

**NESHAMINY SCHOOL DISTRICT
2001 Old Lincoln Highway
Langhorne, PA 19047-3295**

Bid Instructions, Terms, Conditions, and Specifications

**Nine (9) New -78 –PASSENGER Type C-Passenger School Buses,
Two (2) New -30 passenger -3 wheelchair Positions–Wheel Chair Lift-Type A- School Bus
(Body and Chassis)
One (1) New -78 passenger -3 wheelchair Positions–Wheel Chair Lift-Type A- School Bus
(Body and Chassis)**

Bid Proposal Number:	19-20
Submission Date:	May 3, 2018
Submission Time:	10:00AM
Pre-Bid Meeting:	April 17, 2018
Destination For Delivery of Bids:	Mr. Joseph Rischow Purchasing Supervisor Purchasing Department jrischow@neshaminy.org Neshaminy School District 2001 Old Lincoln Highway Langhorne, PA 19047-3295
If you have any questions pertaining to the specifications, may be directed to: Mr. Timothy Trzaska at (215) 809-6250	

Neshaminy School District
2001 Old Lincoln Highway
Langhorne, PA 19047-3295

Special Terms and Conditions for the Purchase of Twelve (12) Buses:

Nine (9) New -78 –PASSENGER Type C-Passenger School Buses,
Two (2) New -30 passenger -3 wheelchair Positions–Wheel Chair Lift-Type A- School Bus
(Body and Chassis)
One (1) New -78 passenger -3 wheelchair Positions–Wheel Chair Lift-Type A- School Bus
(Body and Chassis)

1. Invitation to Bidders:

Sealed proposals will be received by the Neshaminy School District at the Purchasing Department, 2001 Old Lincoln Highway, Langhorne, PA 19047 for the purchase of

Nine (9), new 78-passenger school bus (body and chassis);

Two (2), 30 Passenger-3 wheel chair position (body and chassis).

One (1), 78 Passenger-3 wheel chair position (body and chassis).

Bids are to be submitted in a sealed envelope marked:

“Bid No. 19-20 New School Buses (Body and Chassis)”

And delivered to Neshaminy School District’s Purchasing Department no later than May 3, 2018 at 10:00AM, at which time they will be publicly opened.

Any exception or deviation from the specifications shall be in writing with the bid proposal. The School District reserves the right to waive variations to the specifications where the quality of the product is not affected. The School District reserves the right to waive any irregularities in the best interest of the School District.

In the event that the bidder's quotations are valid for less than (90) days, the extent of time allowed for acceptance of the order by the School District should be clearly indicated in the bid.

Neshaminy School District reserves the right to increase or decrease the number of buses purchased.

2. Bid Bond and Liquidated Damages:

Bids shall be accompanied by a certified check, bank cashier’s check, trust company treasurer’s check or Bid Bond from a surety company legally authorized to do business in the Commonwealth of Pennsylvania, and having the highest rating available from independent rating service, in an amount of no less than five percent (5%) of the total herein stated bid, made payable to: “Neshaminy School District”. It is agreed the surety will be forfeited to and retained by the District as liquidated damages if this proposal or any part thereof is accepted by the District and all provisions of this proposal are not carried out.

3. Payment:

The School District shall make payment in full by check after the bus or buses have been checked and certified as complete by Neshaminy personnel and the payment approved by the Board of School Directors.

4. Guarantee:

The Bidders shall furnish data on guarantee terms for chassis, body, engine, electrical parts, storage battery and tires. The Bidder shall guarantee the bus body including parts and labor for the minimum specified time periods listed below. Also, please include pricing for a 10 yr. warranty, bumper to bumper.

A. Within the first five years or unlimited miles following the delivery to Neshaminy School District:

1. Failure in major structural components including those caused by deterioration due to rust
2. Rust perforation of sheet metal surfaces and paint adhesion
3. Failures in seat frames and barrier frames
4. **The Transmission:** will carry a five year/unlimited mileage extended warranty following the delivery to Neshaminy School District for the transmission

- B. Within the first two years or unlimited miles following the delivery to Neshaminy School District:
 - 1. Failure of any components manufactured as original equipment by the body manufacturer
 - C. Within the first year or unlimited miles following the delivery to Neshaminy School District:
 - 1. Failure of any components manufactured by outside suppliers and included as original equipment by the body manufacturer. If the warranty extended by such outside suppliers exceeds that of the body manufacturer it should be so stated and will take precedence.
 - D. **The Bus Body Warranty**: A copy of the manufacturer's body warranty shall be included with and become a part of any bid which shall receive consideration by Neshaminy School District
 - E. **The Engine**: will carry an eight- (8) year/ninety six (96) month/150,000 mile warranty against failure of any engine component. No deductible and/or service charges to be applied
5. Delivery:
- Delivery to the Transportation Department of Neshaminy School District, located at 2001 Old Lincoln Highway, Langhorne, PA 19047, shall be made on or before **08/11/17**, at which time the dealer shall furnish:
- A. A certified Pennsylvania weight slip of the gross vehicle weight
 - B. Only buses having been inspected and passed by:
 - 1. Pennsylvania Motor Vehicles
 - 2. Pennsylvania State Police
 - C. Chassis and bodies meeting or exceeding the specifications as listed or in lieu of specifications outlined, and they must meet any requirements by the Federal Department of Transportation and the State of Pennsylvania Minimum Standards for school buses
6. The buses will be purchased by the award of a single contract or split if in the best interest of the School District. Vehicle Trade-in may or may not be included at the discretion of Buyer.
7. The specifications will include the following conditions, which shall be met by the successful bidder(s), in addition to the usual physical and mechanical specifications for the vehicles which are attached under separate cover:
8. **NUMBER OF BUSES**: The School District reserves the right to reduce or increase the number of buses purchased during the contract period at the same bid price, and vehicle specifications as herein stated.
9. **INSPECTION**: The chassis and body as delivered must carry a certificate of inspection (windshield sticker) from the Commonwealth of Pennsylvania, Department of Transportation, Bureau of Motor Vehicles, a State Police School Bus Inspection certificate (windshield sticker) and must be titled for School Bus: Permanent Registration and Tag to Neshaminy School District.
10. **TRADE-IN VALUES**: Buses listed in this bid and trade-in values are part of this bid and may be used to figure the final cost of the purchase of the buses in the bid. Separate listing for trade-in buses will be furnished and will include: Vehicle Identification Number and Mileage of each bus for trade-in. School District may elect to accept total of all trade-in values or accept individually by vehicle or elect to remove trade-ins totally from Bid calculations and Award.
11. **LIQUIDATED DAMAGES**:
- A. Should the Bidder fail to deliver the buses by the expiration of the delivery date set forth in the bid specification, the School District will then back charge the Bidder the sum of **Five Hundred (\$500.00)** per day for each calendar day buses have not been delivered after delivery date or the Bidder shall supply loaner buses to fulfill the quota until such time the delivery of the order is completed. The parties agree that said sum is a proper measure of liquidated damages which the School District shall sustain per diem as a result of the failure of the Bidder to deliver within the time required. In no event shall this sum be construed as any form of penalty being imposed upon the Bidder. Liquidated damages shall be assessed after failure to deliver no later than date of September 1, 2018.
 - B. Should the Bidder be delayed in the delivery of the work set forth in the bid specifications by reason of unforeseen circumstances beyond his control and without his fault or negligence, including but not limited to acts of God or the public enemy, acts of neglect, acts of other contractors, if any, fires, flood, epidemics,

strikes, civil disturbances or freight embargos, the date specified in the bid specifications as the completion date shall be extended by such times as shall be fixed by the School District, provided however, that any and all claims for extensions of time shall be made by the Bidder in writing within five (5) days after the termination of the event for which the Bidder seeks an extension of time. Otherwise, any claim for an extension by reason of said event shall have been waived by the Bidder.

12. VEHICLE TRAINING REQUIREMENTS:

- A. DRIVER TRAINER: A driver trainer learning session shall be scheduled at the District's designated location at a time to be determined close to delivery. Instructor shall be experienced and fully versed on the overall features and operation of the vehicle and shall be prepared to offer approximately 90 minutes of training. There shall be no charge to the District for this class.
- B. TECHNICIANS: Mechanics/Technician training shall be made available, at no charge to the District, and shall include in-depth instruction on the overall vehicle operation, electrical systems, and mechanical systems. Any off-site training costs shall be absorbed by the successful bidder. Training for up to six (6) technicians for a minimum of eight (8) hours each of District-specified training content (for example, training on engine operation and maintenance) shall be provided.

Bidders shall include a brief outline with their bid submittal of proposed training topics.

**NESHAMINY SCHOOL DISTRICT
2001 OLD LINCOLN HIGHWAY
LANGHORNE, PENNSYLVANIA**

GENERAL TERMS AND CONDITIONS FOR BIDDING

1. Bids will be publicly opened and read in the Purchasing Department at 2001 Old Lincoln Highway, Langhorne, Pennsylvania on the date and time specified in the bid.
2. It is mutually understood and agreed by and between the School District and the Bidder that the School District may make its award for one or more of the articles set forth in these specifications, or may make its award for all of the articles set forth in these specifications. The School District has the right to accept or reject all or any portion of any or all bids submitted, and to make the award in the best interest of the School District.
3. The Bidder agrees, if awarded any portion of the contract, to furnish and deliver the said articles at such times, at such places, at such prices and in such quantities as herein specified, and that all of the articles shall be subject to the inspection and approval of the School District. In the event that any of the said articles shall be rejected as unsuitable or not in conformance with these specifications, such articles shall at once be removed and returned to the Bidder and other articles of proper quality as set forth in these specifications shall be furnished in place thereof. The School District will incur no costs in excess of the amount awarded to replace unwanted or unsuitable merchandise.
4. In the event that the successful Bidder shall neglect or refuse to furnish and deliver the said articles the said articles or any part thereof as provided in the specifications or to replace any which are rejected as stated in these instructions, then the School District is authorized and empowered to purchase articles in conformity with this contract from such party or parties in such quantities and in such manner as it shall select at the expense of the successful Bidder, or to cancel this contract reserving unto itself, nevertheless, all of the rights for damages which may be incurred by the School District.
5. Where the invitation for bids describes or specifies a particular article, alternate bids covering articles equal in all respects are permitted, unless otherwise stated. Where an invitation specifies an article by name and the Bidder intends to furnish another article which the Bidder considers equal thereto, in every instance the name and grade of the equivalent must be clearly stated in the bid. The naming of any manufacturer by the School District is for the purpose of clarification and identification and does not signify a preclusion of other manufacturers' products, but it is agreed that all articles shall be equal to those specified and shall, regardless of any trade or manufacturer's name, meet the specifications. Vendor must identify name of manufacturer and manufacturer's catalog number on bid. Failure to do so will be interpreted as indication of non-conformance with the School District's specifications.

If requested by the School District, Bidders shall furnish samples of such substitutes no later than the time specified by the District and at the expense of the Bidder.

6. Unless otherwise specified, samples are to be in the possession of the District no later than one week prior to the date of the bid opening in order to assure consideration. These samples shall be plainly marked with the name of the product as well as that of the Bidder. After awards are made by the District, all samples will be returned to the unsuccessful Bidders at the expense of those Bidders should they choose to have their samples returned. In the case of successful Bidders, samples will be retained until final delivery of these items is completed.
7. Bidder shall be responsible for notifying the School District of any price advantage to the District if the order quantity of any item(s) were to be increased to the next higher price break for that item. Should such break point exist, such notice must be given at the time of bid submission.
8. We/I agree to deliver as stated above such items of this bid as may be accepted by the School District, immediately upon receipt of Purchase Order or within thirty (30) days thereafter, or indicate exception. Items not delivered within the specified time are subject to cancellation by, and at no cost to, the District.

9. It is understood that the Neshaminy School District is exempt from the payment of excise taxes. Should we/I desire to be exempt from such tax, we/I agree to present to the District properly prepared Exemption Certificates for execution. Such certificates will be presented only for items furnished under this proposal, will list items and quantities delivered, and will state the names and addresses of manufacturers and suppliers of said items.
10. It is agreed that only those proposals received by the School District prior to the date and time stated in each proposal shall be considered by the District. The School District reserves the right to waive any irregularities in the best interest of the School District.
11. We/I agree to save harmless the Neshaminy School District, herein named, their officers, employees or agents from any liability or performance of this contract which also includes claims for Worker's Compensation.
12. We/I further agree to comply with the laws, rules and regulations as may be applicable to the supplying of, delivery of, installation of, and other acts necessary in the fulfillment of this proposal.
13. We/I agree that the School District will make payment in full for any articles listed in, and subject to, this proposal, ordered in writing by the School District and so delivered and installed (if required), and to the satisfaction of the District for articles so delivered and accepted. Freight and other transportation and insurance charges are to be included in the Bidders quotation. The School District will not honor requests for payment for said charges added to the contracted price(s). Three copies of Vendor's invoice are required by the District for payment.
14. We/I agree that any articles delivered, accepted by, and paid for by the School District shall nevertheless be guaranteed for a period of at least one (1) year from the date of delivery. Bidder agrees to replace any article developing defects within such period. Certain other system guarantees are specified elsewhere in the specifications and are in addition to this one year general guarantee.
15. Bidder shall enclose with bid submission catalog cuts and descriptive data in order to permit thorough checking by School District personnel for each item and to determine specification compliance. Samples shall be supplied as requested or as indicated herein.
16. Bidder hereby agrees to fulfill all requirements with respect to the installation of items quoted on an installed basis and accepts responsibility for having visited the installation site and becoming familiar with all conditions which may affect such installation. Bidder further agrees to supply all materials, tools, equipment, transportation, labor, supervision and insurance which are required to complete the installation in a manner approved by the District.
17. All bidders must enter information as to probable time of delivery for items upon which bids are submitted. Orders placed as a result of bids will imply a contractual obligation of the Vendor to supply the items within the time specified by the bidder on the bid.
18. In the event that the Bidder's quotations are valid for less than ninety (90) days, the extent of time allowed for acceptance of the bid by the School District will be clearly indicated on the bid.
19. The School District reserves the right to increase or decrease the quantity awarded for each item from that originally requested without affecting the unit price.
20. All cartons/packing slips are to be clearly marked indicating the Purchase Order Number.
21. Bids shall show both unit and total prices. Should figures be in disagreement, the unit price shall govern. Prices are to be expressed in two (2) decimal places only. Any prices displaying more than two (2) decimal digits will not be recognized or rounded up by the Neshaminy School District.
22. If you do not or cannot bid, and wish to be considered for future bids issued by the Neshaminy School District, please return your bid with the notation that you wish such future consideration. In the absence of request for continued consideration, the Neshaminy School District will remove your name from our Bidder's List.
23. A Notarized Non-Collision Affidavit shall be submitted with your bid.

**NESHAMINY SCHOOL DISTRICT
2001 OLD LINCOLN HIGHWAY
LANGHORNE, PENNSYLVANIA**

TO WHOM IT MAY CONCERN:

We, the undersigned, herewith propose and agree to furnish to the Neshaminy School District any one or all of the items that we have priced at the prices set opposite each item on the attached sheets.

This proposal is subject to all the terms of these specifications as printed on the attached pages and we hereby agree to enter into a written contract to furnish such item or items as may be awarded to us, and to furnish such security as these specifications require.

The undersigned bidder certifies to having read these specifications and offers to furnish the articles specified to the Neshaminy School District in exact accordance with the specifications and at the prices stated.

