____ Website: _____

Make and Model of Bus Body & Chassis: _____

Passenger Capacity: _____ Kneeroom: **24" Required** Model Year: _____

Item	Body Specifications Minimum Specifications Required	Specifications Furnished. Fill in all spaces, Note & explain equivalents or exceptions.
1. Air Conditioning	Carrier AC-5W13T 53,000 BTU Air Conditioning System Free Blow A/C System that ties into Chassis OEM System System Consists of: (1) IW-1 Evaporator – Rear Bulkhead (1) CM-3 Condenser – Skirt Mounted	
2. Aisle	There shall be a minimum 12" wide aisle from the entrance door to all emergency doors. The aisle shall be trimmed with stainless steel aisle strips or no aisle strips are required if the aisle and floor seam are tight to prevent debris from entering underneath flooring	
3. Assist Rail	Back side of stepwell: There shall be a stainless steel assist rail at the entrance door, mounted near the midpoint of the stepwell and extending to near the top of the seat barrier. Front side of stepwell: There shall be an additional stainless steel assist rail at the entrance door. Both assist rails shall be securely attached.	
4. Back-up Alarm	The bus shall be equipped with an automatic back-up alarm installed behind the rear axle. This audible alarm shall be rated at 112dba.	DBA:

5. Bumper	Front: Shall be supplied by chassis manufacturer. Rear: Shall be formed from 12-gauge plate steel and a minimum of 9 3/4" wide (high) x 7/64" with a .5369 square inch section modulus. Bumper shall wrap around corners of bus and be attached to the chassis frame. Bumper to be diagonally braced.	
6. Camera System	Minimum Camera Head and Installation Specifications: • Quantity (4) – 3.6MM High Definition Dome Camera with (Infrared LED) and Audio Housing: o Die-cast aluminum housing (powder coated), impact-resistant polycarbonate, anti-glare, scratch-resistant hard coating, UV protected surface mount and no extra bracket required. o 1080p progressive scan resolution o Low-profile, vandal-resistant housing o Infrared LEDs to see in low light o True Day/Night Operation -- High-fidelity audio o Back-light compensation improves image quality in high contrast conditions o Warranty: 3-year parts and labor o Installation: (1) 3.6MM camera head shall be mounted on the front bulkhead aimed toward the rear of the vehicle, (1) 3.6MM camera head shall be mounted street side in row 3 aimed across and toward the curbside of the vehicle, (1) 3.6MM camera head shall be mounted in the dash area aimed within the wiper sweep, recording the windshield view and (1) 3.6MM camera head shall be mounted in the area of the storage compartment above the driver seat aimed toward the stepwell of the vehicle. • Quantity (1) 16MM High Definition Outdoor Wedge Camera with (Infrared LED): o Solid aluminum housing (powder coated), impact-resistant polycarbonate, anti-glare and scratch-resistant hard coating o 720p/1080p high-definition resolution o Rugged IP67-rated weatherproof housing o True Day/Night Operation o Back-light compensation improves image quality in high contrast conditions o Rotation 360degree gimbal for flexible mounting o Warranty: 3-year parts and labor o Installation: (1) 16MM camera head shall be mounted near the stop arm aimed toward the rear of the vehicle, recording vehicles passing the vehicle.	

6. Camera System (continued)	Minimum Digital Video Recorder Specifications: • Quantity (1) DVR shall record up to (6) channels high-definition (HD) video and up to (6) channels of audio o Recorded Resolution: 1920 x 1080 o Recording at 1080p with HD Cameras o Record rate – Main: Up to 15 FPS, at 1080p / Second: Up to 5 FPS all channels o Must have 500 GB to 2 TB (HDD) removable media cartridge with hard drive storage capacity. o Standard computer hard drives or SD style memory cards are NOT acceptable o Must have dimensions no larger than 2.5 x 7 x 9.5 inch (64 x 188 x 241 mm) o Automatic repeat-record when memory device is full (user selectable on-off) o Integrated lock box with removeable locking door, rounded edges, and power painted finish. o Must include Event/Diagnostic Button to mark events for quick retrieval o Requires (5) user customizable signal inputs o Passive GPS system & Wi-Fi 802.11 included o Warranty: 3-year parts and labor Minimum Digital Video Recorder Installation Specifications: • Installation: o DVR: Shall be securely mounted in storage compartment above the driver seat leaving easy access for hard drive retrieval. o Event/Diagnostic Button: Shall be installed for easy driver access and viewing. o Signal Inputs: Shall be connected and configured to the following vehicle inputs: Warning Lights, Stop Arm, Brake Lights, Left Turn Signal, and Right Turn Signal. o Passive GPS System: Shall be installed to ensure proper signal	
7. Certificate Holder	Bus shall be equipped with a minimum 4” x 6” transparent certificate and registration holder mounted on the interior front header area of the bus.	
8. Color	Exterior: Shall be National School Bus Yellow. This paint shall be baked-on high solids polyurethane. Trim, including guard rails, warning light visors, and door handles shall be black. Roof: **Exterior roof panels shall be painted white.** Interior: Shall be light gray baked-on enamel. The area from the bottom of the side windows to the seat rail shall be a clear coated Galvalume steel. All seat frames, dash, heaters, and heater ducts shall have a baked-on black powder coating for scratch resistance. All metal panels on the bus to be painted shall be primed on both sides prior to assembly.	

9. Construction	The bus body shall be constructed to meet or exceed all state and federal school bus requirements in effect at the time of manufacture. Internal skeletal structure shall be welded. Screws, rivets, or huck bolts are not acceptable. Roof Bows: The roof bow frame assembly shall consist of 16-gauge hat section bows extending from the bottom of skirting on one side to the other. Bow frames shall be continuous, one-piece, 16-gauge rolled channel hat sections 1 7/8" deep, mounted on 28 3/4" centers to provide a rollbar type protection. Floor: Floor shall be constructed of 16-gauge high tensile steel "C" channel joists (horizontally positioned) the entire width of the bus at each rafter location with four (4) strategically placed longitudinal reinforcements for seat mounting. These joists shall be covered with 14 gauge .0625 thick steel corrugated floor sheets. There shall be a plywood sub-floor of a nominal 1/2" thickness minimum.	
10. Defrosters	Defroster shall be sufficient capacity to keep windshield clear of fog, snow, and ice. The defroster shall include full length windshield defroster channel for even distribution of heated air to the windshield.	
11. Doors	Service: The service door shall be **electric operated**, outward opening under control of driver and so designed as to prevent accidental openings. Door control mechanism shall be located overhead of door and concealed behind a removable panel. Door shall seal against a stationary rubber and bottom step edge. No part of door to ride in the stepwell when closed. Vertical closing edges of door shall be equipped with flexible material. Door hinges shall be greasable type. Minimum clear opening shall be 24" x 72". All doors shall be equipped with padding at the top edge of each door opening. The pad shall be at least 3" wide and 1" thick and extend the full width of the door opening. The service door and side and rear emergency doors shall contain drainage holes in the bottom of the door to allow for drainage of condensation and to deter corrosion. Driver's: Door shall be supplied by the chassis manufacturer, located to the left of the driver's seat.	Type: Operation:
12. Electrical	The electrical system shall be 12-volts. The wiring shall be color and number coded and a wiring diagram shall be furnished with each bus. Interior body wiring shall be routed down the side of the bus, above the side windows, behind a completely removable cover. This cover shall be removable without loosening the side windows. All wires shall be insulated and protected from external damage. The body wires shall be securely fastened to a metal stringer, which runs from the front of the passenger compartment to the back, behind the wiring cover. The wires shall be fastened at intervals of not more than 24". **Shall include a Master Noise Kill Switch**	

13. Passenger Post Trip Inspection System	The bus shall be equipped with electronic system that is activated by driver using warning light system. The system shall be designed so as to require the driver to walk to the back of the passenger compartment upon completing route to disarm. If not disarmed the headlights will flash and the horn will sound alerting personnel the bus was not checked to ensure all passengers have exited the bus. **Driver's door must be integrated in the system and not allow the driver to exit that door without disarming.**	
14. Emergency Exits	All emergency exits shall conform to FMVSS 217. Emergency Door: There shall be an emergency door located in the center rear of the bus. Door to be equipped with an audible buzzer which will sound when latch is moved toward open position. This door shall have a minimum of 33" horizontal opening and a 54" vertical opening. Door to have upper and lower glass. Door hinges shall be greasable type. Piano type hinge **is not** acceptable. Door shall be equipped with locking device and wired to interrupt starting when in locked position.	
15. Exterior Paneling	Roof: The roof panels shall be double-lapped, 22 gauge .040 thick aluminum, riveted to each flange of the body bow frame. The roof sheets shall be pieced in three sections, two laterally and one lengthwise over seams. All roof sheets shall be sealed. The roof shall be reinforced with two 16-gauge roof rails applied externally, riveted through the roof panels and into the roof bows to provide an extra measure of strength in the overhead areas. Exterior panels shall be primed both sides before assembly for rust prevention. Exterior Side Panels: shall be 16 gauge .050" thick smooth aluminum o, double-riveted to body bow frames. The side panels shall be primed on both sides before assembly.	
16. Fire Extinguisher	Each bus shall be equipped with one dry type chemical fire extinguisher to meet state standards. The fire extinguisher shall be mounted in an appropriate mounting box in front of the stepwell area or overhead of the driver.	Fire Extinguisher: Size: Location:
17. First Aid Kit & Triangle Flares	Each bus shall be equipped with a metal type first aid kit which meets state standards. The first aid kit shall be securely fastened in front of the stepwell area or overhead of the driver. Each bus shall be equipped with a set of triangle flares in accordance with FMVSS. The triangle flares shall be securely in front of the stepwell area or overhead of the driver.	First Aid Kit: Size: Location:

18. Floor Covering	Floor covering shall be heavy-duty gray marbleized vinyl. The floor under the seats, over the wheelhouses, on the side of the wheelhouses, and in the driver's compartment shall be covered with smooth vinyl. The aisle and entrance steps shall be covered with slip-resistant ribbed vinyl. All floor seams must be sealed with a waterproof sealer and covered with a 1" wide 16 gauge rust proof metal stripping or molding. The floor covering along the side walls shall be covered with metal molding so that dirt cannot readily work underneath the edges. 5/8" plywood floor.	
19. Fuel Tank Opening	Exterior: As supplied by the chassis manufacturer.	
20. Guard Rails	Minimum of four (4) guard rails to be supplied: One 4 1/4" located below windows One 4 1/4" located at seat cushion level One 4 1/4" located at floor level One 4 1/4" located at skirt level Two 2 15/16" roof rails extending the length of the passenger compartment. Side rails shall be fluted at the bottom to allow for moisture drainage.	
21. Heater & Defrosters	Front: Supplied by the chassis manufacturer. All passenger compartment heaters to be easily serviceable with cleanable air filters. All passenger compartment heaters shall be of the copper coil design type with aluminum fins. If more than one heater is used, they shall be plumbed in parallel to obtain the maximum heater output.	
22. Identification	The bus shall be lettered in accordance with all applicable federal and state requirements. Bus shall be equipped with easily changeable route/bus identification sign attached to exterior rear of entrance door.	
23. Instruments Gauges & Switches	The body switches shall be located above the windshield in front of the driver's seat and be forward facing for quick and easy access. The chassis instruments and gauges shall be located within easy view of the seated driver.	
24. Insulation	Ceiling, sides, and rear panels shall be insulated with a minimum 2" thick blanket-type polyester insulation to properly deaden sound, reduce vibration, and provide a thermal barrier. The insulation shall be fire-resistant of type approved by Underwriters Laboratories, Inc.	

25. Interior	All interior panels shall have lapped edges. Interior side panels to be 22 gauge .025" thick embossed aluminum and shall extend from the window line to the floor. <u>Engine Cover:</u> Shall be insulated and sealed to shield the driver from noise, heat and fumes. The cover shall be held in place by positive fasteners as supplied by the chassis manufacturers. Interior headroom shall be a minimum 73".	Interior Headroom:
26. Lamps & Signals	All lamps shall conform to applicable FMVSS and state laws in effect at time of manufacture. Lights to include: Headlights: Single sealed beam halogen (42 watt low beam/65 watt high beam) Wired to alternately flash when stop arm is deployed as per state specification. Cluster: Three (3) L.E.D. Amber front pin type or with protective shields Three (3) L.E.D. Red rear pin type or with protective shields Marker: Two (2) L.E.D. Front corners, Two (2) L.E.D. Rear corners and side roof – All either pin type of with protective shields Stop/Tail: One right rear L.E.D., One left rear L.E.D. with 48 square inches of illuminated surface. Light assembly to be flush mounted to body. Two (2) L.E.D. Red Rear 4" Minimum Backup: Two (2) L.E.D. lamps with 28 square inches of illuminated surface clear lens, mounted in taillight assembly. Light to be flush mounted. Warning: Four (4) Amber & Four (4) Red halogen lamps shall be provided to meet latest state and Federal Motor Vehicle Safety Standards Stepwell: One (1) interior operating with entrance door One (1) exterior operating with entrance door Dome: One (1) for driver Six (6) minimum, (3) rows of (2) Chassis Side/Fender Mount Directional Lights: One right fender mount, One left fender mount with 16 square inches of illumination each Directional Sides: Two (2) L.E.D. amber, one (1) located behind entrance door below window rail, one (1) located left side, similar position Reflectors: Two (2) on each side of bus, two (2) on rear school bus and two (2) on front of bus body. Stop Arm: Transpec Solid State with strobing L.E.D. warning lamps to meet FMVSS and state specifications Crossing Arm: Specialty Solid State Motor with Poly Arm to meet FMVSS and state requirements Strobe Light: Shall meet FMVSS and State Specifications	

27. Mirrors	Interior mirror to be 6" x 30" safety glass with protected edges. Exterior rearview mirrors shall be Rosco heated and hand adjustable with Stainless Steel brackets. Exterior crossview mirrors shall be two (2) quadrispherical mirrors heated with Stainless Steel brackets. One (1) left and one (1) right fender-mounted. Mirrors shall comply with FMVSS 111.	
28. Mounting	Bus body shall be mounted to chassis frame in such a manner as to prevent shifting. Mounting to chassis shall be with frame risers and 1/2" bolts. The body must be completely sealed where the body and the chassis cab are joined.	
29. Mud Flaps	There shall be rubber mud flaps mounted on the rear side of the front and rear wheel wells.	
30. Radio	AM/FM with 4 Passenger Speakers	
31. Reflective Tape	2” tape applied at floor level on side 1” tape applied around rear perimeter of vehicle School Bus signs to be 8” black letters with reflective background. Also as required by state and federal regulations around emergency exit windows, doors and hatches.	
32. Seats	Passenger Seats: All seats shall comply with all applicable FMVSS and state specification. Seat frames shall be powder coated, non-reflective black. Cushions to be attached to frame so as to prevent detachment, yet allow for cleaning by pivoting cushion upright. Upholstery to be heavy duty fireblock gray material. **Seats shall be restraining type seats with lap belts installed. One seat with ISO latch is required.** Seat Spacing: 24” hip to kneeroom seat spacing is required. Driver’s seat: Shall be adjustable high-back seat supplied by the chassis manufacturer. Driver’s seat belt: Shall be a Type II, 3-point belt as supplied by the chassis manufacturer. **Orange in color.**	