SIGNATURE

TITLE

**COMPANY
NAME**

ADDRESS

TELEPHONE

FAX

E-MAIL

DATE

BIDDER PROPOSAL # (if any)

TERMS OF PAYMENT

TOTAL \$ VALUE OF ITEMS BID

Bid Bond /Liquidated Damages (5%) OF TOTAL BID: _____

Envelopes should be sealed and plainly marked with the Bid Name and Bid Number. Return your signed bid to:

**Neshaminy School District
Attn: Director of Purchasing
2001 Old Lincoln Highway
Langhorne, PA 19047**

**Neshaminy School District
Purchase Price Schedule
Bid 19-20**

Submitted by: _____
(company name)

		78 Passenger	30 Passenger w/1 lift, 3 positions	78 Passenger w/1 lift, 3 positions	Year 1 Total Cost
Unit Bid Price		\$	\$	\$	\$
Number of Units		X 9	X 2	X 1	
Total \$		\$	\$	\$	\$

**Neshaminy School District
Vehicles Being Offered for Trade-In on Bid 19-20**

Trade-In's									
NSD Vehicle ID #	VIN #	Mileage	Year	Make	Body	Engine	Trans	Passengers	Trade-In Value
19	1BABKBKA85F225415	156,207	2005	BLUEBIRD	BLUEBIRD ALL	CAT	ALLISON	78 PASSENGER	\$
29	1BABKBKA35F225418	180,091	2005	BLUEBIRD	BLUEBIRD ALL	CAT	ALLISON	78 PASSENGER	\$
42	1BABKCKA25F225402	132,671	2005	BLUEBIRD	BLUEBIRD ALL	CAT	ALLISON	78 PASSENGER	\$
57	1BABKCKAX5F225406	143,661	2005	BLUEBIRD	BLUEBIRD ALL	CAT	ALLISON	78 PASSENGER	\$
65	1BABKCKA55F225409	141,379	2005	BLUEBIRD	BLUEBIRD ALL	CAT	ALLISON	78 PASSENGER	\$
66	1BABKCKA15F225410	138,399	2005	BLUEBIRD	BLUEBIRD ALL	CAT	ALLISON	78 PASSENGER	\$
67	1BABKCKA35F225411	146993	2005	BLUEBIRD	BLUEBIRD ALL	CAT	ALLISON	78 PASSENGER	\$
68	1BABKCKA55F225412	143,136	2005	BLUEBIRD	BLUEBIRD ALL	CAT	ALLISON	78 PASSENGER	\$
69	1BABKCKA75F225413	138,046	2005	BLUEBIRD	BLUEBIRD ALL	CAT	ALLISON	78 PASSENGER	\$
201	1BAKBCKA35F225943	181,817	2005	BLUEBIRD	BLUEBIRD VISION	CAT	ALLISON	42 PASSENGER LIFT	\$
202	1BAKBCKA15F225942	164,934	2005	BLUEBIRD	BLUEBIRD VISION	CAT	ALLISON	42 PASSENGER LIFT	\$
207	4UZABRCS37CX67054	180,502	2007	THOMAS	C-2	MBE900	ALLISON	42 PASSENGER LIFT	\$

NON-COLLUSION AFFIDAVIT

State of _____ Contract/Bid No _____
County of _____:

I state that I am _____ of _____
(Title) (Name of my firm)

and that I am authorized to make this affidavit on behalf of my firm, and its owners, directors, and officers. I am the person responsible in my firm for the price(s) and the amount of this bid.

I state that:

- (1) The price(s) and amount of this bid have been arrived at independently and without consultation, communication or agreement with any other contractor, bidder or potential bidder.
- (2) Neither the price(s) nor the amount of this bid, and neither the approximate price(s) nor the approximate amount of this bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed before the bid opening.
- (3) No attempt has been made or will be made to induce any firm or person to refrain from bidding on this contract, or to submit a bid higher than this bid, or to submit an intentionally high or noncompetitive bid or other form of complementary bid.
- (4) The bid of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive bid.
- (5) _____, its affiliates, subsidiaries, officers, directors and employees are (Name of my firm)

not currently under investigation by any governmental agency and have not in the last four years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract, except as follows: _____ (Indicate "none" if applicable.)

I state that _____ understands and acknowledges (Name of my firm)

that the above representations are material and important, and will be relied on by the Neshaminy School District Board of Directors when awarding the items for which this bid is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from the Neshaminy School District Board of Directors, of the true facts relating to the submission of bids for this contract.

(Print Name of Authorized Person and Company Position)

Signature of Authorized Person

Sworn to and subscribed before
me this _____ day of
_____, 20____

My commission Expires _____ Notary Public

**NESHAMINY SCHOOL DISTRICT
Chassis Specifications
2018 or Newer**

Two (2) up to 30 Passenger/up to three Wheel Chairs, Type C, Conventional Buses

NOTE: The chassis shall meet or exceed all Commonwealth of Pennsylvania and Federal requirements, regulations and revisions for school buses of the Type C, conventional buses and shall be of suitable size from factory for use with body manufacturer or lift equipped 30-passenger capacity body.

EXCEPTIONS: List any exceptions to specifications in the space provided below each item. Failure to note any deviation assumes compliance.

1. 2018 or newer Type C, up to 30 Passenger, conventional buses or equal

Meets Spec	
Yes	No

Exception(s):

2. Frame

- A. 30,000 GVW plate rating, minimum

Meets Spec	
Yes	No

Exception(s):

- B. Dual frame rails to be two-piece. Frame web to be 9 5/8" x .25" thick depth. Sub frame to be utilized in engine area, web to be 9" x 2 3/8" x .25" thick.

Meets Spec	
Yes	No

Exception(s):

- C. Minimum frame size to: 5/16" steel, 10 1/2" high with 3" flanges top and bottom sections measuring no more and no less than 10.1 cu. inches RBM, 120,000 PSI steel with a rust proof black paint, 505,000 pounds.

Meets Spec	
Yes	No

Exception(s):

- D. Frame rails are to be full length untapered for maximum strength – painted and undercoated

Meets Spec	
Yes	No

Exception(s):

3. Wheel base

- A. 159" wheelbase, maximum

Meets Spec	
Yes	No

Exception(s):

- B. Turning radius (curb to curb) 20' 8" maximum

Meets Spec	
Yes	No

Exception(s):

4. Axle

- A. Front axle: 10,000 lbs. capacity minimum. Heavy-duty leaf springs

Meets Spec	
Yes	No

- B. Rear: 17,500 lbs. minimum. With a ratio to allow speeds of 80 mph. top speed to be set with computer

Meets Spec	
Yes	No

- C. Front wheel bearing is to have oil type seals.

Meets Spec	
Yes	No

Exception(s):

- D. Wheels are to be 22.5" x 8.25" and hub piloted, painted black.
(No exceptions)

Meets Spec	
Yes	No

5. Tires

- A. Front: Factory balanced, Michelin XZE-2 255/70R/22.5 (16 Ply) highway, tubeless radial tires.

Meets Spec	
Yes	No

Exception(s):

- B. Rear four: Factory balanced Michelin XD-2 255/70R/22.5 (16 Ply) mud and snow tubeless radial tires.

Meets Spec	
Yes	No

Exception(s):

6. Suspension

- A. Front heavy-duty leaf spring suspension; 10,000 lbs. capacity at ground.

Meets Spec	
Yes	No

- B. Rear leaf springs: Airliner air suspension with a total capacity of 23,000 lbs.

Meets Spec	
Yes	No

- C. Two front and two rear direct acting, double action, piston type heavy-duty shock absorbers compatible with manufacturer's rated axle capacities.

Meets Spec	
Yes	No

Exception(s):

7. Anti-lock A.B.S. Brakes:

- A. Service: Front and rear air disc brakes shall be supplied.
Bendix ADB22X-V model with 17" vented rotors.
Dual Piston design.
Integrated Automatic Slack Adjusters.
Aluminum wheel hubs are required to be supplied.
Dash mounted parking brake release control.
Must meet all Federal and Pennsylvania State requirements.
(No exceptions)

Meets Spec	
Yes	No

- B. Emergency brakes: MGM 30 square inch spring brake system treadle valve control. Separate instrument panel mounted valve provided for parking.

Meets Spec	
Yes	No

Exception(s):

- C. Air compressor: Cummins, 18.7 CFM at 1200 RPMs, water-cooled, gear driven.
Air intake to be drawn from clean side of combustion air cleaner.

Meets Spec	
Yes	No

Exception(s):

- D. System to be equipped with Bendix Model AD-9 air dryer (heated) with automatic purge feature.

Meets Spec	
Yes	No

Exception(s):

- E. Meritor automatic slack adjusters to be installed on all four wheels.

Meets Spec	
Yes	No

Exception(s):

- F. Brake reservoir shall have two tanks with three reservoirs, wet, front and rear supply for a total of 3,460 cu. in.

Meets Spec	
Yes	No

Exception(s):

- G. Minimum total service brake area to be 806 square inches.

Meets Spec	
Yes	No

Exception(s):

- H. Air brake line tubing is to be clamped inside frame rails for protection.

Meets Spec	
Yes	No

Exception(s):

8. Steering:

- A. Full power integral design steering with the power unit mounted to steering column.

Meets Spec	
Yes	No

Exception(s):

- B. TRW steering model THP-60, and TRW hydraulic pump is required. Drag link to be one piece

Meets Spec	
Yes	No

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Exception(s):

- C. 18" steering wheel four-spoke with black soft rim and a tilting and telescoping column

Meets Spec	
Yes	No

Exception(s)

9. Electrical System:

- A. 12-volt system

Meets Spec	
Yes	No

Exception(s):

- B. 275 Amp Delco Remy 40 si model alternator required

Meets Spec	
Yes	No

Exception(s):

- C. Three Group 31, 12 volt, 2,280 cold cranking AMPS at 0o F, 435 minutes reserve capacity.

Meets Spec	
Yes	No

Exception(s):

- D. Battery tray: Roll out tray 23 ½" length x 15 ½" deep x 11" height, to house three group 31, 12 volt batteries, mounted on the driver's side of the bus. Compartment to be equipped with hinged door and recessed locking latch. Double 00 gauge battery cables will be furnished. A keeper cable shall be supplied for the battery tray eyebolt.

Meets Spec	
Yes	No

Exception(s):

- E. Heavy-duty color and number coded wiring throughout and protected by resetting circuit breakers. Fuse is acceptable only in circuit. Fully multi-plexed systems to utilize fuses and solid-state circuitry

Meets Spec	
Yes	No

Exception(s):

- F. All wiring shall be loomed, encased, or concealed possible within the body interior. The wire molding is to be installed on top of windows for easy access to wiring harness. This facilitates removal of the wire molding without removing the windows. The service benefit is improved access to wiring in the event of a failure.

Meets Spec

Yes	No

- G. Exterior electrical access panel is to be located below driver's side window. Compartment is to be weather tight and allow access to all electrical control circuit breakers and wiring termination center. Panel door to have an exterior key lock. The electrical schematic for the electrical panel is to be posted inside the panel door. A door stay is also to be incorporated in the door design to keep the door in a fixed position for repairs. Lock to be supplied for access door.

Meets Spec

Yes	No

Exception(s):

- H. Must be equipped with dual electric horns.

Meets Spec

Yes	No

Exception(s):

10. Instruments and Gauges:

- A. Speedometer, odometer, fuel gauge, oil pressure gauge, water temperature gauge, dual air pressure gauge, tachometer, voltmeter, and hour meter.

Meets Spec

Yes	No

Exception(s):

- B. Engine warning system with low oil pressure, low air, and high temperature alert light required.

Meets Spec

Yes	No

Exception(s):

- C. Maximum instrument panel height above driver's floor shall be no more than 26" to maximize driver's visibility

Meets Spec

Yes	No

Exception(s):

11. **Controls Are to Include:** Key starter, right of the steering column. High-beam indicator, headlight switch, dimmer switch, spring brake control, and hazard switch on steering column, self-canceling turn signals with indicator lights

Meets Spec	
Yes	No

Exception(s):

12. **Exhaust**

- A. Exhaust system shall be a single 16- gauge, 4" diameter, aluminized steel pipe from turbo to muffler, with heat shield at fuel tank 5" from muffler to exit.

Meets Spec	
Yes	No

Exception(s):

- B. The tailpipe is to exit out the rear of the unit.

Meets Spec	
Yes	No

13. **Fuel Tank:**

- A. Shall be 60-gallon safety tank with sump and brass drain plug.

Meets Spec	
Yes	No

Exception(s):

- B. To be mounted between the frame rails in the rear overhand area.

Meets Spec	
Yes	No

- C. Access to sending unit shall be provided through a removable access plate in the body floor.

Meets Spec	
Yes	No

Exception(s):

14. **Engine Specifications:**

- A. 2017 Diesel
B. Cummins ISB 6.7L -240 HP-(EPA2010) -560FT LBS OF TORQUE @2400 RPM AND HIGH PRESSURE COMMON RAIL FUEL SYSTEM. **(NO EXCEPTIONS)**

- C. After cooled – air to air
- D. Turbo Charged
- E. Operating fuel – Diesel **(No exceptions)**
- F. Electric key shutdown
- G. Engine to meet – 2017 Federal Emission standards
- H. Units to come with comprehensive engine manuals
- I. Heated fuel water separator in compliance with current GHG requirements (bidder to indicate Brand/model supplied _____)

Meets Spec	
Yes	No

Exception(s):

- J. Seven-years/150,000 miles NEC school bus engine warranty to be included.

Meets Spec	
Yes	No

Exception(s):

- K. Under hood mounted windshield wiper motors and windshield washer fluid reservoir.

Meets Spec	
Yes	No

Exception(s):

- L. Air Cleaner:

- a. Heavy-duty dry type
- b. Engine air intake shall be located at the front of the vehicle, above coach floor level, (combustion) cleanest possible source.

Meets Spec	
Yes	No

Exception(s):

- M. Cooling System:

- a. Radiator and fan are to be mounted in the front of the vehicle utilizing fan drawn and forced air for the most efficient cooling.
- b. Engine coolant radiator shall be mounted in tandem to the charge air radiator (one in front of the other). Coolant radiator shall be heavy-duty soldered brass construction. The radiator shall consist of 186 tubes with 15 fins per inch. Minimum radiator core cooling area shall be 709 square inches.
- c. The radiator is to be equipped with molded fiber reinforced nylon top and bottom tanks with integral seam free inlet and outlet fittings. These tanks are sealed to a core by a resilient dual molded gasket with a field repairable crimp type-retaining strip. The surge tank is to be molded nylon and mounted above the radiator with a sight glass or constructed of translucent

material for visual coolant level check and low coolant sensor with a warning light on the front dash. This will eliminate cracking in the radiator neck.

- d. Coolant recovery tank is to be molded nylon mounted above the radiator with a sight glass or constructed of translucent material for visual check; this design eliminates cracking in the radiator neck by replacing the top and bottom tanks with seam free integrally molded reinforced nylon.
- e. Charge air after cooler core area shall be a minimum of 709 square inches. The after cooler shall be welded aluminum construction, capable of withstanding pressure up to 25 PSI.
- f. Electric fan clutch with thermostat control must be installed on engine fan
- g. Coolant filter shall be supplied. **(No additive in filter)**
- h. All engine hoses to be silicone or Gates Blue Stripe.
- i. Extended life anti-freeze must protect from -34° F below 0°, to 265° F above 0°.

Meets Spec

Yes	No

Exception(s):

- N. Engine block heater: Bus to be equipped with an engine block heater 750 watt, with electrical connection built into the front of the bus with permanent cover to keep it clean and dry.

Meets Spec

Yes	No

- O. Engine coolant heater

- a. Webasto TSL 17 – or equal
- b. Webasto timer 7 DAY TIMER

Meets Spec

Yes	No

15. Bumpers:

- A. Front and rear to be ¼" plate steel, one piece, with die formed strength ridges. Height 12" minimum. Shall have two A-frame braces at each corner for added strength.

Meets Spec

Yes	No

Exception(s):

- B. Front bumper is to be mounted so as to be two inches minimum in front of grill.

Meets Spec

Yes	No

Exception(s):

16. Tow Hooks

- A. Front: Two mounted to frame
- B. Rear: Two mounted to frame

Meets Spec	
Yes	No

Exception(s):

17. Power Train:

- A. Type:
 - a. Allison automatic 2500 PTS Series, five speed forward, one reverse system, to be filled with Castrol, Transynd-Synthetic transmission fluid, and tagged that it has Transynd fluid in it.
 - b. Back-up alarm to be included (112-decibel minimum).
 - c. Auxiliary in line filter shall be furnished.
 - d. Transmission cooling shall be accomplished by a separate oil cooler heat exchanger external from radiator with minimum capacity of 1,550 BTU's per minute.
 - e. Transmission to be warranted for seven years/unlimited miles 100% parts and labor.

Meets Spec	
Yes	No

Exception(s):

- B. Drive Line: 4" diameter steel drive shaft(s) minimum. Each shaft dynamically balanced and have protective guard at each shaft. Spicer 1550 series components minimum. Shaft angle shall not exceed 6 degrees loaded or unloaded.

Meets Spec	
Yes	No

Exception(s):

- 18.** All chassis components shall be fully tested on a dynamometer before body mount or delivery.

Meets Spec	
Yes	No

Exception(s):

- 19.** Complete parts inventory for all chassis items shall be available with 24 hours from selling dealer at their location.

Meets Spec	
Yes	No

Exception(s):

- 20.** All chassis and body components to be manufactured and assembled in the United States of America. All bidders shall comply with the Pennsylvania Motor Vehicle procurement act of June 4, 1984 where by the motor vehicles as specified herein shall be manufactured in the United States.

Meets Spec

Yes	No

Exception(s):

- 21.** Current model year demonstrator vehicle must be available to the Neshaminy School District Transportation Department to review prior to the issuance of these specifications.

Meets Spec

Yes	No

NESHAMINY SCHOOL DISTRICT

Body Specifications:

2018 or Newer

Two (2) up to 30 Passenger/up to three Wheel Chairs, Type C, Conventional Bus

NOTE: The body shall meet or exceed all Commonwealth of Pennsylvania and Federal requirements, regulations and revisions for school buses of the Type C, conventional bus and shall be of suitable size from factory for use with chassis manufacturer or 30 passenger wheelchair lift equipped capacity chassis.

EXCEPTIONS: List any exceptions to specifications in the space provided below each item. Failure to note any deviation assumes compliance.

1. 2018 or newer Type C, conventional style bus or equal. Length to be approximately 25 feet and width is to be 8 feet with a maximum of 99" overhang in the rear of the vehicle and 1" spacer blocks to rise up the front of the vehicle.

Meets Spec

Yes	No

Exception(s):

2. Capacity:

- A. Up to 30 Passenger/up to 3 wheel chairs.

Meets Spec

Yes	No

Exception(s)

- B. Seats – 10 track mounted.

Meets Spec

Yes	No

Exception(s):

- C. Knee room - 27 inches, minimum.

Meets Spec

Yes	No

Exception(s):

- D. Aisle width – 12 inches.

Meets Spec

Yes	No

Exception(s):

- E. Width per passenger – 13 inches.

Meets Spec	
Yes	No

Exception(s):

3. Headroom

- A. 77" minimum required over a 5/8" marine grade plywood and vinyl floor covering.

Meets Spec	
Yes	No

Exception(s):

4. Windshield:

- A. Tinted safety plate.

Meets Spec	
Yes	No

Exception(s):

- B. 3,185 square inches of glass, minimum

Meets Spec	
Yes	No

Exception(s):

5. Interior Requirements:

- A. Side panels are to be aluminized steel, 22 gauge from the side windows to floor.

Meets Spec	
Yes	No

Exception(s):

- B. Floor is to be covered with 1/8" smooth flooring under the seats with ribbed aisles; rubber driver area. Rubber or vinyl entrance floor step tread; front and rear wheel housings are to be completely covered with molded rubber; metal cove molding at body sides, floor covering to be black color. All joints between the aisle rubber and smooth rubber flooring material are to be sealed with a synthetic rubber sealant to insure a waterproof seam. This specification enhances the appearance of the passenger compartments and permits easier cleaning and maintenance. Fuel sender inspection plate shall be supplied. All floor seams shall also be covered with an aluminum seam strip.

Meets Spec	
Yes	No

- C. Sub floor is to be 5/8" plywood marine grade. The plywood is to be screwed to the steel floor frame not nailed. This provides a much more solid bond. **(No exceptions)**

Meets Spec	
Yes	No

- D. Step well, three steps, 23" depth. Entrance steps shall be covered with ribbed black flooring with white nosing.

Meets Spec	
Yes	No

Exception(s):

6. Mirrors

- A. Left and right rearview heated Rosco mirrors 9" x 17" housing, separately adjustable, flat mirror 7" x 10", convex mirror 7" x 4", maneuverable by remote control. Must meet all Federal requirements

Meets Spec	
Yes	No

Exception(s):

- B. Two 7" x 13" oval Rosco Hawkeye cross view mirrors are to be installed on the right and left front corners. Both mirrors must be heated.

Meets Spec	
Yes	No

Exception(s):

- C. 6" x 30" inside mirror, safety plate

Meets Spec	
Yes	No

Exception(s):

- D. All exterior mirrors shall be heated.

Meets Spec	
Yes	No

Exception(s):

7. Heaters:

- A. 90,000 BTU minimum heater/defroster compliment of defroster/warm air outlets/snorkels sufficient to keep windshield, driver's window and entrance door glass free of fog, snow and ice. Full width defroster is to be furnished. The unit is also to defrost the driver's side window. Heated air to run a continuous outlet from

rear of driver's window, across entire windshield. High amperage switches to have three positions, including low, high, and maximum output. Inlet air is to pass through an easily accessible/cleanable dust particle filter before entering the heater coil. The heater coil shall be of durable copper tube/aluminum fin configuration.

30,600 BTU minimum heater/defroster located on right hand side. Heated air to run a continuous outlet from rear of driver's window, across entire windshield, to a vertical outlet directed toward the entrance door. Heater controls are to be mounted to left of driver. High amperage switches to have three positions, including low, high, and maximum output. Air is to pass through an easily accessible/cleanable dust particle filter.

Meets Spec

Yes	No

Exception(s):

- B. Heater inlet air shall pass through a driver controlled baffle chamber that allows selection of any mixture of fresh and reheated air desired.

Meets Spec

Yes	No

Exception(s):

- C. Access panels have a minimum number of fasteners to provide service for all working components.

Meets Spec

Yes	No

Exception(s):

- D. The driver will have two separate variable controls that can direct air from the central duct to the under-dash foot pedal area, and/or through outlets at the rear of the dash near the center of the bus. All heaters must include silicone or Versiguard hi-miler hoses and clamps.

Meets Spec

Yes	No

- E. Two each 40,000 BTU heaters to be located against the rear wall of the bus. All heater hoses to be Versiguard hi-miler or silicone.

Meets Spec

Yes	No

Exception(s):

- F. Two 6" auxiliary fans with two-speed motors shall be mounted in the upper center and upper left windshield area.

Meets Spec

Yes	No

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Exception(s):

- G. Heater cut off valves are to be manually controlled.

Meets Spec	
Yes	No

Exception(s):

- H. Dual heater bleeding system external of the body required.

Meets Spec	
Yes	No

Exception(s):

- I. Rear heaters to be suspended from the wall or mounted on the floor.

Meets Spec	
Yes	No

Exception(s):

8. Doors

- A. Entrance door is to be outward opening type, air operated, ball bearing suspended. Cushioned header pad to be installed above door

Meets Spec	
Yes	No

Exception(s):

- B. Entrance door shall be located on the right side of bus and a stainless steel grab rail shall be provided on right side as well as left side of step well.

Meets Spec	
Yes	No

Exception(s):

- C. Vertical closing edges on entrance door shall be equipped with flexible material to protect children's finger.

Meets Spec	
Yes	No

Exception(s):

- D. Emergency door shall be located at center rear at aisle. Door will have safety glass in lower door panel. Door opening shall meet current Federal requirements. Header pad shall be mounted over door with single point bar latch.

Meets Spec	
Yes	No

Exception(s):

- E. Rear emergency exit door is to include a vandal lock and door shall include red light to illuminate emergency door.

Meets Spec	
Yes	No

Exception(s):

- F. All emergency exits are to be marked inside and out with the appropriate decals and instructions.

Meets Spec	
Yes	No

Exception(s):

- G. Vandal locks are to be on the rear door and must be interlocked to ignition system.

Meets Spec	
Yes	No

Exception(s):

9. Step well is to be slant three-step entrance with step riser height of approximately 8".

Meets Spec	
Yes	No

Exception(s):

10. Seats

- A. All seats are to provide 13" per passenger and have a 12" aisle meeting DOT standards with front crash barriers on both sides, 27" minimum knee clearance. All seats are to be DOT High Back and tapered from hip to knee level to provide for easier loading and unloading. Wall and floor mounted seats right and left fastened with bolts and serrated washer faced lock nuts. Seat design must meet FMVSS#222.

Meets Spec	
Yes	No

- B. Seats are to be DOT High Back and covered with a minimum of 42 oz upholstery. Seat upholstery to be attached with staples for ease of repair, rivets are not acceptable. Seat color – brown. Barriers to be supplied with metal modesty panels forward of passenger seats.

Meets Spec	
Yes	No

Exception(s):

- C. Seat cushions are to be constructed using no less than ½” plywood bottoms. All seats are to be equipped with heavy-duty hinges mounted to the seat frame. This will allow the seat bottom cushion to flip forward for ease of cleaning and repair.

Meets Spec

Yes	No

- D. Driver’s seat: National or Bostrum Routemaster plus air ride, bolted to the floor. All foam, six-way easily adjustable, high-back seat, tilting back, semi-bucket must have three-point retractable seat belt with shoulder harness, equipped with a “D” ring. The “D” ring is to provide seven full inches of adjustment. This will enable the drivers to move the belt off their necks. Belt webbing to be orange. Armrests are to be included on both sides with flip-up armrests. Covering is to be vinyl/fabric material.

Meets Spec

Yes	No

Exception(s):

11. Sun visor is to be adjustable see-through Plexiglas and mounted over the windshield on the driver’s side.

Meets Spec

Yes	No

Exception(s):

12. Windshield Wipers

- A. Must be two-speed electric with parallelogram sweep to be bottom mounted with black, non-glare hardware. Individual motors, mounted under windshield area with single switch. Intermittent control to be included

Meets Spec

Yes	No

Exception(s):

- B. Wipers are to have wet arm capability.

Meets Spec

Yes	No

Exception(s):

- C. Wiper motor, heater core, dash wiring, headlights and linkage are to be accessible under front hood.

Meets Spec

Yes	No

Exception(s):

- D. Must have approved electric windshield washers with a minimum one-gallon reservoir located inside vehicle with easy access.

Meets Spec

Yes	No

Exception(s):

13. Glass

- A. Driver's window: Two piece sliding sash, extruded aluminum, or equal with security latch on front and rear sash total glass area is to be 588" square inches.

Meets Spec

Yes	No

Exception(s):

- B. Side windows: Two piece-split sashes bottom half-stationary top half-capable of being lowered, extruded aluminum frame. Four emergency push-out windows shall be included as follows: the 3rd and 4th sections on both sides and be vertically hinged. All windows shall have aluminum sash and removable from inside the bus. Glass to be dark tinted.

Meets Spec

Yes	No

Exception(s):

- C. Rear windows: The rear quarter windows and rear windows are to be mounted in rubber. Glass to be dark tinted.

Meets Spec

Yes	No

Exception(s):

- D. Entrance door: Four panes of glass, two in each half, total glass area is to be 1,044 square inches.

Meets Spec

Yes	No

Exception(s):

- E. Windshield is to be tinted for best driver visibility. Stirrup steps on cowl to insure ease of cleaning windshield.

Meets Spec

Yes	No

Exception(s):

- F. All glass in windshield, windows and doors shall be of approved type safety glass (so mounted that the permanent identification mark is visible) and of quality to prevent distortion of view in any direction and all glass to be tinted.

Meets Spec	
Yes	No

Exception(s):

14. Ventilation

- A. Static ventilator is to be located on the roof at front in low-pressure area.

Meets Spec	
Yes	No

Exception(s):

- B. Fresh air intake is to be located on the right side flowing through the heater core. The vent is to be controllable by the driver from a seated position.

Meets Spec	
Yes	No

Exception(s):

- C. One -Transpec dual-purpose roof/vent hatch. Hatch is to be mounted in location to meet Federal requirements.

Meets Spec	
Yes	No

Exception(s):

15. Body Construction

- A. Mill applied, electro-deposited primer-coated steel shall be used. Each part must be retreated with zinc primer coating after fabrication and before assembly.

Meets Spec	
Yes	No

- B. Minimum 14-gauge hat shaped roof bows one-piece from skirt on left side overhead to skirt right side shall be supplied. Bows shall not be pieced in any manner. For loading safety, manufacturer's longest available, full-length skirt is required

Meets Spec	
Yes	No

- C. Body sheet metal shall be fastened with rivets and adhesive on exterior.

Meets Spec	
Yes	No

- D. Minimum of four protective side rub rails shall be applied. These rails to be riveted to the structural bows and side panels. Tops of all rub rails to be caulked with

yellow silicone. Four double-ribbed 16-gauge steel applied rub rails are installed along both sides of the body. The rub rails are installed as follows:

- a. One below side windows, and extends from the front bow on the R/H, or the front cowl post on the L/H to the rear corner radius.
- b. One at seat (passenger) level, and extends from the front bow, both R/H and L/H around the rear corner radius, and continues to the rear emergency doorposts.
- c. One near the floor level, and extends from the front bow on both the R/H and L/H to the rear corner radius.
- d. One at the bottom of the skirt, and extends from the front bow on the R/H, or the front cowl post on the L/H, to the rear bumper (un-interrupted at the wheel housing cutouts).
- e. One at seat (passenger level) on lift door.

Meets Spec	
Yes	No

Exception(s):

- E. Outside, side panels are to be constructed of 16-gauge steel. Interior side and ceiling panels to be 22 gauge steel, minimum with aluminized steel side walls with mar resistant finish from bottom of window to floor level. Side panels shall extend from below the side windows to a distance of 16 ¼" below the floor (long length skirt). Rear corner panels are to be constructed of 20-gauge steel. The left hand rear panel to include nylon nuts and slot-head screws for license plate mounting. Roof sheets shall include a rain visor or gutter over windows. Front cowl panels are to be constructed of 11-gauge steel. Floor panels constructed of 14 gauge galvalume steel and reinforced with full width channel cross members. All riveted floor joints are to be reinforced with full width 3/16th x 1 ½" x 2" structural steel angles.

Meets Spec	
Yes	No

Exception(s):

- F. A removable, front upper inner panel is provided to allow access to the front roof cap area. A removable 20-gauge steel, rear, upper, inner panel is provided to allow access to the rear roof cap area. Removable wire molding, right and left, shall be provided to allow access to body wiring harnesses. Wire moldings are provided in sections. Textured, aluminized 22 gauge steel inside, side panels must be provided, extending from the windowsill down to the floor level, for the entire length of the body on both left and right sides. Headlining panels, spanning the entire side of the bus (window header to window header), are constructed of 22-gauge steel and are double-hemmed to provide additional joint strength.

Meets Spec	
Yes	No

Exception(s):

- G. Body shall be fully undercoated, under floor, skirt panels and wheel-wells. Mill applied electro-deposited prime coated steel shall be used. Each part must be re-treated with zinc primer coating after fabrication and before assembly.

Meets Spec

Yes	No

- H. Body tie down, Texas "U" bolt construction or double bolted mounting clips shall be used to further strengthen the body to chassis tie down.

Meets Spec

Yes	No

- I. Rear bumper is to be 14" formed, chassis frame mounted, one-piece 3/16" thick steel plated with die-formed strength ridges and 90-degree flange top and bottom. Corners wraparound 14" with double "A" frame bracing

Meets Spec

Yes	No

16. Floor Construction

- A. Main body floor joints to have a minimum 60% joint strength.

Meets Spec

Yes	No

- B. All body panels are to be zinc steel.

Meets Spec

Yes	No

Exception(s):

- C. The outside, side panels, from the side window to the bottom of the lower skirt to be 16-gauge smooth steel. Side panels are not to exceed 35" in length to facilitate repairs.

Meets Spec

Yes	No

Exception(s):

- D. Body to have full length one piece gusset rail at the floor line from front to rear of bus and from the seat rail to approximately 7" below the floor line. Impact rail is not to be part of exterior panel.

Meets Spec

Yes	No

Exception(s):

- E. The roof bows are to be one-piece construction, from floor skirt to floor skirt, 14-gauge minimum; "U" shaped design only.

Meets Spec

Yes	No

- F. The floor is to be made of formed sections using 14-gauge steel, flanged on each side. The "Z" channels are to be spaced between the floor joints. The floors to meet the Federal Motor Vehicle SS 221 joint strength.

Meets Spec

Yes	No

- G. Components or parts are to be rust proof and primed after fabrication and prior to assembly using an established and acceptable zinc phosphate process.

Meets Spec

Yes	No

Exception(s):

- H. Body must be total unit type construction.

Meets Spec

Yes	No

Exception(s):

17. Electrical

- A. Step well light to operate when door is opened. Light is to go off when door is closed.

Meets Spec

Yes	No

Exception(s):

- B. Rectangular lights are required. Front and rear roof clearance lights, front amber, and rear red. Front and rear skirt mounted reflectors shall be supplied. LED lights only, with shields or recessed.

Meets Spec

Yes	No

Exception(s):

- C. Rectangular lights are required. Front and rear cluster lights, center roof, front and rear, front amber, rear red. LED lights only, with shields or recessed.

Meets Spec

Yes	No

Exception(s):

- D. Four stop and tail lights. (7" & 4") LED lights only

Meets Spec	
Yes	No

Exception(s):

- E. One license plate light, in combination with the left taillight. LED lights only

Meets Spec	
Yes	No

Exception(s):

- F. Two back up lights – 7". LED lights only

Meets Spec	
Yes	No

Exception(s):

- G. Pennsylvania approved eight light warning system, hooded with black painted background. Warning system to have 7" diameter seal beam type lamps. A Weldon electronic flasher unit shall operate the system. Manual kill switch to be provided. Emergency override switch to be provided.

Meets Spec	
Yes	No

Exception(s):

- H. Self-canceling directional signals with indicator lights on the dash. Exterior, chassis supplied front amber, 7" rear amber. Also, side directional lights with shields below windows forward each side. LED lights only except chassis.

Meets Spec	
Yes	No

Exception(s):

- I. Multi-Plex wiring for body and chassis.

Meets Spec	
Yes	No

Exception(s):

- J. Double row dome lights with separate switch control for rear half of dome lights. Separate circuit for single dome light over driver. Dome lights to be mounted over seats, not in side panels.

Meets Spec	
Yes	No

Exception(s):

- K. Switch panel: Located to the left of the driver at elbow level for easy operation, individual circuit breakers or fuses for each circuit to be supplied. Circuits to be located in compartment behind switch panel with switch panel acting as an access door. Switches shall be rocker type design. This panel to be illuminated and switch label, fiber optically lit from behind. Exterior access to all body and chassis switches is to be available from a compartment under driver's window, if interior access is not available from manufacturer.