33. Stepwell	The stepwell shall include two (2) full-depth steps. The entrance and egress area including the top landing area adjacent to the driver's seat shall be unobstructed by the engine cover or other components. The maximum distance from the first step to the ground shall be no greater than 11". **Stepwell shall be coated** with a durable high performance Tuff Coat material to guard against abrasion, corrosion and weather. Material shall be applied to both the front and back side of the step and provide a flexible, textured surface that is resistant to chemicals including road de-icing treatments.	
34. Storage Compartment	An overhead storage compartment shall be located above the windshield. Compartment door shall be hinged at top.	
35. State Inspection	Bus shall be state of Illinois inspected prior to delivery	
36. Sunvisor	Visor to be supplied by the chassis manufacturer.	
37. Switch Panel	Switches for the body electrical components shall be mounted above the driver over the windshield. Rocker type switches are to be supplied. The switches shall provide with L.E.D. backlit illuminated lenses, international symbols and labeling for the appropriate functions.	
38. Towing	Two (2) tow eyes/hooks shall be provided by the chassis manufacturer on the front of the vehicle and two (2) tow eyes/hooks shall be provided at the rear of the vehicle.	
39. Undercoating	Entire underbody to be completely undercoated with asphalt emulsion water-based undercoating after body to chassis mounting for maximum rust proofing.	
40. Ventilation	Body shall be equipped with a static type, non-adjustable exhaust ventilator located in low pressure area of front roof. A driver-controlled fresh air vent shall be provided.	

41. Warranty	School Bus Body Warranty: A copy of the body manufacturer's warranty shall be enclosed with and become a part of any bid which shall receive consideration by the purchaser. Such warranties shall speak specifically to the following: Within the first **5 years** following delivery to the purchaser's location with no mileage limitation: • Failure in major structural components including those caused by deterioration due to rust. • Failure in seat frames and barrier frames. Within the first **3 years** following delivery to the purchaser's location with no mileage limitation - all other original components manufactured by the body manufacturer. Within **3 year** following delivery to the purchaser's location with no mileage limitation - all original components manufactured by outside vendors. Where the outside supplier's warranty exceeds that of the body manufacturers, then such warranty shall be stated and shall apply.	
42. Windows	2-piece side windows to be of safety tempered glass in flat black, powder-coated aluminum frames. The top portion of the side windows shall be capable of being lowered to a position that provides an opening at least 12" x 28". Windows must be accessible for removal without lowering the wiring harness access panel. All glass to be tinted. Thermopane windows to include the top entrance door windows, and the first window behind the entrance door.	
43. Windshield	As supplied by the chassis manufacturer.	
44. Windshield Washer	As supplied by the chassis manufacturer **with heated wiper fluid reservoir**.	
45. Windshield Wipers	As supplied by the chassis manufacturer.	
46. Wheelchair Lift Interlock	Bus shall have an OEM installed FMVSS 403/404 compliant wheelchair lift and vehicle brake interlock system installed.	

47. Wheelchair Lift	Bus shall have an OEM installed FMVSS 403/404 compliant wheelchair lift installed at Lift Door. Lift shall have a minimum usable platform size of 33" x 51". Padding kit shall be included and installed prior to delivery.	
48. Wheelchair Restraint System	(3) Q'Straint QRT Deluxe Model Q8306-L2 "L" **track mounted** retractable wheelchair restraints shall be included with bus. **Seating arrangement shall be designed for up to three (3) wheelchair positions, but three (3) wheelchair positions shall be in tracking with seats installed to allow for either ambulatory or wheelchair passengers.** **Four (4) seats on the driver's side shall be in tracking for easy removal and conversion to a wheelchair position for two (2) future wheelchair positions. Two (2) seats on the curb side immediately in front of the wheelchair lift shall be in tracking for one (1) future wheelchair position.**	
49. Custom Interior Options	Trash receptacle shall be included and mounted in a location specified by the customer. Broom handle clip shall be included and mounted in a proper location specified by the customer.	

Item	Chassis Specifications Minimum Specifications Required	Specifications Furnished. Fill in all spaces, Note & explain equivalents or exceptions.
Chassis Type	2026/2027 Model Year Dual Rear Wheel Chassis GVWR not less than 12,300 lbs.	
1. Alternator	Shall be a 12-volt alternator of not less than 220 amps.	
2. Axle, Front	Twin-I-Beam IFS - Minimum 4,300 lbs.	Axle Capacity:
3. Axle, Rear	Dana Full Floating - Minimum 8,600 lbs. 3.73 Axle Ratio	Axle Capacity:
4. Batteries	Shall be dual 12-volt low maintenance, lead antimony type battery with a minimum of 770 cold cranking amps.	CCAs:
5. Brakes	Shall be Four Wheel Hydraulic Disc with Four Wheel ABS.	
6. Cruise Control	Chassis shall include OEM Electronic Cruise Control	
7. Driver Door Step	An external step shall be installed underneath the driver door to assist driver with entrance/exit as well as shield debris from the bus body.	
8. Engine	6.6L V8 Gasoline with Electronic Fuel Injection 401 Horsepower @ 5,200 RPM 464 Lb.-Ft. Torque @ 4,000 RPM	Engine Supplied: Horsepower: Torque:
9. Exhaust System	Single non-catalytic muffler with 3" tailpipe exiting the rear below the bumper.	
10. Fuel Tank	33 Gallon capacity minimum, located behind the rear axle, meeting all requirements of FMVSS 301. An outside fuel filler to be provided.	
11. Shock Absorbers	1.38” Heavy Duty Gas-Type, Front & Rear	
12. Springs/Suspension	Front: shall be independent coil springs with stabilizer bar. Rear: shall be heavy-duty multi-leaf to provide optimum comfort at no load or at full load.	
13. Steering	Tilt Steering Wheel shall be provided.	
14. Transmission	(6) Speed Automatic with Overdrive, Electronically Controlled with Overdrive and Tow/Haul Mode. Shall Include Cruise Grade Braking and Powertrain Grade Braking	
15. Wheelbase	159” Minimum	