Meets Spec	
Yes	No

Exception(s):

- L. Stop Arm and Crossing Arm
- a. Supply and install air operated stop arm, fully reflectorized with two (2) LED lights. Octagon shaped.
 - b. Stop arm shall be automatically activated when the red warning light system is engaged and the same for the crossing arm. Stop arm shall be activated with the entrance door and must be equipped wind guard.
 - c. Specialty Manufacturing brand to be supplied.
 - d. Air operated safety-crossing arm, with magnet or mechanical keeper.

Meets Spec	
Yes	No

Exception(s):

- M. Unit to be equipped with four speakers spaced evenly throughout the bus (25 watt ceiling DLX speakers).

Meets Spec	
Yes	No

Exception(s):

- N. AM/FM/CD or MP3/Public Address system with four speakers and driver volume control knob is to be included.

Meets Spec	
Yes	No

Exception(s):

18. Sign covers shall be supplied. Reflective background is to be used for the front and rear sign.

Meets Spec	
Yes	No

Exception(s):

19. Accessories (Items A through F to be mounted for quick and easy access by driver)

- A. First aid kit (10 units). Must meet Federal and Pennsylvania specs

Meets Spec	
Yes	No

Exception(s):

- B. Body fluid clean up kit.

Meets Spec	
Yes	No

Exception(s):

- C. Wrecking bar.

Meets Spec	
Yes	No

Exception(s):

- D. Triangular warning device.

Meets Spec	
Yes	No

Exception(s):

- E. Fire extinguisher shall be five-pound dry chemical A-B-C type. Approved type shall be provided and suitably mounted so as to be readily accessible and available for use to the operator in case of emergency.

- F. Webbing Cutter.

Meets Spec	
Yes	No

Exception(s):

20. Mud Flaps

- A. Two front and Two rear.

Meets Spec	
Yes	No

Exception(s):

- B. Rear rubber fenders around exterior wheelhouse.

Meets Spec	
Yes	No

Exception(s):

21. Insulation

- A. Full 2" insulation in roof and sides to floor line. The R-value of the insulation is to be 6; fiberglass is not to be used as it will retain water if a leak develops.

Meets Spec	
Yes	No

Exception(s):

- B. Noise package to include first two sections over the driver's head. Acoustic headliner made of perforated steel and under floor noise insulation in driver's area. Driver's platform to have .62" thick plywood sub-floor with rubber floor cover

Meets Spec	
Yes	No

Exception(s):

- C. Special driver insulation and fully treated engine hood covering.

Meets Spec	
Yes	No

Exception(s):

- D. Manufacturer is to use the highest-grade noise reduction available in the engine area.

Meets Spec	
Yes	No

Exception(s):

22. Undercoating

- A. Entire underside of body, including floor member, side panels and fenders below floor level shall be coated with asphalt base or rubber base undercoating material applied by a spray method in order to seal, deaden sound, insulate and prevent oxidation of the underside of the body. Tectyle 121 method or approved equal.

Meets Spec	
Yes	No

Exception(s):

- B. Care must be taken to be certain no water drain holes designed into body are covered with undercoating material.

Meets Spec	
Yes	No

Exception(s):

- C. Fuel tank filler cap locking door to be provided.

Meets Spec	
Yes	No

Exception(s):

23. Painting

- A. Bus exterior to be painted national school bus chrome yellow including belt panel except for black front and rear bumpers and rub rails. **Roof to be painted white.** Entire bus to be rust proofed before and after fabrication using zinc phosphate. BASF polyurethane paint, with a five-year warranty, is required. **(No exceptions)**

Meets Spec	
Yes	No

- B. Light Grey color on interior ceiling and walls to be a hot, sprayed on baked enamel process.

Meets Spec	
Yes	No

Exception(s):

- C. Five-year warranty minimum warranty on exterior paint.

Meets Spec	
Yes	No

Exception(s):

24. Lettering

- A. The school bus sign is to be an 8" reflectorized sign.

Meets Spec	
Yes	No

Exception(s):

- B. The sign is to be lettered on both the front and rear at roof caps.

Meets Spec	
Yes	No

Exception(s):

- C. The sign is to be reflectorized.

Meets Spec	
Yes	No

Exception(s):

- D. Under the window, lateral strip is to be lettered, 6" minimum to read **"NESHAMINY SCHOOL DISTRICT"**

Meets Spec	
Yes	No

Exception(s):

- E. All buses are to be numbered on all four-corners and belt line at entrance door and center rear door and under the driver's window behind the stop arm sign and center of front hood. (All numbers will be furnished at a later date.)

Meets Spec	
Yes	No

Exception(s):

- F. Reflective Tape

- a. Tape is to be located in a 2" strip down the belt line of each vehicle full-length front to rear.
- b. The entire rear outline is to be ringed in a 2" strip.
- c. All emergency exits (doors, windows, hatches, etc.) must be outlined in a 1 ½" strip.

Meets Spec	
Yes	No

Exception(s):

25. Each bidder shall be required to include the manufacturer's specifications for the vehicle of which they intend to supply to Neshaminy School District. These specifications are to accompany their bid forms. Additionally, each bidder must furnish complete manufacturers brochures describing the vehicle on which their bid has been based, meeting the minimum requirements outlined and stated herein.

Meets Spec	
Yes	No

Exception(s):

26. Child Reminders are to be installed on all buses; they are to be equipped with a child seat check reminder system.

Meets Spec	
Yes	No

Exception(s):

27. All buses equipped with Pro-Vision Video System. DVR-704 color recorded kit includes DVR, lockable cage, SDHC 64gb memory card, Front mounted camera DVR 122 and

Rear mounted DVR 129 colored camera kits, AV cable kits, software and guides installed.

Meets Spec	
Yes	No

Exception(s):

28. GPS System - All buses are to have Zonar V3 GPS kit, wired and installed

Meets Spec	
Yes	No

Exception(s):

29. All units must be delivered and ready to operate by the proposed delivery date:
- _____

30. Special Needs Equipment

- A. Air Conditioning- An in-dash front air conditioner shall be supplied. Passenger area air conditioner with rear bulkhead In-Wall (IW) mounted evaporator to also be supplied.

American Cooling Technology (ACT) model ACT-23HD free blow system, 70,000 Btu total system shall be supplied.

Due to the District's training and experience, only ACT as specified is to be included in proposal.

Wherever the evaporator can be flush mounted, it shall be, otherwise; padding shall be installed on any evaporator projecting into the passenger compartment. One chassis OEM compressor driven off the engine shall be supplied and one 10 cid after market compressor driven off the engine shall be supplied (Two compressors total).

Passenger compartment rear-mount system:

(1) EV-2 in wall mounted evaporator with two dual shaft blower assemblies (60,000 Btu/Hr. minimum). Motors, mounted in vibration isolating rubber bushings, shall feature three speed continuous duty permanent magnets and shall utilize resistors to limit amperage requirements. Drain pan must be part of the evaporator, not the cover. Return air filter to be located at the coil, easily accessible. Copper tube evaporator coil with aluminum fins shall be completely enclosed in the evaporator housing with heavy duty welded aluminum evaporator assembly. Evaporator assembly must include high pressure/low pressure protection as part of the evaporator assembly as a means to protect the entire system including the compressor. Supply (1) CS-3 skirt mounted condenser rated at 82,000 Btu/Hr. with 12" diameter low profile condenser motors that are water sealed. Condenser to be constructed of heavy duty aluminum. It shall be installed to assure the coil face is exposed to fresh air from outside the skirt without interference from the skirt. The filter drier and sight glass to be located on

the condenser and O-rings shall be utilized on all fittings and on the filter drier. Corrosion resistant electrical connections are required. Aeroquip model GH-134 refrigerant hoses couple with plated steel fittings for maximum resistance to corrosion, refrigerant permeation and moisture ingress shall be supplied. Refrigerant fittings and hosing need to be compliant with SAE specification J2064.

Chassis OEM radiator mounted condenser shall be located in front of the radiator. Front Air Conditioner: Chassis OEM in-dash air conditioner is required. Rear system shall have dash or switch panel controls that include 3-speed fan switch and rotary thermostat controls. Shall be identified as to function on each control. Manual reset circuit breakers and relays required.

- B. Lift Door- A door to access the wheelchair lift shall be located behind the rear axle on the curb side of the bus. It shall have an upper window with dark tinted glass and a chain and loop system to serve as a positive lock hold-open device. The door shall have a vandallock so it can be secured.
- C. Lighting- A flush mounted light shall be located in the skirt below the lift door and a ceiling mounted dome light shall be located above the lift area. An exterior light shall be located aft of passenger entrance door. Pilot lights to indicate the lift door is ajar (red) and the lift is receiving power (green) shall be visible to the seated driver.
- D. Lift –A fully automatic lift with a capacity of 800 pounds minimum shall be supplied. To be a Braun Century model or approved equal. Lift shall operate with the ignition in the on position.
- E. Securements- QRT deluxe fully retractable system including shoulder/lapbelt to be supplied to accommodate three mobility devices in full length L-track. In addition to the floor, L-track to also be above the windows full length to allow flexible locations of shoulder belts. L-track fasteners to be installed on securement componentry at delivery. Each system shall include a storage pouch, supplied by the securement manufacturer.
- F. Seating-Track mounted seats to accommodate 30 passengers to be supplied. Each seat is to be track mounted. Seats must be seat-belt ready to allow for customer to install seatbelts at a later time.
- G. Interlocks-all necessary interlocks to prevent bus movement when lift is not in fully stowed position are to be supplied.
- H. Signage- one 6" x 6" universal handicap sign to be supplied at delivery loaded loose.

**NESHAMINY SCHOOL DISTRICT
Chassis Specifications
2018 or Newer**

Nine (9):78 Passenger, Type C, Conventional Buses

NOTE: The chassis shall meet or exceed all Commonwealth of Pennsylvania and Federal requirements, regulations and revisions for school buses of the Type C, conventional buses and shall be of suitable size from factory for use with body manufacturer or 78 passenger capacity body.

EXCEPTIONS: List any exceptions to specifications in the space provided below each item. Failure to note any deviation assumes compliance.

1. 2018 or newer Type C, type C, 78 Passenger, conventional buses or equal

Meets Spec	
Yes	No

Exception(s):

2. **Frame**

- A. 33,000 GVW plate rating, minimum

Meets Spec	
Yes	No

Exception(s):

- B. Dual frame rails to be two-piece. Frame web to be 9 5/8" x .25" thick depth. Sub frame to be utilized in engine area, web to be 9" x 2 3/8" x .25" thick.

Meets Spec	
Yes	No

Exception(s):

- C. Minimum frame size to: 5/16" steel, 10 1/2" high with 3" flanges top and bottom sections measuring no more and no less than 10.1 cu. inches RBM, 120,000 PSI steel with a rust proof black paint, 505,000 pounds.

Meets Spec	
Yes	No

Exception(s):

- D. Frame rails are to be full length untapered for maximum strength – painted and undercoated

Meets Spec	
Yes	No

Exception(s):

3. **Wheel base**

- A. 279" wheelbase, maximum

Meets Spec	
Yes	No

Exception(s):

- B. Turning radius (curb to curb) 34' 9" maximum

Meets Spec	
Yes	No

Exception(s):

4. Axle

- A. Front axle: 12,000 lbs. capacity minimum. Heavy-duty leaf springs

Meets Spec	
Yes	No

- B. Rear: 23,000 lbs. minimum. With a ratio to allow speeds of 80 mph. top speed to be set with computer

Meets Spec	
Yes	No

- C. Front wheel bearing is to have oil type seals.

Meets Spec	
Yes	No

Exception(s):

- D. Wheels are to be 22.5" x 8.25" and hub piloted, painted black. **(No exceptions)**

Meets Spec	
Yes	No

5. Tires

- A. Front: Factory balanced, Michelin XZE-2 11R/22.5 (16 Ply) highway, tubeless radial tires.

Meets Spec	
Yes	No

Exception(s):

- B. Rear four: Factory balanced, Michelin XDN-2 11R/22.5 (16 Ply) mud and snow tubeless radial tires.

Meets Spec	
Yes	No

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Exception(s):

6. Suspension

- A. Front heavy-duty leaf spring suspension; 12,000 lbs. capacity at ground.

Meets Spec	
Yes	No

- B. Rear leaf springs: Airliner air suspension with a total capacity of 23,000 lbs.

Meets Spec	
Yes	No

- C. Two front and two rear direct acting, double action, piston type heavy-duty shock absorbers compatible with manufacturer's rated axle capacities.

Meets Spec	
Yes	No

Exception(s):

7. Anti-lock A.B.S. Brakes

- A. Service: Front and rear air disc brakes shall be supplied. Bendix ADB22X-V model with 17" vented rotors. Dual Piston design. Integrated Automatic Slack Adjusters. Aluminum wheel hubs are required to be supplied. Dash mounted parking brake release control. Must meet all Federal and Pennsylvania State requirements. **(No exceptions)**

Meets Spec	
Yes	No

- B. Emergency brakes: MGM 30 square inch spring brake system treadle valve control. Separate instrument panel mounted valve provided for parking.

Meets Spec	
Yes	No

Exception(s):

- C. Air compressor: Cummins, 18.7 CFM at 1200 RPMs, water-cooled, gear driven. Air intake to be drawn from clean side of combustion air cleaner.

Meets Spec	
Yes	No

Exception(s):

- D. System to be equipped with Bendix Model AD-9 air dryer (heated) with automatic purge feature.

Meets Spec	
Yes	No

Exception(s):

- E. Meritor Automatic slack adjusters to be installed on all four wheels.

Meets Spec	
Yes	No

Exception(s):

- F. Brake reservoir shall have two tanks with three reservoirs, wet, front and rear supply for a total of 3,460 cu. in.

Meets Spec	
Yes	No

Exception(s):

- G. Minimum total service brake area to be 806 square inches.

Meets Spec	
Yes	No

Exception(s):

- H. Air brake line tubing is to be clamped inside frame rails for protection.

Meets Spec	
Yes	No

Exception(s):

8. Steering

- A. Full power integral design steering with the power unit mounted to steering column.

Meets Spec	
Yes	No

Exception(s):

- B. TRW steering model THP-60, and TRW hydraulic pump is required. Drag link to be one piece

Meets Spec	
Yes	No

Exception(s):

- C. 18" steering wheel four-spoke with black soft rim and a tilting and telescoping column

Meets Spec	
Yes	No

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Exception(s):

9. Electrical System

- A. 12-volt system.

Meets Spec	
Yes	No

Exception(s):

- B. 275 Amp Delco Remy 40 si model alternator required

Meets Spec	
Yes	No

Exception(s):

- C. Three Group 31, 12 volt, 2,280 cold cranking AMPS at 0o F, 435 minutes reserve capacity.

Meets Spec	
Yes	No

Exception(s):

- D. Battery tray: Roll out tray 23 ½" length x 15 ½" deep x 11" height, to house three group 31, 12 volt batteries, mounted on the driver's side of the bus. Compartment to be equipped with hinged door and recessed locking latch. Double 00 gauge battery cables will be furnished. A keeper cable shall be supplied for the battery tray eyebolt.

Meets Spec	
Yes	No

Exception(s):

- E. Heavy-duty color and number coded wiring throughout and protected by resetting circuit breakers. Fuse is acceptable only in circuit. Fully multi-plexed systems to utilize fuses and solid state circuitry

Meets Spec	
Yes	No

Exception(s):

- F. All wiring shall be loomed, encased, or concealed possible within the body interior. The wire molding is to be installed on top of windows for easy access to wiring harness. This facilitates removal of the wire molding without removing the windows. The service benefit is improved access to wiring in the event of a failure.

Meets Spec	
Yes	No

- G. Exterior electrical access panel is to be located below driver's side window. Compartment is to be weather tight and allow access to all electrical control circuit breakers and wiring termination center. Panel door to have an exterior key lock. The electrical schematic for the electrical panel is to be posted inside the panel door. A door stay is also to be incorporated in the door design to keep the door in a fixed position for repairs. Lock to be supplied for access door.

Meets Spec	
Yes	No

Exception(s):

- H. Must be equipped with dual electric horns.

Meets Spec	
Yes	No

Exception(s):

10. Instruments and Gauges

- A. Speedometer, odometer, fuel gauge, oil pressure gauge, water temperature gauge, dual air pressure gauge, tachometer, voltmeter, and hour meter.

Meets Spec	
Yes	No

Exception(s):

- B. Engine warning system with low oil pressure, low air, and high temperature alert light required.

Meets Spec	
Yes	No

Exception(s):

- C. Maximum instrument panel height above driver's floor shall be no more than 26" to maximize driver's visibility

Meets Spec	
Yes	No

Exception(s):

11. **Controls Are to Include:** Key starter, right of the steering column. High-beam indicator, headlight switch, dimmer switch, spring brake control, and hazard switch on steering column, self-canceling turn signals with indicator lights

Meets Spec	
Yes	No

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Exception(s):

12. Exhaust

- A. Exhaust system shall be a single 16- gauge, 4" diameter, aluminized steel pipe from turbo to muffler, with heat shield at fuel tank 5" from muffler to exit.

Meets Spec	
Yes	No

Exception(s):

- B. The tailpipe is to exit out the rear of the unit.

Meets Spec	
Yes	No

13. Fuel Tank

- A. Shall be 100-gallon safety tank with sump and brass drain plug.

Meets Spec	
Yes	No

Exception(s):

- B. To be mounted between the frame rails in the rear overhand area.

Meets Spec	
Yes	No

- C. Access to sending unit shall be provided through a removable access plate in the body floor.

Meets Spec	
Yes	No

Exception(s):

14. Engine Specifications

- A. 2017 Diesel
- B. Cummins ISB 6.7L -250 HP-(EPA2010) -660FT LBS OF TORQUE @1600 RPM AND HIGH PRESSURE COMMON RAIL FUEL SYSTEM. **(NO EXCEPTIONS)**
- C. After cooled – air to air
- D. Turbo Charged
- E. Operating fuel – Diesel **(No exceptions)**
- F. Electric key shutdown
- G. Engine to meet – 2017 Federal Emission standards
- H. Units to come with comprehensive engine manuals

- I. Heated fuel water separator in compliance with current GHG requirements (bidder to indicate Brand/model supplied _____)

Meets Spec	
Yes	No

Exception(s):

- J. Seven-years/150,000 miles NEC school bus engine warranty to be included.

Meets Spec	
Yes	No

Exception(s):

- K. Under hood mounted windshield wiper motors and windshield washer fluid reservoir.

Meets Spec	
Yes	No

Exception(s):

- L. Air Cleaner:

- a. Heavy-duty dry type
- b. Engine air intake shall be located at the front of the vehicle, above coach floor level, (combustion) cleanest possible source.

Meets Spec	
Yes	No

Exception(s):

- M. Cooling System:

- a. Radiator and fan are to be mounted in the front of the vehicle utilizing fan drawn and forced air for the most efficient cooling.
- b. Engine coolant radiator shall be mounted in tandem to the charge air radiator (one in front of the other). Coolant radiator shall be heavy-duty soldered brass construction. The radiator shall consist of 186 tubes with 15 fins per inch. Minimum radiator core cooling area shall be 709 square inches.
- c. The radiator is to be equipped with molded fiber reinforced nylon top and bottom tanks with integral seam free inlet and outlet fittings. These tanks are sealed to a core by a resilient dual molded gasket with a field repairable crimp type-retaining strip. The surge tank is to be molded nylon and mounted above the radiator with a sight glass or constructed of translucent material for visual coolant level check and low coolant sensor with a warning light on the front dash. This will eliminate cracking in the radiator neck.
- d. Coolant recovery tank is to be molded nylon mounted above the radiator with a sight glass or constructed of translucent material for visual check;

this design eliminates cracking in the radiator neck by replacing the top and bottom tanks with seam free integrally molded reinforced nylon.

- e. Charge air after cooler core area shall be a minimum of 709 square inches. The after cooler shall be welded aluminum construction, capable of withstanding pressure up to 25 PSI.
- f. Electric fan clutch with thermostat control must be installed on engine fan
- g. Coolant filter shall be supplied. **(No additive in filter)**
- h. All engine hoses to be silicone or Gates Blue Stripe.
- i. Extended life anti-freeze must protect from -34°F below 0°, to 265°F above 0°.

Meets Spec

Yes	No

Exception(s):

- N. **Engine block heater:** Bus to be equipped with an engine block heater 750 watt, with electrical connection built into the front of the bus with permanent cover to keep it clean and dry.

Meets Spec

Yes	No

- O. Engine coolant heater

- a. Webasto TSL 17 – or equal
- b. Webasto timer 7 DAY TIMER

Meets Spec

Yes	No

15. Bumpers

- A. Front and rear to be ¼" plate steel, one piece, with die formed strength ridges. Height 12" minimum. Shall have two A-frame braces at each corner for added strength.

Meets Spec

Yes	No

Exception(s):

- B. Front bumper is to be mounted so as to be two inches minimum in front of grill.

Meets Spec

Yes	No

Exception(s):

16. Tow Hooks

- A. Front: Two mounted to frame
- B. Rear: Two mounted to frame

Meets Spec	
Yes	No

Exception(s):

17. Power Train

A. Type:

- a. Allison automatic 2500 PTS Series, five speed forward, one reverse system, to be filled with Castrol, Transynd-Synthetic transmission fluid, and tagged that it has Transynd fluid in it.
- b. Back-up alarm to be included (112-decibel minimum).
- c. Auxiliary in line filter shall be furnished.
- d. Transmission cooling shall be accomplished by a separate oil cooler heat exchanger external from radiator with minimum capacity of 1,550 BTU's per minute.
- e. Transmission to be warranted for seven years/unlimited miles 100% parts and labor.

Meets Spec	
Yes	No

Exception(s):

- B. Drive Line: 4" diameter steel drive shaft(s) minimum. Each shaft dynamically balanced and have protective guard at each shaft. Spicer 1550 series components minimum. Shaft angle shall not exceed 6 degrees loaded or unloaded.

Meets Spec	
Yes	No

Exception(s):

18. All chassis components shall be fully tested on a dynamometer before body mount or delivery.

Meets Spec	
Yes	No

Exception(s):

19. Complete parts inventory for all chassis items shall be available with 24 hours from selling dealer at their location.

Meets Spec	
Yes	No

Exception(s):

20. All chassis and body components to be manufactured and assembled in the United States of America. All bidders shall comply with the Pennsylvania Motor Vehicle

procurement act of June 4, 1984 where by the motor vehicles as specified herein shall be manufactured in the United States.

Meets Spec	
Yes	No

Exception(s):

- 21.** Current model year demonstrator vehicle must be available to the Neshaminy School District Transportation Department to review prior to the issuance of these specifications.

Meets Spec	
Yes	No

NESHAMINY SCHOOL DISTRICT

Body Specifications:

2018 or Newer

Nine (9) 78 Passenger, Type C, Conventional Bus

NOTE: The body shall meet or exceed all Commonwealth of Pennsylvania and Federal requirements, regulations and revisions for school buses of the Type C, conventional bus and shall be of suitable size from factory for use with chassis manufacturer or 78 passenger capacity chassis.

EXCEPTIONS: List any exceptions to specifications in the space provided below each item. Failure to note any deviation assumes compliance.

1. 2018 or newer Type C, conventional style bus or equal. Length to be approximately 39 feet and width is to be 8 feet with a maximum of 81" overhang in the front of the vehicle and 1" spacer blocks to rise up the front of the vehicle.

Meets Spec	
Yes	No

Exception(s):

2. Capacity

- A. 78 Passenger

Meets Spec	
Yes	No

Exception(s):

- B. Rows – 13.

Meets Spec	
Yes	No

Exception(s)

- C. Knee room - 25.5 inches, minimum.

Meets Spec	
Yes	No

Exception(s):

- D. Aisle width – 12 inches.

Meets Spec	
Yes	No

Exception(s):

- E. Width per passenger – 13 inches.

Meets Spec	
Yes	No

Exception(s):

3. Headroom:

- A. 77" minimum required over a 5/8" plywood and vinyl floor covering.

Meets Spec	
Yes	No

Exception(s):

4. Windshield

- A. Tinted safety plate.

Meets Spec	
Yes	No

Exception(s):

- B. 3,185 square inches of glass, minimum

Meets Spec	
Yes	No

Exception(s):

5. Interior Requirements

- A. Side panels are to be aluminized steel, 22 gauge from the side windows to set rails.

Meets Spec	
Yes	No

Exception(s):

- B. Floor is to be covered with 1/8" smooth flooring under the seats with ribbed aisles; rubber driver area. Rubber or vinyl entrance floor step tread; front and rear wheel housings are to be completely covered with molded rubber; metal cove molding at body sides, floor covering to be black color. All joints between the aisle rubber and smooth rubber flooring material are to be sealed with a synthetic rubber sealant to insure a waterproof seam. This specification enhances the appearance of the passenger compartments and permits easier cleaning and maintenance. Fuel sender inspection plate shall be supplied. All floor seams shall also be covered with an aluminum seam strip.

Meets Spec	
Yes	No

- C. Sub floor is to be 5/8" plywood marine grade. The plywood is to be screwed to the steel floor frame not nailed. This provides a much more solid bond. **(No exceptions)**

Meets Spec	
Yes	No

- D. Step well, three steps, 23" depth. Entrance steps shall be covered with ribbed black flooring with white nosing.

Meets Spec	
Yes	No

Exception(s):

6. Mirrors

- A. Left and right rearview heated Rosco mirrors 9" x 17" housing, separately adjustable, flat mirror 7" x 10", convex mirror 7" x 4", maneuverable by remote control. Must meet all Federal requirements

Meets Spec	
Yes	No

Exception(s):

- B. Two 7" x 13" oval Rosco Hawkeye cross view mirrors are to be installed on the right and left front corners. Both mirrors must be heated.

Meets Spec	
Yes	No

Exception(s):

- C. 6" x 30" inside mirror, safety plate

Meets Spec	
Yes	No

Exception(s):

- D. All exterior mirrors shall be heated.

Meets Spec	
Yes	No

Exception(s):

7. Heaters

- A. 90,000 BTU minimum heater/defroster compliment of defroster/warm air outlets/snorkels sufficient to keep windshield, driver's window and entrance door glass free of fog, snow and ice. Full width defroster is to be furnished. The unit is also to defrost the driver's side window. Heated air to run a continuous outlet from rear of driver's window, across entire windshield. High amperage switches to have

three positions, including low, high, and maximum output. Inlet air is to pass through an easily accessible/cleanable dust particle filter before entering the heater coil. The heater coil shall be of durable copper tube/aluminum fin configuration.

30,600 BTU minimum heater/defroster located on right hand side. Heated air to run a continuous outlet from rear of driver's window, across entire windshield, to a vertical outlet directed toward the entrance door. Heater controls are to be mounted to left of driver. High amperage switches to have three positions, including low, high, and maximum output. Air is to pass through an easily accessible/cleanable dust particle filter.

Meets Spec

Yes	No

Exception(s):

- B. Heater inlet air shall pass through a driver controlled baffle chamber that allows selection of any mixture of fresh and reheated air desired.

Meets Spec

Yes	No

Exception(s):

- C. Access panels have a minimum number of fasteners to provide service for all working components.

Meets Spec

Yes	No

Exception(s):

- D. The driver will have two separate variable controls that can direct air from the central duct to the under-dash foot pedal area, and/or through outlets at the rear of the dash near the center of the bus. All heaters must include silicone or Versiguard hi-miler hoses and clamps.

Meets Spec

Yes	No

- E. 80,000 BTU under seat heater is to be located on the left side rear of the wheel housing. All heater hoses to be Versiguard hi-miler or silicone.

Meets Spec

Yes	No

Exception(s):

- F. Two 6" auxiliary fans with two-speed motors shall be mounted in the upper center and upper left windshield area.

Meets Spec

Yes	No

Exception(s):

- G. Heater cut off valves are to be manually controlled.

Meets Spec	
Yes	No

Exception(s):

- H. Dual heater bleeding system external of the body required.

Meets Spec	
Yes	No

Exception(s):

- I. Rear heater is to be suspended from the seat frame or mounted on the floor.

Meets Spec	
Yes	No

Exception(s):

8. Doors

- A. Entrance door is to be outward opening type, air operated, ball bearing suspended. Cushioned header pad to be installed above door

Meets Spec	
Yes	No

Exception(s):

- B. Entrance door shall be located on the right side of bus and a stainless steel grab rail shall be provided, left side of step well.

Meets Spec	
Yes	No

Exception(s):

- C. Vertical closing edges on entrance door shall be equipped with flexible material to protect children's finger.

Meets Spec	
Yes	No

Exception(s):

- D. Emergency door shall be located at center rear at aisle. Door will have safety glass in lower door panel. Door opening shall meet current Federal requirements. Header pad shall be mounted over door with single point bar latch.

Meets Spec	
Yes	No

Exception(s):

- E. Rear emergency exit door is to include a vandal lock and door shall include red light to illuminate emergency door.

Meets Spec	
Yes	No

Exception(s):

- F. All emergency exits are to be marked inside and out with the appropriate decals and instructions.

Meets Spec	
Yes	No

Exception(s):

- G. Vandal locks are to be on the rear door and must be interlocked to ignition system.

Meets Spec	
Yes	No

Exception(s):

9. Step well is to be slant three-step entrance with step riser height of approximately 8".

Meets Spec	
Yes	No

Exception(s):

10. Seats

- A. All seats are to provide 13" per passenger and have a 12" aisle meeting DOT standards with front crash barriers on both sides, 24" minimum knee clearance. All seats are to be DOT High Back and tapered from hip to knee level to provide for easier loading and unloading. Wall and floor mounted seats right and left fastened with bolts and serrated washer faced lock nuts. Seat design must meet FMVSS#222.

Meets Spec	
Yes	No

- B. Seats are to be DOT High Back and covered with a minimum of 42 oz upholstery. Seat upholstery to be attached with staples for ease of repair, rivets are not acceptable. Seat color – brown. Barriers to be supplied with metal modesty panels forward of passenger seats.

Meets Spec	
Yes	No

Exception(s):

- C. Seat cushions are to be constructed using no less than ½” plywood bottoms. All seats are to be equipped with heavy-duty hinges mounted to the seat frame. This will allow the seat bottom cushion to flip forward for ease of cleaning and repair.

Meets Spec

Yes	No

- D. Driver’s seat: National or Bostrum Routemaster plus air ride, bolted to the floor. All foam, six-way easily adjustable, high-back seat, tilting back, semi-bucket must have three-point retractable seat belt with shoulder harness, equipped with a “D” ring. The “D” ring is to provide seven full inches of adjustment. This will enable the drivers to move the belt off their necks. Belt webbing to be orange. Armrests are to be included on both sides with flip-up armrests. Covering is to be vinyl/fabric material.

Meets Spec

Yes	No

Exception(s):

11. Sun visor is to be adjustable see-through Plexiglas and mounted over the windshield on the driver’s side.

Meets Spec

Yes	No

Exception(s):

12. Windshield Wipers

- A. Must be two-speed electric with parallelogram sweep to be bottom mounted with black, non-glare hardware. Individual motors, mounted under windshield area with single switch. Intermittent control to be included

Meets Spec

Yes	No

Exception(s):

- B. Wipers are to have wet arm capability.

Meets Spec

Yes	No

Exception(s):

- C. Wiper motor, heater core, dash wiring, headlights and linkage are to be accessible under front hood.

Meets Spec

Yes	No

Exception(s):

- D. Must have approved electric windshield washers with a minimum one-gallon reservoir located inside vehicle with easy access.

Meets Spec	
Yes	No

Exception(s):

13. Glass

- A. Driver's window: Two piece sliding sash, extruded aluminum, or equal with security latch on front and rear sash total glass area is to be 588" square inches.

Meets Spec	
Yes	No

Exception(s):

- B. Side windows: Two piece-split sashes bottom half-stationary top half-capable of being lowered, extruded aluminum frame. Six emergency push-out windows shall be included as follows: the 3rd, 8th, and 11th sections on both sides and be vertically hinged. All windows shall have aluminum sash and removable from inside the bus. Glass to be dark tinted.

Meets Spec	
Yes	No

Exception(s):

- C. Rear windows: The rear quarter windows and rear windows are to be mounted in rubber. Glass to be dark tinted.

Meets Spec	
Yes	No

Exception(s):

- D. Entrance door: Four panes of glass, two in each half, total glass area is to be 1,044 square inches.

Meets Spec	
Yes	No

Exception(s):

- E. Windshield is to be tinted for best driver visibility. Stirrup steps on cowl to insure ease of cleaning windshield.

Meets Spec	
Yes	No

Exception(s):

- F. All glass in windshield, windows and doors shall be of approved type safety glass (so mounted that the permanent identification mark is visible) and of quality to prevent distortion of view in any direction and all glass to be tinted.

Meets Spec	
Yes	No

Exception(s):

14. Ventilation

- A. Static ventilator is to be located on the roof at front in low-pressure area.

Meets Spec	
Yes	No

Exception(s):

- B. Fresh air intake is to be located on the right side flowing through the heater core. The vent is to be controllable by the driver from a seated position.

Meets Spec	
Yes	No

Exception(s):

- C. Two -Transpec dual-purpose roof/vent hatch. Hatch is to be mounted in locations to meet Federal requirements.

Meets Spec	
Yes	No

Exception(s):

15. Body Construction

- A. Mill applied, electro-deposited primer-coated steel shall be used. Each part must be retreated with zinc primer coating after fabrication and before assembly.