Byron Community Unit School District #226
Type-A Multi-Function School Activity Bus Specifications
14 Passenger MFSAB – Gasoline Chassis

The school bus body (or bodies) furnished shall comply with all current state and Federal Motor Vehicle Safety Standards in effect at time of bid. Additionally, Byron C.U.S.D. is requiring the following supplementary specifications. Any exceptions to these specifications should be concisely noted in the space provided. Equivalency of any exceptions to the items requested will be solely at the discretion of Byron C.U.S.D.

Bidding Company Name: _____

Address: _____

_____

Contact: _____

E-Mail Address: _____ Website: _____

Make and Model of Bus Body & Chassis: _____

Passenger Capacity: _____ Kneeroom: **24" Required** Model Year: _____

Item	Body Specifications Minimum Specifications Required	Specifications Furnished. Fill in all spaces, Note & explain equivalents or exceptions.
1. Air Conditioning	Carrier AC-5W13T 53,000 BTU Air Conditioning System Free Blow A/C System that ties into Chassis OEM System System Consists of: (1) IW-1 Evaporator – Rear Bulkhead (1) CM-3 Condenser – Skirt Mounted	
2. Aisle	There shall be a minimum 12" wide aisle from the entrance door to all emergency doors. The aisle shall be trimmed with stainless steel aisle strips or no aisle strips are required if the aisle and floor seam are tight to prevent debris from entering underneath flooring	
3. Assist Rail	Back side of stepwell: There shall be a stainless steel assist rail at the entrance door, mounted near the midpoint of the stepwell and extending to near the top of the seat barrier. Front side of stepwell: There shall be an additional stainless steel assist rail at the entrance door. Both assist rails shall be securely attached.	
4. Back-up Alarm	The bus shall be equipped with an automatic back-up alarm installed behind the rear axle. This audible alarm shall be rated at 112dba.	DBA:

5. Bumper	Front: Shall be supplied by chassis manufacturer. Rear: Shall be formed from 12-gauge plate steel and a minimum of 9 3/4" wide (high) x 7/64" with a .5369 square inch section modulus. Bumper shall wrap around corners of bus and be attached to the chassis frame. Bumper to be diagonally braced. **Rear Bumper shall be gray in color.**	
6. Camera System	Minimum Camera Head and Installation Specifications: • Quantity (3) – 3.6MM High Definition Dome Camera with (Infrared LED) and Audio Housing: o Die-cast aluminum housing (powder coated), impact-resistant polycarbonate, anti-glare, scratch-resistant hard coating, UV protected surface mount and no extra bracket required. o 1080p progressive scan resolution o Low-profile, vandal-resistant housing o Infrared LEDs to see in low light o True Day/Night Operation o Back-light compensation improves image quality in high contrast conditions o High-fidelity audio o Warranty: 3-year parts and labor o Installation: (1) 3.6MM camera head shall be mounted on the front bulkhead aimed toward the rear of the vehicle, (1) 3.6MM camera head shall be mounted in the dash area aimed within the wiper sweep, recording the windshield view and (1) 3.6MM camera head shall be mounted in the area of the storage compartment above the driver seat aimed toward the stepwell of the vehicle. Minimum Digital Video Recorder (DVR) and Installation Specifications: • Quantity (1) DVR shall record up to (4) channels high-definition (HD) video and up to (4) channels of audio o Recorded Resolution: 1920 x 1080 o Recording at 1080p with HD Cameras o Record rate – Main: Up to 15 FPS, at 1080p / Second: Up to 5 FPS all channels o Must have 500 GB to 2 TB (HDD) removable media cartridge with hard drive storage capacity. o Standard computer hard drives or SD style memory cards are NOT acceptable o Must have dimensions no larger than 2.5 x 7 x 9.5 inch (64 x 188 x 241 mm) o Automatic repeat-record when memory device is full (user selectable on-off) o Integrated lock box with removeable locking door, rounded edges, and power painted finish. o Must include Event/Diagnostic Button to mark events for quick retrieval. o Requires (5) user customizable full featured signal inputs o Passive GPS system included o Wi-Fi: Built-in 802.11 with dual antenna ports o Warranty: 3-year parts and labor	