Meets Spec	
Yes	No

- B. Minimum 14-gauge hat shaped roof bows one-piece from skirt on left side overhead to skirt right side shall be supplied. Bows shall not be pieced in any manner. For loading safety, manufacturer's longest available, full-length skirt is required

Meets Spec	
Yes	No

- C. Body sheet metal shall be fastened with rivets and adhesive on exterior.

Meets Spec	
Yes	No

- D. Minimum of four protective side rub rails shall be applied. These rails to be riveted to the structural bows and side panels. Tops of all rub rails to be caulked with

yellow silicone. Four double-ribbed 16-gauge steel applied rub rails are installed along both sides of the body. The rub rails are installed as follows:

- a. One below side windows, and extends from the front bow on the R/H, or the front cowl post on the L/H to the rear corner radius.
- b. One at seat (passenger) level, and extends from the front bow, both R/H and L/H around the rear corner radius, and continues to the rear emergency doorposts.
- c. One near the floor level, and extends from the front bow on both the R/H and L/H to the rear corner radius.
- d. One at the bottom of the skirt, and extends from the front bow on the R/H, or the front cowl post on the L/H, to the rear bumper (un-interrupted at the wheel housing cutouts).

Meets Spec

Yes	No

Exception(s):

- E. Outside, side panels are to be constructed of 16-gauge steel. Interior side and ceiling panels to be 22 gauge steel, minimum with aluminized steel side walls with mar resistant finish from bottom of window to floor level. Side panels shall extend from below the side windows to a distance of 16 ¼" below the floor (long length skirt). Rear corner panels are to be constructed of 20-gauge steel. The left hand rear panel to include nylon nuts and slot-head screws for license plate mounting. Roof sheets shall include a rain visor or gutter over windows. Front cowl panels are to be constructed of 11-gauge steel. Floor panels constructed of 14 gauge galvalume steel and reinforced with full width channel cross members. All riveted floor joints are to be reinforced with full width 3/16th x 1 ½" x 2" structural steel angles.

Meets Spec

Yes	No

Exception(s):

- F. A removable, front upper inner panel is provided to allow access to the front roof cap area. A removable 20-gauge steel, rear, upper, inner panel is provided to allow access to the rear roof cap area. Removable wire molding, right and left, shall be provided to allow access to body wiring harnesses. Wire moldings are provided in sections. Textured, aluminized 22 gauge steel inside, side panels must be provided, extending from the windowsill down to the floor level, for the entire length of the body on both left and right sides. Headlining panels, spanning the entire side of the bus (window header to window header), are constructed of 22-gauge steel and are double-hemmed to provide additional joint strength.

Meets Spec

Yes	No

Exception(s):

- G. Body shall be fully undercoated, under floor, skirt panels and wheel-wells. Mill applied electro-deposited prime coated steel shall be used. Each part must be re-treated with zinc primer coating after fabrication and before assembly.

Meets Spec	
Yes	No

- H. Body tie down, Texas "U" bolt construction or double bolted mounting clips shall be used to further strengthen the body to chassis tie down.

Meets Spec	
Yes	No

- I. Rear bumper is to be 14" formed, chassis frame mounted, one-piece 3/16" thick steel plated with die-formed strength ridges and 90-degree flange top and bottom. Corners wraparound 14" with double "A" frame bracing

Meets Spec	
Yes	No

16. Floor Construction

- A. Main body floor joints to have a minimum 60% joint strength.

Meets Spec	
Yes	No

- B. All body panels are to be zinc steel.

Meets Spec	
Yes	No

Exception(s):

- C. The outside, side panels, from the side window to the bottom of the lower skirt to be 16-gauge smooth steel. Side panels are not to exceed 35" in length to facilitate repairs.

Meets Spec	
Yes	No

Exception(s)

- D. Body to have full length one piece gusset rail at the floor line from front to rear of bus and from the seat rail to approximately 7" below the floor line. Impact rail is not to be part of exterior panel.

Meets Spec	
Yes	No

Exception(s):

- E. The roof bows are to be one-piece construction, from floor skirt to floor skirt, 14-gauge minimum; "U" shaped design only.

Meets Spec	
Yes	No

- F. The floor is to be made of formed sections using 14-gauge steel, flanged on each side. The "Z" channels are to be spaced between the floor joints. The floors to meet the Federal Motor Vehicle SS 221 joint strength.

Meets Spec	
Yes	No

- G. Components or parts are to be rust proof and primed after fabrication and prior to assembly using an established and acceptable zinc phosphate process.

Meets Spec	
Yes	No

Exception(s):

- H. Body must be total unit type construction.

Meets Spec	
Yes	No

Exception(s):

17. Electrical

- A. Step well light to operate when door is opened. Light is to go off when door is closed.

Meets Spec	
Yes	No

Exception(s):

- B. Rectangular lights are required. Front and rear roof clearance lights, front amber, and rear red. Front and rear skirt mounted reflectors shall be supplied. LED lights only, with shields or recessed.

Meets Spec	
Yes	No

Exception(s):

- C. Rectangular lights are required. Front and rear cluster lights, center roof, front and rear, front amber, rear red. LED lights only, with shields or recessed.

Meets Spec	
Yes	No

Exception(s):

- D. Four stop and tail lights. (7" & 4") LED lights only.

Meets Spec	
Yes	No

Exception(s):

- E. One license plate light, in combination with the left taillight. LED lights only.

Meets Spec	
Yes	No

Exception(s):

- F. Two back up lights – 7". LED lights only.

Meets Spec	
Yes	No

Exception(s):

- G. Pennsylvania approved eight light warning system, hooded with black painted background. Warning system to have 7" diameter seal beam type lamps. A Weldon electronic flasher unit shall operate the system. Manual kill switch to be provided. Emergency override switch to be provided.

Meets Spec	
Yes	No

Exception(s):

- H. Self-canceling directional signals with indicator lights on the dash. Exterior, chassis supplied front amber, 7" rear amber. Also, side directional lights with shields below windows forward each side. LED lights only except chassis.

Meets Spec	
Yes	No

Exception(s):

- I. Multi-Plex wiring for body and chassis.

Meets Spec	
Yes	No

Exception(s):

- J. Double row dome lights with separate switch control for rear half of dome lights. Separate circuit for single dome light over driver. Dome lights to be mounted over seats, not in side panels.

Meets Spec	
Yes	No

Exception(s):

- K. Switch panel: Located to the left of the driver at elbow level for easy operation, individual circuit breakers or fuses for each circuit to be supplied. Circuits to be located in compartment behind switch panel with switch panel acting as an access door. Switches shall be rocker type design. This panel to be illuminated and switch label, fiber optically lit from behind. Exterior access to all body and chassis switches is to be available from a compartment under driver's window, if interior access is not available from manufacturer.

Meets Spec	
Yes	No

Exception(s):

- L. Stop Arm and Crossing Arm
- a. Supply and install air operated stop arm, fully reflectorized with two (2) LED lights. Octagon shaped.
 - b. Stop arm shall be automatically activated when the red warning light system is engaged and the same for the crossing arm. Stop arm shall be activated with the entrance door and must be equipped wind guard.
 - c. Specialty Manufacturing brand to be supplied.
 - d. Air operated safety-crossing arm, with magnet or mechanical keeper.

Meets Spec	
Yes	No

Exception(s):

- M. Unit to be equipped with six speakers spaced evenly throughout the bus (25 watt ceiling DLX speakers).

Meets Spec	
Yes	No

Exception(s):

- N. AM/FM/CD or MP3/Public Address system with six speakers and driver volume control knob is to be included.

Meets Spec	
Yes	No

Exception(s):

18. Sign covers shall be supplied. Reflective background is to be used for the front and rear sign.

Meets Spec	
Yes	No

Exception(s):

19. Accessories (Items A through F to be mounted for quick and easy access by driver)

A. First aid kit (10 unit). Must meet Federal and Pennsylvania specs

Meets Spec	
Yes	No

Exception(s):

B. Body fluid clean up kit.

Meets Spec	
Yes	No

Exception(s):

C. Wrecking bar.

Meets Spec	
Yes	No

Exception(s):

D. Triangular warning device.

Meets Spec	
Yes	No

Exception(s):

E. Fire extinguisher shall be five-pound dry chemical A-B-C type. Approved type shall be provided and suitably mounted so as to be readily accessible and available for use to the operator in case of emergency.

F. Webbing Cutter.

Meets Spec	
Yes	No

Exception(s):

20. Mud Flaps

A. Two front, Two rear.

Meets Spec	
Yes	No

Exception(s):

B. Rear rubber fenders around exterior wheelhouse.

Meets Spec	
Yes	No

Exception(s):

21. Insulation

- A. Full 2" insulation in roof and sides to floor line. The R-value of the insulation is to be 6; fiberglass is not to be used as it will retain water if a leak develops.

Meets Spec	
Yes	No

Exception(s):

- B. Noise package to include first two sections over the driver's head. Acoustic headliner made of perforated steel and under floor noise insulation in driver's area. Driver's platform to have .62" thick plywood sub-floor with rubber floor cover

Meets Spec	
Yes	No

Exception(s):

- C. Special driver insulation and fully treated engine hood covering.

Meets Spec	
Yes	No

Exception(s):

- D. Manufacturer is to use the highest-grade noise reduction available in the engine area.

Meets Spec	
Yes	No

Exception(s):

22. Undercoating

- A. Entire underside of body, including floor member, side panels and fenders below floor level shall be coated with asphalt base or rubber base undercoating material applied by a spray method in order to seal, deaden sound, insulate and prevent oxidation of the underside of the body. Tectyle 121 method or approved equal.

Meets Spec	
Yes	No

Exception(s):

- B. Care must be taken to be certain no water drain holes designed into body are covered with undercoating material.

Meets Spec	
Yes	No

Exception(s):

- C. Fuel tank filler cap locking door to be provided.

Meets Spec	
Yes	No

23. Painting

- A. Bus exterior to be painted national school bus chrome yellow including belt panel except for black front and rear bumpers and rub rails. **Roof to be painted white.** Entire bus to be rust proofed before and after fabrication using zinc phosphate. BASF polyurethane paint, with a five-year warranty, is required. **(No exceptions)**

Meets Spec	
Yes	No

- B. Light Grey color on interior ceiling and walls to be a hot, sprayed on baked enamel process.

Meets Spec	
Yes	No

Exception(s):

- C. Five-year warranty minimum warranty on exterior paint.

Meets Spec	
Yes	No

Exception(s):

24. Lettering

- A. The school bus sign is to be an 8" reflectorized sign.

Meets Spec	
Yes	No

Exception(s):

- B. The sign is to be lettered on both the front and rear at roof caps.

Meets Spec	
Yes	No

Exception(s):

- C. The sign is to be reflectorized.

Meets Spec	
Yes	No

Exception(s):

- D. Under the window, lateral strip is to be lettered, 6" minimum to read **"NESHAMINY SCHOOL DISTRICT"**

Meets Spec	
Yes	No

Exception(s):

- E. All buses are to be numbered on all four-corners and belt line at entrance door and center rear door and under the driver's window behind the stop arm sign and center of front hood. (All numbers will be furnished at a later date.)

Meets Spec	
Yes	No

Exception(s):

F. Reflective Tape

- a. Tape is to be located in a 2" strip down the belt line of each vehicle full-length front to rear.
- b. The entire rear outline is to be ringed in a 2" strip.
- c. All emergency exits (doors, windows, hatches, etc.) must be outlined in a 1 ½" strip.

Meets Spec	
Yes	No

Exception(s):

25. Each bidder shall be required to include the manufacturer's specifications for the vehicle of which they intend to supply to Neshaminy School District. These specifications are to accompany their bid forms. Additionally, each bidder must furnish complete manufacturers brochures describing the vehicle on which their bid has been based, meeting the minimum requirements outlined and stated herein.

Meets Spec	
Yes	No

Exception(s):

26. Child Reminders are to be installed on all buses; they are to be equipped with a child seat check reminder system.

Meets Spec	
Yes	No

Exception(s):

27. All buses equipped with Pro-Vision Video System. DVR-704 color recorded kit includes DVR, lockable cage, SDHC 64gb memory card, Front mounted camera DVR 122 and Rear mounted Dvr 129 colored camera kits, AV cable kits, software and guides installed.

Meets Spec	
Yes	No

Exception(s):

28. GPS System - All buses are to have Zonar V3 GPS kit, wired and installed

Meets Spec	
Yes	No

Exception(s):

29. All units must be delivered and ready to operate by .
The proposed delivery date will be: _____

**NESHAMINY SCHOOL DISTRICT
Chassis Specifications
2018 or Newer**

One (1) up to 78 Passenger/up to three Wheel Chairs, Type C, Conventional Buses

NOTE: The chassis shall meet or exceed all Commonwealth of Pennsylvania and Federal requirements, regulations and revisions for school buses of the Type C, conventional buses and shall be of suitable size from factory for use with body manufacturer or lift equipped 78-passenger capacity body.

EXCEPTIONS: List any exceptions to specifications in the space provided below each item. Failure to note any deviation assumes compliance.

2. 2018 or newer Type C, type C, 78 Passenger, conventional buses or equal

Meets Spec	
Yes	No

Exception(s):

3. **Frame**

- C. 30,000 GVW plate rating, minimum

Meets Spec	
Yes	No

Exception(s):

- D. Dual frame rails to be two-piece. Frame web to be 9 5/8" x .25" thick depth. Sub frame to be utilized in engine area, web to be 9" x 2 3/8" x .25" thick.

Meets Spec	
Yes	No

Exception(s):

- C. Minimum frame size to: 5/16" steel, 10 1/2" high with 3" flanges top and bottom sections measuring no more and no less than 10.1 cu. inches RBM, 120,000 PSI steel with a rust proof black paint, 505,000 pounds.

Meets Spec	
Yes	No

Exception(s):

- D. Frame rails are to be full length untapered for maximum strength – painted and undercoated

Meets Spec	
Yes	No

Exception(s):

3. Wheel base

- A. 159" wheelbase, maximum

Meets Spec	
Yes	No

Exception(s):

- C. Turning radius (curb to curb) 20' 8" maximum

Meets Spec	
Yes	No

Exception(s):

4. Axle

- A. Front axle: 10,000 lbs. capacity minimum. Heavy-duty leaf springs

Meets Spec	
Yes	No

- B. Rear: 17,500 lbs. minimum. With a ratio to allow speeds of 80 mph. top speed to be set with computer

Meets Spec	
Yes	No

- C. Front wheel bearing is to have oil type seals.

Meets Spec	
Yes	No

Exception(s):

- D. Wheels are to be 22.5" x 8.25" and hub piloted, painted black.
(No exceptions)

Meets Spec	
Yes	No

6. Tires

- C. Front: Factory balanced, Michelin XZE-2 255/70R/22.5 (16 Ply) highway, tubeless radial tires.

Meets Spec	
Yes	No

Exception(s):

- D. Rear four: Factory balanced Michelin XD-2 255/70R/22.5 (16 Ply) mud and snow tubeless radial tires.

Meets Spec	
Yes	No

Exception(s):

6. Suspension

- A. Front heavy-duty leaf spring suspension; 10,000 lbs. capacity at ground.

Meets Spec	
Yes	No

- B. Rear leaf springs: Airliner air suspension with a total capacity of 23,000 lbs.

Meets Spec	
Yes	No

- C. Two front and two rear direct acting, double action, piston type heavy-duty shock absorbers compatible with manufacturer's rated axle capacities.

Meets Spec	
Yes	No

Exception(s):

7. Anti-lock A.B.S. Brakes:

- A. Service: Front and rear air disc brakes shall be supplied.
 Bendix ADB22X-V model with 17" vented rotors.
 Dual Piston design.
 Integrated Automatic Slack Adjusters.
 Aluminum wheel hubs are required to be supplied.
 Dash mounted parking brake release control.
 Must meet all Federal and Pennsylvania State requirements.
(No exceptions)

Meets Spec	
Yes	No

- B. Emergency brakes: MGM 30 square inch spring brake system treadle valve control. Separate instrument panel mounted valve provided for parking.

Meets Spec	
Yes	No

Exception(s):

- C. Air compressor: Cummins, 18.7 CFM at 1200 RPMs, water-cooled, gear driven.
 Air intake to be drawn from clean side of combustion air cleaner.

Meets Spec	
Yes	No

Exception(s):

- E. System to be equipped with Bendix Model AD-9 air dryer (heated) with automatic purge feature.

Meets Spec	
Yes	No

Exception(s):

- E. Meritor automatic slack adjusters to be installed on all four wheels.

Meets Spec	
Yes	No

Exception(s):

- F. Brake reservoir shall have two tanks with three reservoirs, wet, front and rear supply for a total of 3,460 cu. in.

Meets Spec	
Yes	No

Exception(s):

- G. Minimum total service brake area to be 806 square inches.

Meets Spec	
Yes	No

Exception(s):

- H. Air brake line tubing is to be clamped inside frame rails for protection.

Meets Spec	
Yes	No

Exception(s):

8. Steering:

- A. Full power integral design steering with the power unit mounted to steering column.