6. Camera System (continued)	• Installation: o DVR: Shall be securely mounted in storage compartment above the driver seat leaving easy access for hard drive retrieval. o Event/Diagnostic Button: Shall be installed for easy driver access and viewing. o Signal Inputs: Shall be connected and configured to the following vehicle inputs: Warning Lights, Stop Arm, Brake Lights, Left Turn Signal, and Right Turn Signal. o Passive GPS System: Shall be installed to ensure proper signal.	
7. Certificate Holder	Bus shall be equipped with a minimum 4" x 6" transparent certificate and registration holder mounted on the interior front header area of the bus.	
8. Color	Exterior: Shall be Blue Tone White. This paint shall be baked-on high solids polyurethane. Trim, including guard rails and door handles shall be gray. Interior: Shall be light gray baked-on enamel. The area from the bottom of the side windows to the seat rail shall be a clear coated Galvalume steel. All seat frames, dash, heaters, and heater ducts shall have a baked-on black powder coating for scratch resistance. All metal panels on the bus to be painted shall be primed on both sides prior to assembly.	
9. Construction	The bus body shall be constructed to meet or exceed all state and federal school bus requirements in effect at the time of manufacture. Internal skeletal structure shall be welded. Screws, rivets, or huck bolts are not acceptable. Roof Bows: The roof bow frame assembly shall consist of 16-gauge hat section bows extending from the bottom of skirting on one side to the other. Bow frames shall be continuous, one-piece, 16-gauge rolled channel hat sections 1 7/8" deep, mounted on 28 3/4" centers to provide a rollbar type protection. Floor: Floor shall be constructed of 16-gauge high tensile steel "C" channel joists (horizontally positioned) the entire width of the bus at each rafter location with four (4) strategically placed longitudinal reinforcements for seat mounting. These joists shall be covered with 14 gauge .0625 thick steel corrugated floor sheets. There shall be a plywood sub-floor of a nominal 1/2" thickness minimum.	
10. Defrosters	Defroster shall be sufficient capacity to keep windshield clear of fog, snow, and ice. The defroster shall include full length windshield defroster channel for even distribution of heated air to the windshield.	

11. Doors	Service: The service door shall be **electric operated**, outward opening under control of driver and so designed as to prevent accidental openings. Door control mechanism shall be located overhead of door and concealed behind a removable panel. Door shall seal against a stationary rubber and bottom step edge. No part of door to ride in the stepwell when closed. Vertical closing edges of door shall be equipped with flexible material. Door hinges shall be greasable type. Minimum clear opening shall be 24" x 72". All doors shall be equipped with padding at the top edge of each door opening. The pad shall be at least 3" wide and 1" thick and extend the full width of the door opening. The service door and side and rear emergency doors shall contain drainage holes in the bottom of the door to allow for drainage of condensation and to deter corrosion. Driver's: Door shall be supplied by the chassis manufacturer, located to the left of the driver's seat.	Type: Operation:
12. Electrical	The electrical system shall be 12-volts. The wiring shall be color and number coded and a wiring diagram shall be furnished with each bus. Interior body wiring shall be routed down the side of the bus, above the side windows, behind a completely removable cover. This cover shall be removable without loosening the side windows. All wires shall be insulated and protected from external damage. The body wires shall be securely fastened to a metal stringer, which runs from the front of the passenger compartment to the back, behind the wiring cover. The wires shall be fastened at intervals of not more than 24". **Shall include a Master Noise Kill Switch**	
13. Passenger Post Trip Inspection System	The bus shall be equipped with electronic system that is activated by driver using warning light system. The system shall be designed so as to require the driver to walk to the back of the passenger compartment upon completing route to disarm. If not disarmed the headlights will flash and the horn will sound alerting personnel the bus was not checked to ensure all passengers have exited the bus. **Driver's door must be integrated in the system and not allow the driver to exit that door without disarming.**	
14. Emergency Exits	All emergency exits shall conform to FMVSS 217. Emergency Door: There shall be an emergency door located in the center rear of the bus. Door to be equipped with an audible buzzer which will sound when latch is moved toward open position. This door shall have a minimum of 33" horizontal opening and a 54" vertical opening. Door to have upper and lower glass. Door hinges shall be greasable type. Piano type hinge **is not** acceptable. Door shall be equipped with locking device and wired to interrupt starting when in locked position.	

15. Exterior Paneling	Roof: The roof panels shall be double-lapped, 22 gauge .040 thick aluminum, riveted to each flange of the body bow frame. The roof sheets shall be pieced in three sections, two laterally and one lengthwise over seams. All roof sheets shall be sealed. The roof shall be reinforced with two 16-gauge roof rails applied externally, riveted through the roof panels and into the roof bows to provide an extra measure of strength in the overhead areas. Exterior panels shall be primed both sides before assembly for rust prevention. Exterior Side Panels: shall be 20 gauge .0375 thick smooth steel, double-riveted to body bow frames. The side panels shall be primed on both sides before assembly.	
16. Fire Extinguisher	Each bus shall be equipped with one dry type chemical fire extinguisher to meet state standards. The fire extinguisher shall be mounted in an appropriate mounting box in front of the stepwell area or overhead of the driver.	Fire Extinguisher: Size: Location:
17. First Aid Kit & Triangle Flares	Each bus shall be equipped with a metal type first aid kit which meets state standards. The first aid kit shall be securely fastened in front of the stepwell area or overhead of the driver. Each bus shall be equipped with a set of triangle flares in accordance with FMVSS. The triangle flares shall be securely in front of the stepwell area or overhead of the driver.	First Aid Kit: Size: Location:
18. Floor Covering	Floor covering shall be heavy-duty gray marbleized vinyl. The floor under the seats, over the wheelhouses, on the side of the wheelhouses, and in the driver's compartment shall be covered with smooth vinyl. The aisle and entrance steps shall be covered with slip-resistant ribbed vinyl. All floor seams must be sealed with a waterproof sealer and covered with a 1" wide 16 gauge rust proof metal stripping or molding. The floor covering along the side walls shall be covered with metal molding so that dirt cannot readily work underneath the edges. 5/8" plywood floor.	
19. Fuel Tank Opening	Exterior: As supplied by the chassis manufacturer.	
20. Guard Rails	Minimum of four (4) guard rails to be supplied: One 4 1/4" located below windows One 4 1/4" located at seat cushion level One 4 1/4" located at floor level One 4 1/4" located at skirt level Two 2 15/16" roof rails extending the length of the passenger compartment. Side rails shall be fluted at the bottom to allow for moisture drainage.	