Meets Spec	
Yes	No

Exception(s):

- B. TRW steering model THP-60, and TRW hydraulic pump is required. Drag link to be one piece

Meets Spec	
Yes	No

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Exception(s):

- C. 18" steering wheel four-spoke with black soft rim and a tilting and telescoping column

Meets Spec	
Yes	No

Exception(s)

9. Electrical System:

- A. 12-volt system

Meets Spec	
Yes	No

Exception(s):

- B. 275 Amp Delco Remy 40 si model alternator required

Meets Spec	
Yes	No

Exception(s):

- C. Three Group 31, 12 volt, 2,280 cold cranking AMPS at 0o F, 435 minutes reserve capacity.

Meets Spec	
Yes	No

Exception(s):

- D. Battery tray: Roll out tray 23 ½" length x 15 ½" deep x 11" height, to house three group 31, 12 volt batteries, mounted on the driver's side of the bus. Compartment to be equipped with hinged door and recessed locking latch. Double 00 gauge battery cables will be furnished. A keeper cable shall be supplied for the battery tray eyebolt.

Meets Spec	
Yes	No

Exception(s):

- E. Heavy-duty color and number coded wiring throughout and protected by resetting circuit breakers. Fuse is acceptable only in circuit. Fully multi-plexed systems to utilize fuses and solid state circuitry

Meets Spec	
Yes	No

Exception(s):

- F. All wiring shall be loomed, encased, or concealed possible within the body interior. The wire molding is to be installed on top of windows for easy access to wiring harness. This facilitates removal of the wire molding without removing the windows. The service benefit is improved access to wiring in the event of a failure.

Meets Spec

Yes	No

- G. Exterior electrical access panel is to be located below driver's side window. Compartment is to be weather tight and allow access to all electrical control circuit breakers and wiring termination center. Panel door to have an exterior key lock. The electrical schematic for the electrical panel is to be posted inside the panel door. A door stay is also to be incorporated in the door design to keep the door in a fixed position for repairs. Lock to be supplied for access door.

Meets Spec

Yes	No

Exception(s):

- H. Must be equipped with dual electric horns.

Meets Spec

Yes	No

Exception(s):

10. Instruments and Gauges:

- A. Speedometer, odometer, fuel gauge, oil pressure gauge, water temperature gauge, dual air pressure gauge, tachometer, voltmeter, and hour meter.

Meets Spec

Yes	No

Exception(s):

- B. Engine warning system with low oil pressure, low air, and high temperature alert light required.

Meets Spec

Yes	No

Exception(s):

- C. Maximum instrument panel height above driver's floor shall be no more than 26" to maximize driver's visibility

Meets Spec

Yes	No

Exception(s):

11. **Controls Are to Include:** Key starter, right of the steering column. High-beam indicator, headlight switch, dimmer switch, spring brake control, and hazard switch on steering column, self-canceling turn signals with indicator lights

Meets Spec	
Yes	No

Exception(s):

12. **Exhaust**

- A. Exhaust system shall be a single 16- gauge, 4" diameter, aluminized steel pipe from turbo to muffler, with heat shield at fuel tank 5" from muffler to exit.

Meets Spec	
Yes	No

Exception(s):

- B. The tailpipe is to exit out the rear of the unit.

Meets Spec	
Yes	No

13. **Fuel Tank:**

- A. Shall be 60-gallon safety tank with sump and brass drain plug.

Meets Spec	
Yes	No

Exception(s):

- B. To be mounted between the frame rails in the rear overhand area.

Meets Spec	
Yes	No

- C. Access to sending unit shall be provided through a removable access plate in the body floor.

Meets Spec	
Yes	No

Exception(s):

14. **Engine Specifications:**

- A. 2017 Diesel
B. Cummins ISB 6.7L -240 HP-(EPA2010) -560FT LBS OF TORQUE @2400 RPM AND HIGH PRESSURE COMMON RAIL FUEL SYSTEM. **(NO EXCEPTIONS)**

- C. After cooled – air to air
- D. Turbo Charged
- E. Operating fuel – Diesel **(No exceptions)**
- F. Electric key shutdown
- G. Engine to meet – 2017 Federal Emission standards
- H. Units to come with comprehensive engine manuals
- I. Heated fuel water separator in compliance with current GHG requirements (bidder to indicate Brand/model supplied _____)

Meets Spec	
Yes	No

Exception(s):

- J. Seven-years/150,000 miles NEC school bus engine warranty to be included.

Meets Spec	
Yes	No

Exception(s):

- K. Under hood mounted windshield wiper motors and windshield washer fluid reservoir.

Meets Spec	
Yes	No

Exception(s):

- L. Air Cleaner:

- a. Heavy-duty dry type
- b. Engine air intake shall be located at the front of the vehicle, above coach floor level, (combustion) cleanest possible source.

Meets Spec	
Yes	No

Exception(s):

- M. Cooling System:

- a. Radiator and fan are to be mounted in the front of the vehicle utilizing fan drawn and forced air for the most efficient cooling.
- b. Engine coolant radiator shall be mounted in tandem to the charge air radiator (one in front of the other). Coolant radiator shall be heavy-duty soldered brass construction. The radiator shall consist of 186 tubes with 15 fins per inch. Minimum radiator core cooling area shall be 709 square inches.
- c. The radiator is to be equipped with molded fiber reinforced nylon top and bottom tanks with integral seam free inlet and outlet fittings. These tanks are sealed to a core by a resilient dual molded gasket with a field repairable crimp type-retaining strip. The surge tank is to be molded nylon and mounted above the radiator with a sight glass or constructed of translucent

material for visual coolant level check and low coolant sensor with a warning light on the front dash. This will eliminate cracking in the radiator neck.

- d. Coolant recovery tank is to be molded nylon mounted above the radiator with a sight glass or constructed of translucent material for visual check; this design eliminates cracking in the radiator neck by replacing the top and bottom tanks with seam free integrally molded reinforced nylon.
- e. Charge air after cooler core area shall be a minimum of 709 square inches. The after cooler shall be welded aluminum construction, capable of withstanding pressure up to 25 PSI.
- f. Electric fan clutch with thermostat control must be installed on engine fan
- g. Coolant filter shall be supplied. **(No additive in filter)**
- h. All engine hoses to be silicone or Gates Blue Stripe.
- i. Extended life anti-freeze must protect from -34° F below 0°, to 265° F above 0°.

Meets Spec

Yes	No

Exception(s):

- N. Engine block heater: Bus to be equipped with an engine block heater 750 watt, with electrical connection built into the front of the bus with permanent cover to keep it clean and dry.

Meets Spec

Yes	No

- O. Engine coolant heater

- a. Webasto TSL 17 – or equal
- b. Webasto timer 7 DAY TIMER

Meets Spec

Yes	No

15. Bumpers:

- A. Front and rear to be ¼" plate steel, one piece, with die formed strength ridges. Height 12" minimum. Shall have two A-frame braces at each corner for added strength.

Meets Spec

Yes	No

Exception(s):

- B. Front bumper is to be mounted so as to be two inches minimum in front of grill.

Meets Spec

Yes	No

Exception(s):

16. Tow Hooks

- A. Front: Two mounted to frame
- B. Rear: Two mounted to frame

Meets Spec	
Yes	No

Exception(s):

17. Power Train:

- A. Type:
 - a. Allison automatic 2500 PTS Series, five speed forward, one reverse system, to be filled with Castrol, Transynd-Synthetic transmission fluid, and tagged that it has Transynd fluid in it.
 - b. Back-up alarm to be included (112-decibel minimum).
 - c. Auxiliary in line filter shall be furnished.
 - d. Transmission cooling shall be accomplished by a separate oil cooler heat exchanger external from radiator with minimum capacity of 1,550 BTU's per minute.
 - e. Transmission to be warranted for seven years/unlimited miles 100% parts and labor.

Meets Spec	
Yes	No

Exception(s):

- B. Drive Line: 4" diameter steel drive shaft(s) minimum. Each shaft dynamically balanced and have protective guard at each shaft. Spicer 1550 series components minimum. Shaft angle shall not exceed 6 degrees loaded or unloaded.

Meets Spec	
Yes	No

Exception(s):

- 18.** All chassis components shall be fully tested on a dynamometer before body mount or delivery.

Meets Spec	
Yes	No

Exception(s):

- 19.** Complete parts inventory for all chassis items shall be available with 24 hours from selling dealer at their location.

Meets Spec	
Yes	No

Exception(s):

- 20.** All chassis and body components to be manufactured and assembled in the United States of America. All bidders shall comply with the Pennsylvania Motor Vehicle procurement act of June 4, 1984 where by the motor vehicles as specified herein shall be manufactured in the United States.

Meets Spec

Yes	No

Exception(s):

- 21.** Current model year demonstrator vehicle must be available to the Neshaminy School District Transportation Department to review prior to the issuance of these specifications.

Meets Spec

Yes	No

NESHAMINY SCHOOL DISTRICT

Body Specifications:

2018 or Newer

One (1) up to 78 Passenger/up to three Wheel Chairs, Type C, Conventional Bus

NOTE: The body shall meet or exceed all Commonwealth of Pennsylvania and Federal requirements, regulations and revisions for school buses of the Type C, conventional bus and shall be of suitable size from factory for use with chassis manufacturer or 78-passenger wheelchair lift equipped capacity chassis.

EXCEPTIONS: List any exceptions to specifications in the space provided below each item. Failure to note any deviation assumes compliance.

3. 2018 or newer Type C, conventional style bus or equal. Length to be approximately 39 feet and width is to be 8 feet with a maximum of 81" overhang in the front of the vehicle and 1" spacer blocks to rise up the front of the vehicle.

Meets Spec	
Yes	No

Exception(s):

4. **Capacity:**

- G. Up to 30 Passenger/up to 3 wheel chairs.

Meets Spec	
Yes	No

Exception(s)

- H. Seats – 10 track mounted.

Meets Spec	
Yes	No

Exception(s):

- I. Knee room - 27 inches, minimum.

Meets Spec	
Yes	No

Exception(s):

- D. Aisle width – 12 inches.

Meets Spec	
Yes	No

Exception(s):

- E. Width per passenger – 13 inches.

Meets Spec	
Yes	No

Exception(s):

3. Headroom

- A. 77" minimum required over a 5/8" marine grade plywood and vinyl floor covering.

Meets Spec	
Yes	No

Exception(s):

4. Windshield:

- A. Tinted safety plate.

Meets Spec	
Yes	No

Exception(s):

- B. 3,185 square inches of glass, minimum

Meets Spec	
Yes	No

Exception(s):

5. Interior Requirements:

- A. Side panels are to be aluminized steel, 22 gauge from the side windows to floor.

Meets Spec	
Yes	No

Exception(s):

- B. Floor is to be covered with 1/8" smooth flooring under the seats with ribbed aisles; rubber driver area. Rubber or vinyl entrance floor step tread; front and rear wheel housings are to be completely covered with molded rubber; metal cove molding at body sides, floor covering to be black color. All joints between the aisle rubber and smooth rubber flooring material are to be sealed with a synthetic rubber sealant to insure a waterproof seam. This specification enhances the appearance of the passenger compartments and permits easier cleaning and maintenance. Fuel sender inspection plate shall be supplied. All floor seams shall also be covered with an aluminum seam strip.

Meets Spec	
Yes	No

- C. Sub floor is to be 5/8" plywood marine grade. The plywood is to be screwed to the steel floor frame not nailed. This provides a much more solid bond. **(No exceptions)**

Meets Spec	
Yes	No

- D. Step well, three steps, 23" depth. Entrance steps shall be covered with ribbed black flooring with white nosing.

Meets Spec	
Yes	No

Exception(s):

6. Mirrors

- A. Left and right rearview heated Rosco mirrors 9" x 17" housing, separately adjustable, flat mirror 7" x 10", convex mirror 7" x 4", maneuverable by remote control. Must meet all Federal requirements

Meets Spec	
Yes	No

Exception(s):

- B. Two 7" x 13" oval Rosco Hawkeye cross view mirrors are to be installed on the right and left front corners. Both mirrors must be heated.

Meets Spec	
Yes	No

Exception(s):

- C. 6" x 30" inside mirror, safety plate

Meets Spec	
Yes	No

Exception(s):

- J. All exterior mirrors shall be heated.

Meets Spec	
Yes	No

Exception(s):

7. Heaters:

- B. 90,000 BTU minimum heater/defroster compliment of defroster/warm air outlets/snorkels sufficient to keep windshield, driver's window and entrance door glass free of fog, snow and ice. Full width defroster is to be furnished. The unit is also to defrost the driver's side window. Heated air to run a continuous outlet from

rear of driver's window, across entire windshield. High amperage switches to have three positions, including low, high, and maximum output. Inlet air is to pass through an easily accessible/cleanable dust particle filter before entering the heater coil. The heater coil shall be of durable copper tube/aluminum fin configuration.

30,600 BTU minimum heater/defroster located on right hand side. Heated air to run a continuous outlet from rear of driver's window, across entire windshield, to a vertical outlet directed toward the entrance door. Heater controls are to be mounted to left of driver. High amperage switches to have three positions, including low, high, and maximum output. Air is to pass through an easily accessible/cleanable dust particle filter.

Meets Spec

Yes	No

Exception(s):

- B. Heater inlet air shall pass through a driver controlled baffle chamber that allows selection of any mixture of fresh and reheated air desired.

Meets Spec

Yes	No

Exception(s):

- C. Access panels have a minimum number of fasteners to provide service for all working components.

Meets Spec

Yes	No

Exception(s):

- D. The driver will have two separate variable controls that can direct air from the central duct to the under-dash foot pedal area, and/or through outlets at the rear of the dash near the center of the bus. All heaters must include silicone or Versiguard hi-miler hoses and clamps.

Meets Spec

Yes	No

- E. Two each 40,000 BTU heaters to be located against the rear wall of the bus. All heater hoses to be Versiguard hi-miler or silicone.

Meets Spec

Yes	No

Exception(s):

- F. Two 6" auxiliary fans with two-speed motors shall be mounted in the upper center and upper left windshield area.

Meets Spec

Yes	No

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Exception(s):

- G. Heater cut off valves are to be manually controlled.

Meets Spec	
Yes	No

Exception(s):

- H. Dual heater bleeding system external of the body required.

Meets Spec	
Yes	No

Exception(s):

- I. Rear heaters to be suspended from the wall or mounted on the floor.

Meets Spec	
Yes	No

Exception(s):

8. Doors

- A. Entrance door is to be outward opening type, air operated, ball bearing suspended. Cushioned header pad to be installed above door

Meets Spec	
Yes	No

Exception(s):

- B. Entrance door shall be located on the right side of bus and a stainless steel grab rail shall be provided on right side as well as left side of step well.

Meets Spec	
Yes	No

Exception(s):

- C. Vertical closing edges on entrance door shall be equipped with flexible material to protect children's finger.

Meets Spec	
Yes	No

Exception(s):

- D. Emergency door shall be located at center rear at aisle. Door will have safety glass in lower door panel. Door opening shall meet current Federal requirements. Header pad shall be mounted over door with single point bar latch.

Meets Spec	
Yes	No

Exception(s):

- E. Rear emergency exit door is to include a vandal lock and door shall include red light to illuminate emergency door.

Meets Spec	
Yes	No

Exception(s):

- F. All emergency exits are to be marked inside and out with the appropriate decals and instructions.

Meets Spec	
Yes	No

Exception(s):

- G. Vandal locks are to be on the rear door and must be interlocked to ignition system.

Meets Spec	
Yes	No

Exception(s):

9. Step well is to be slant three-step entrance with step riser height of approximately 8".

Meets Spec	
Yes	No

Exception(s):

10. Seats

- A. All seats are to provide 13" per passenger and have a 12" aisle meeting DOT standards with front crash barriers on both sides, 27" minimum knee clearance. All seats are to be DOT High Back and tapered from hip to knee level to provide for easier loading and unloading. Wall and floor mounted seats right and left fastened with bolts and serrated washer faced lock nuts. Seat design must meet FMVSS#222.

Meets Spec	
Yes	No

- B. Seats are to be DOT High Back and covered with a minimum of 42 oz upholstery. Seat upholstery to be attached with staples for ease of repair, rivets are not acceptable. Seat color – brown. Barriers to be supplied with metal modesty panels forward of passenger seats.

Meets Spec	
Yes	No

Exception(s):

- C. Seat cushions are to be constructed using no less than ½” plywood bottoms. All seats are to be equipped with heavy-duty hinges mounted to the seat frame. This will allow the seat bottom cushion to flip forward for ease of cleaning and repair.

Meets Spec

Yes	No

- D. Driver’s seat: National or Bostrum Routemaster plus air ride, bolted to the floor. All foam, six-way easily adjustable, high-back seat, tilting back, semi-bucket must have three-point retractable seat belt with shoulder harness, equipped with a “D” ring. The “D” ring is to provide seven full inches of adjustment. This will enable the drivers to move the belt off their necks. Belt webbing to be orange. Armrests are to be included on both sides with flip-up armrests. Covering is to be vinyl/fabric material.