21. Heater & Defrosters	Front: Supplied by the chassis manufacturer. All passenger compartment heaters to be easily serviceable with cleanable air filters. All passenger compartment heaters shall be of the copper coil design type with aluminum fins. If more than one heater is used, they shall be plumbed in parallel to obtain the maximum heater output.	
22. Identification	The bus shall be lettered in accordance with all applicable federal and state requirements. Bus shall be equipped with easily changeable route/bus identification sign attached to exterior rear of entrance door.	
23. Instruments Gauges & Switches	The body switches shall be located above the windshield in front of the driver's seat and be forward facing for quick and easy access. The chassis instruments and gauges shall be located within easy view of the seated driver.	
24. Insulation	Ceiling, sides, and rear panels shall be insulated with a minimum 2" thick blanket-type polyester insulation to properly deaden sound, reduce vibration, and provide a thermal barrier. The insulation shall be fire-resistant of type approved by Underwriters Laboratories, Inc.	
25. Interior	All interior panels shall have lapped edges. Interior side panels to be 22 gauge .025" thick embossed aluminum and shall extend from the window line to the floor. Engine Cover: Shall be insulated and sealed to shield the driver from noise, heat and fumes. The cover shall be held in place by positive fasteners as supplied by the chassis manufacturers. Interior headroom shall be a minimum 73".	Interior Headroom:
26. Lamps & Signals	All lamps shall conform to applicable FMVSS and state laws in effect at time of manufacture. Lights to include: Headlights: Single sealed beam halogen (42 watt low beam/65 watt high beam) Wired to alternately flash when stop arm is deployed as per state specification. Cluster: Three (3) L.E.D. Amber front pin type or with protective shields Three (3) L.E.D. Red rear pin type or with protective shields Marker: Two (2) L.E.D. Front corners, Two (2) L.E.D. Rear corners and side roof – All either pin type of with protective shields	

26. Lamps & Signals (continued)	Stop/Tail: One right rear L.E.D., One left rear L.E.D. with 48 square inches of illuminated surface. Light assembly to be flush mounted to body. Two (2) L.E.D. Red Rear 4" Minimum Backup: Two (2) L.E.D. lamps with 28 square inches of illuminated surface clear lens, mounted in taillight assembly. Light to be flush mounted to body. Stepwell: One (1) interior operating with entrance door One (1) exterior operating with entrance door Dome: One (1) for driver Six (6) minimum, 3 rows of 2 Chassis Side/Fender Mount Directional Lights: One right fender mount, One left fender mount with 16 square inches of illumination each Directional Sides: Two (2) L.E.D. amber, one (1) located behind entrance door below window rail, one (1) located left side, similar position Reflectors: Two (2) on each side of bus, two (2) on rear and two (2) on front of bus body. Crossing Arm: Specialty Solid State Motor with Poly Arm to meet FMVSS and state requirements Strobe Light: Shall meet FMVSS and State Specifications	
27. Mirrors	Interior mirror to be 7" x 16" safety glass with protected edges. Exterior rearview mirrors shall be Rosco heated and hand adjustable with Stainless Steel brackets. Exterior crossview mirrors shall be two (2) quadrispherical mirrors heated with Stainless Steel brackets. One (1) left and one (1) right fender-mounted. Mirrors shall comply with FMVSS 111.	
28. Mounting	Bus body shall be mounted to chassis frame in such a manner as to prevent shifting. Mounting to chassis shall be with frame risers and 1/2" bolts. The body must be completely sealed where the body and the chassis cab are joined.	
29. Mud Flaps	There shall be rubber mud flaps mounted on the rear side of the front and rear wheel wells.	
30. Radio	AM/FM with 4 Passenger Speakers	
31. Reflective Tape	2” tape applied at floor level on side 1” tape applied around rear perimeter of vehicle Also as required by state and federal regulations around emergency exit windows, doors and hatches.	

32. Seats	Passenger Seats: All seats shall comply with all applicable FMVSS and state specification. Seat frames shall be powder coated non-reflective black. Cushions to be attached to frame so as to prevent detachment, yet allow for cleaning by pivoting cushion upright. Upholstery to be heavy duty fireblock gray material **Seats shall be restraining type seats with lap belts installed.** Seat Spacing: 24" hip to kneeroom seat spacing is required. Driver's seat: Shall be adjustable high-back seat supplied by the chassis manufacturer. Driver's seat belt: Shall be a Type II, 3-point belt as supplied by the chassis manufacturer. **Orange in color.**	
33. Stepwell	The stepwell shall include two (2) full-depth steps. The entrance and egress area including the top landing area adjacent to the driver's seat shall be unobstructed by the engine cover or other components. The maximum distance from the first step to the ground shall be no greater than 11". **Stepwell shall be coated** with a durable high performance Tuff Coat material to guard against abrasion, corrosion and weather. Material shall be applied to both the front and back side of the step and provide a flexible, textured surface that is resistant to chemicals including road de-icing treatments.	
34. Storage Compartment	An overhead storage compartment shall be located above the windshield. Compartment door shall be hinged at top.	
35. State Inspection	Bus shall be state of Illinois inspected prior to delivery	
36. Sunvisor	Visor to be supplied by the chassis manufacturer.	
37. Switch Panel	Switches for the body electrical components shall be mounted above the driver over the windshield. Rocker type switches are to be supplied. The switches shall provide with L.E.D. backlit illuminated lenses, international symbols and labeling for the appropriate functions.	
38. Towing	Two (2) tow eyes/hooks shall be provided by the chassis manufacturer on the front of the vehicle and two (2) tow eyes/hooks shall be provided at the rear of the vehicle.	
39. Undercoating	Entire underbody to be completely undercoated with asphalt emulsion water-based undercoating after body to chassis mounting for maximum rust proofing.	

40. Ventilation	Body shall be equipped with a static type, non-adjustable exhaust ventilator located in low pressure area of front roof. A driver-controlled fresh air vent shall be provided.	
41. Warranty	<u>Multi-Function School Activity Bus Body Warranty:</u> A copy of the body manufacturer's warranty shall be enclosed with and become a part of any bid which shall receive consideration by the purchaser. Such warranties shall speak specifically to the following: Within the first **5 years** following delivery to the purchaser's location with no mileage limitation: • Failure in major structural components including those caused by deterioration due to rust. • Failure in seat frames and barrier frames. Within the first **3 years** following delivery to the purchaser's location with no mileage limitation - all other original components manufactured by the body manufacturer. Within **3 year** following delivery to the purchaser's location with no mileage limitation - all original components manufactured by outside vendors. Where the outside supplier's warranty exceeds that of the body manufacturers, then such warranty shall be stated and shall apply.	
42. Windows	2-piece side windows to be of safety tempered glass in aluminum frames. The top portion of the side windows shall be capable of being lowered to a position that provides an opening at least 12" x 28". Windows must be accessible for removal without lowering the wiring harness access panel. All glass to be tinted. Thermopane windows to include the top entrance door windows, and the first window behind the entrance door.	
43. Windshield	As supplied by the chassis manufacturer.	
44. Windshield Washer	As supplied by the chassis manufacturer **with heated wiper fluid reservoir**.	
45. Windshield Wipers	As supplied by the chassis manufacturer.	
46. Custom Interior Options	Trash receptacle shall be included and mounted in a location specified by the customer. Broom handle clip shall be included and mounted in a proper location specified by the customer.	

Item	Chassis Specifications Minimum Specifications Required	Specifications Furnished. Fill in all spaces, Note & explain equivalents or exceptions.
Chassis Type	2026/2027 Model Year Dual Rear Wheel Chassis GVWR not less than 12,300 lbs.	
1. Alternator	Shall be a 12-volt alternator of not less than 220 amps.	
2. Axle, Front	Twin-I-Beam IFS - Minimum 4,300 lbs.	Axle Capacity:
3. Axle, Rear	Dana Full Floating - Minimum 8,600 lbs. 3.73 Axle Ratio	Axle Capacity:
4. Batteries	Shall be dual 12-volt low maintenance, lead antimony type battery with a minimum of 770 cold cranking amps.	CCAs:
5. Brakes	Shall be Four Wheel Hydraulic Disc with Four Wheel ABS.	
6. Cruise Control	Chassis shall include OEM Electronic Cruise Control	
7. Driver Door Step	An external step shall be installed underneath the driver door to assist driver with entrance/exit as well as shield debris from the bus body.	
8. Engine	6.6L V8 Gasoline with Electronic Fuel Injection 401 Horsepower @ 5,200 RPM 464 Lb.-Ft. Torque @ 4,000 RPM	Engine Supplied: Horsepower: Torque:
9. Exhaust System	Single non-catalytic muffler with 3" tailpipe exiting the rear below the bumper.	
10. Fuel Tank	33 Gallon capacity minimum, located behind the rear axle, meeting all requirements of FMVSS 301. An outside fuel filler to be provided.	
11. Shock Absorbers	1.38” Heavy Duty Gas-Type, Front & Rear	
12. Springs/Suspension	Front: shall be independent coil springs with stabilizer bar. Rear: shall be heavy-duty multi-leaf to provide optimum comfort at no load or at full load.	
13. Steering	Tilt Steering Wheel shall be provided.	
14. Transmission	(6) Speed Automatic with Overdrive, Electronically Controlled with Overdrive and Tow/Haul Mode. Shall Include Cruise Grade Braking and Powertrain Grade Braking	
15. Wheelbase	139” Minimum	