Meets Spec

Yes	No

Exception(s):

11. Sun visor is to be adjustable see-through Plexiglas and mounted over the windshield on the driver’s side.

Meets Spec

Yes	No

Exception(s):

12. Windshield Wipers

- A. Must be two-speed electric with parallelogram sweep to be bottom mounted with black, non-glare hardware. Individual motors, mounted under windshield area with single switch. Intermittent control to be included

Meets Spec

Yes	No

Exception(s):

- B. Wipers are to have wet arm capability.

Meets Spec

Yes	No

Exception(s):

- C. Wiper motor, heater core, dash wiring, headlights and linkage are to be accessible under front hood.

Meets Spec

Yes	No

Exception(s):

- D. Must have approved electric windshield washers with a minimum one-gallon reservoir located inside vehicle with easy access.

Meets Spec

Yes	No

Exception(s):

13. Glass

- A. Driver's window: Two piece sliding sash, extruded aluminum, or equal with security latch on front and rear sash total glass area is to be 588" square inches.

Meets Spec

Yes	No

Exception(s):

- B. Side windows: Two piece-split sashes bottom half-stationary top half-capable of being lowered, extruded aluminum frame. Four emergency push-out windows shall be included as follows: the 3rd and 4th sections on both sides and be vertically hinged. All windows shall have aluminum sash and removable from inside the bus. Glass to be dark tinted.

Meets Spec

Yes	No

Exception(s):

- C. Rear windows: The rear quarter windows and rear windows are to be mounted in rubber. Glass to be dark tinted.

Meets Spec

Yes	No

Exception(s):

- D. Entrance door: Four panes of glass, two in each half, total glass area is to be 1,044 square inches.

Meets Spec

Yes	No

Exception(s):

- E. Windshield is to be tinted for best driver visibility. Stirrup steps on cowl to insure ease of cleaning windshield.

Meets Spec

Yes	No

Exception(s):

- F. All glass in windshield, windows and doors shall be of approved type safety glass (so mounted that the permanent identification mark is visible) and of quality to prevent distortion of view in any direction and all glass to be tinted.

Meets Spec	
Yes	No

Exception(s):

14. Ventilation

- A. Static ventilator is to be located on the roof at front in low-pressure area.

Meets Spec	
Yes	No

Exception(s):

- B. Fresh air intake is to be located on the right side flowing through the heater core. The vent is to be controllable by the driver from a seated position.

Meets Spec	
Yes	No

Exception(s):

- C. One -Transpec dual-purpose roof/vent hatch. Hatch is to be mounted in location to meet Federal requirements.

Meets Spec	
Yes	No

Exception(s):

15. Body Construction

- A. Mill applied, electro-deposited primer-coated steel shall be used. Each part must be retreated with zinc primer coating after fabrication and before assembly.

Meets Spec	
Yes	No

- B. Minimum 14-gauge hat shaped roof bows one-piece from skirt on left side overhead to skirt right side shall be supplied. Bows shall not be pieced in any manner. For loading safety, manufacturer's longest available, full-length skirt is required

Meets Spec	
Yes	No

- C. Body sheet metal shall be fastened with rivets and adhesive on exterior.

Meets Spec	
Yes	No

- D. Minimum of four protective side rub rails shall be applied. These rails to be riveted to the structural bows and side panels. Tops of all rub rails to be caulked with

yellow silicone. Four double-ribbed 16-gauge steel applied rub rails are installed along both sides of the body. The rub rails are installed as follows:

- a. One below side windows, and extends from the front bow on the R/H, or the front cowl post on the L/H to the rear corner radius.
- b. One at seat (passenger) level, and extends from the front bow, both R/H and L/H around the rear corner radius, and continues to the rear emergency doorposts.
- c. One near the floor level, and extends from the front bow on both the R/H and L/H to the rear corner radius.
- d. One at the bottom of the skirt, and extends from the front bow on the R/H, or the front cowl post on the L/H, to the rear bumper (un-interrupted at the wheel housing cutouts).
- e. One at seat (passenger level) on lift door.

Meets Spec

Yes	No

Exception(s):

- E. Outside, side panels are to be constructed of 16-gauge steel. Interior side and ceiling panels to be 22 gauge steel, minimum with aluminized steel side walls with mar resistant finish from bottom of window to floor level. Side panels shall extend from below the side windows to a distance of 16 ¼" below the floor (long length skirt). Rear corner panels are to be constructed of 20-gauge steel. The left hand rear panel to include nylon nuts and slot-head screws for license plate mounting. Roof sheets shall include a rain visor or gutter over windows. Front cowl panels are to be constructed of 11-gauge steel. Floor panels constructed of 14 gauge galvalume steel and reinforced with full width channel cross members. All riveted floor joints are to be reinforced with full width 3/16th x 1 ½" x 2" structural steel angles.

Meets Spec

Yes	No

Exception(s):

- F. A removable, front upper inner panel is provided to allow access to the front roof cap area. A removable 20-gauge steel, rear, upper, inner panel is provided to allow access to the rear roof cap area. Removable wire molding, right and left, shall be provided to allow access to body wiring harnesses. Wire moldings are provided in sections. Textured, aluminized 22 gauge steel inside, side panels must be provided, extending from the windowsill down to the floor level, for the entire length of the body on both left and right sides. Headlining panels, spanning the entire side of the bus (window header to window header), are constructed of 22-gauge steel and are double-hemmed to provide additional joint strength.

Meets Spec

Yes	No

Exception(s):

- G. Body shall be fully undercoated, under floor, skirt panels and wheel-wells. Mill applied electro-deposited prime coated steel shall be used. Each part must be re-treated with zinc primer coating after fabrication and before assembly.

Meets Spec

Yes	No

- H. Body tie down, Texas "U" bolt construction or double bolted mounting clips shall be used to further strengthen the body to chassis tie down.

Meets Spec

Yes	No

- I. Rear bumper is to be 14" formed, chassis frame mounted, one-piece 3/16" thick steel plated with die-formed strength ridges and 90-degree flange top and bottom. Corners wraparound 14" with double "A" frame bracing

Meets Spec

Yes	No

16. Floor Construction

- C. Main body floor joints to have a minimum 60% joint strength.

Meets Spec

Yes	No

- D. All body panels are to be zinc steel.

Meets Spec

Yes	No

Exception(s):

- C. The outside, side panels, from the side window to the bottom of the lower skirt to be 16-gauge smooth steel. Side panels are not to exceed 35" in length to facilitate repairs.

Meets Spec

Yes	No

Exception(s):

- D. Body to have full length one piece gusset rail at the floor line from front to rear of bus and from the seat rail to approximately 7" below the floor line. Impact rail is not to be part of exterior panel.

Meets Spec

Yes	No

Exception(s):

- E. The roof bows are to be one-piece construction, from floor skirt to floor skirt, 14-gauge minimum; "U" shaped design only.

Meets Spec

Yes	No

- F. The floor is to be made of formed sections using 14-gauge steel, flanged on each side. The "Z" channels are to be spaced between the floor joints. The floors to meet the Federal Motor Vehicle SS 221 joint strength.

Meets Spec

Yes	No

- G. Components or parts are to be rust proof and primed after fabrication and prior to assembly using an established and acceptable zinc phosphate process.

Meets Spec

Yes	No

Exception(s):

- H. Body must be total unit type construction.

Meets Spec

Yes	No

Exception(s):

17. Electrical

- B. Step well light to operate when door is opened. Light is to go off when door is closed.

Meets Spec

Yes	No

Exception(s):

- B. Rectangular lights are required. Front and rear roof clearance lights, front amber, and rear red. Front and rear skirt mounted reflectors shall be supplied. LED lights only, with shields or recessed.

Meets Spec

Yes	No

Exception(s):

- C. Rectangular lights are required. Front and rear cluster lights, center roof, front and rear, front amber, rear red. LED lights only, with shields or recessed.

Meets Spec

Yes	No

Exception(s):

- D. Four stop and tail lights. (7" & 4") LED lights only

Meets Spec	
Yes	No

Exception(s):

- K. One license plate light, in combination with the left taillight. LED lights only

Meets Spec	
Yes	No

Exception(s):

- L. Two back up lights – 7". LED lights only

Meets Spec	
Yes	No

Exception(s):

- G. Pennsylvania approved eight light warning system, hooded with black painted background. Warning system to have 7" diameter seal beam type lamps. A Weldon electronic flasher unit shall operate the system. Manual kill switch to be provided. Emergency override switch to be provided.

Meets Spec	
Yes	No

Exception(s):

- H. Self-canceling directional signals with indicator lights on the dash. Exterior, chassis supplied front amber, 7" rear amber. Also, side directional lights with shields below windows forward each side. LED lights only except chassis.

Meets Spec	
Yes	No

Exception(s):

- I. Multi-Plex wiring for body and chassis.

Meets Spec	
Yes	No

Exception(s):

- J. Double row dome lights with separate switch control for rear half of dome lights. Separate circuit for single dome light over driver. Dome lights to be mounted over seats, not in side panels.

Meets Spec	
Yes	No

Exception(s):

- K. Switch panel: Located to the left of the driver at elbow level for easy operation, individual circuit breakers or fuses for each circuit to be supplied. Circuits to be located in compartment behind switch panel with switch panel acting as an access door. Switches shall be rocker type design. This panel to be illuminated and switch label, fiber optically lit from behind. Exterior access to all body and chassis switches is to be available from a compartment under driver's window, if interior access is not available from manufacturer.

Meets Spec	
Yes	No

Exception(s):

- L. Stop Arm and Crossing Arm
- a. Supply and install air operated stop arm, fully reflectorized with two (2) LED lights. Octagon shaped.
 - b. Stop arm shall be automatically activated when the red warning light system is engaged and the same for the crossing arm. Stop arm shall be activated with the entrance door and must be equipped wind guard.
 - c. Specialty Manufacturing brand to be supplied.
 - d. Air operated safety-crossing arm, with magnet or mechanical keeper.

Meets Spec	
Yes	No

Exception(s):

- M. Unit to be equipped with four speakers spaced evenly throughout the bus (25 watt ceiling DLX speakers).

Meets Spec	
Yes	No

Exception(s):

- N. AM/FM/CD or MP3/Public Address system with four speakers and driver volume control knob is to be included.

Meets Spec	
Yes	No

Exception(s):

18. Sign covers shall be supplied. Reflective background is to be used for the front and rear sign.

Meets Spec	
Yes	No

Exception(s):

19. Accessories (Items A through F to be mounted for quick and easy access by driver)

- A. First aid kit (10 units). Must meet Federal and Pennsylvania specs

Meets Spec	
Yes	No

Exception(s):

- B. Body fluid clean up kit.

Meets Spec	
Yes	No

Exception(s):

- C. Wrecking bar.

Meets Spec	
Yes	No

Exception(s):

- D. Triangular warning device.

Meets Spec	
Yes	No

Exception(s):

- E. Fire extinguisher shall be five-pound dry chemical A-B-C type. Approved type shall be provided and suitably mounted so as to be readily accessible and available for use to the operator in case of emergency.

- F. Webbing Cutter.

Meets Spec	
Yes	No

Exception(s):

20. Mud Flaps

- C. Two front and Two rear.

Meets Spec	
Yes	No

Exception(s):

- D. Rear rubber fenders around exterior wheelhouse.

Meets Spec	
Yes	No

Exception(s):

21. Insulation

- A. Full 2" insulation in roof and sides to floor line. The R-value of the insulation is to be 6; fiberglass is not to be used as it will retain water if a leak develops.

Meets Spec	
Yes	No

Exception(s):

- B. Noise package to include first two sections over the driver's head. Acoustic headliner made of perforated steel and under floor noise insulation in driver's area. Driver's platform to have .62" thick plywood sub-floor with rubber floor cover

Meets Spec	
Yes	No

Exception(s):

- C. Special driver insulation and fully treated engine hood covering.

Meets Spec	
Yes	No

Exception(s):

- D. Manufacturer is to use the highest-grade noise reduction available in the engine area.

Meets Spec	
Yes	No

Exception(s):

22. Undercoating

- A. Entire underside of body, including floor member, side panels and fenders below floor level shall be coated with asphalt base or rubber base undercoating material applied by a spray method in order to seal, deaden sound, insulate and prevent oxidation of the underside of the body. Tectyle 121 method or approved equal.

Meets Spec	
Yes	No

Exception(s):

- B. Care must be taken to be certain no water drain holes designed into body are covered with undercoating material.

Meets Spec	
Yes	No

Exception(s):

- C. Fuel tank filler cap locking door to be provided.

Meets Spec	
Yes	No

Exception(s):

23. Painting

- A. Bus exterior to be painted national school bus chrome yellow including belt panel except for black front and rear bumpers and rub rails. **Roof to be painted white.** Entire bus to be rust proofed before and after fabrication using zinc phosphate. BASF polyurethane paint, with a five-year warranty, is required. **(No exceptions)**

Meets Spec	
Yes	No

- B. Light Grey color on interior ceiling and walls to be a hot, sprayed on baked enamel process.

Meets Spec	
Yes	No

Exception(s):

- C. Five-year warranty minimum warranty on exterior paint.

Meets Spec	
Yes	No

Exception(s):

24. Lettering

- A. The school bus sign is to be an 8" reflectorized sign.

Meets Spec	
Yes	No

Exception(s):

- B. The sign is to be lettered on both the front and rear at roof caps.

Meets Spec	
Yes	No

Exception(s):

- C. The sign is to be reflectorized.

Meets Spec	
Yes	No

Exception(s):

- D. Under the window, lateral strip is to be lettered, 6" minimum to read "**NESHAMINY SCHOOL DISTRICT**"

Meets Spec	
Yes	No

Exception(s):

- E. All buses are to be numbered on all four-corners and belt line at entrance door and center rear door and under the driver's window behind the stop arm sign and center of front hood. (All numbers will be furnished at a later date.)

Meets Spec	
Yes	No

Exception(s):

- F. Reflective Tape

- a. Tape is to be located in a 2" strip down the belt line of each vehicle full-length front to rear.
- b. The entire rear outline is to be ringed in a 2" strip.
- c. All emergency exits (doors, windows, hatches, etc.) must be outlined in a 1 ½" strip.

Meets Spec	
Yes	No

Exception(s):

25. Each bidder shall be required to include the manufacturer's specifications for the vehicle of which they intend to supply to Neshaminy School District. These specifications are to accompany their bid forms. Additionally, each bidder must furnish complete manufacturers brochures describing the vehicle on which their bid has been based, meeting the minimum requirements outlined and stated herein.

Meets Spec	
Yes	No

Exception(s):

26. Child Reminders are to be installed on all buses; they are to be equipped with a child seat check reminder system.

Meets Spec	
Yes	No

Exception(s):

27. All buses equipped with Pro-Vision Video System. DVR-704 color recorded kit includes DVR, lockable cage, SDHC 64gb memory card, Front mounted camera DVR 122 and Rear mounted Dvr 129 colored camera kits, AV cable kits, software and guides installed.

Meets Spec	
Yes	No

Exception(s):

28. GPS System - All buses are to have Zonar V3 GPS kit, wired and installed

Meets Spec	
Yes	No

Exception(s):

29. All units must be delivered and ready to operate by the proposed delivery date:

30. Special Needs Equipment

- A. Air Conditioning- An in-dash front air conditioner shall be supplied. Passenger area air conditioner with rear bulkhead In-Wall (IW) mounted evaporator to also be supplied.

American Cooling Technology (ACT) model ACT-23HD free blow system, 70,000 Btu total system shall be supplied.

Due to the District's training and experience, only ACT as specified is to be included in proposal.

Wherever the evaporator can be flush mounted, it shall be, otherwise; padding shall be installed on any evaporator projecting into the passenger compartment. One chassis OEM compressor driven off the engine shall be supplied and one 10 cid after market compressor driven off the engine shall be supplied (Two compressors total).

Passenger compartment rear-mount system:

(1) EV-2 in wall mounted evaporator with two dual shaft blower assemblies (60,000 Btu/Hr. minimum). Motors, mounted in vibration isolating rubber bushings, shall feature three speed continuous duty permanent magnets and shall utilize resistors to limit amperage requirements. Drain pan must be part of the evaporator, not the cover. Return air filter to be located at the coil, easily accessible. Copper tube evaporator coil with aluminum fins shall be completely enclosed in the evaporator housing with heavy duty welded aluminum evaporator assembly. Evaporator assembly must include high pressure/low pressure protection as part of the evaporator assembly as a means to protect the entire system including the compressor. Supply (1) CS-3 skirt mounted condenser rated at 82,000 Btu/Hr. with 12" diameter low profile condenser motors that are water sealed. Condenser to be constructed of heavy duty aluminum. It shall be installed to assure the coil face is exposed to fresh air from outside the skirt without interference from the skirt. The filter drier and sight glass to be located on the condenser and O-rings shall be utilized on all fittings and on the filter drier. Corrosion resistant electrical connections are required. Aeroquip model GH-134

refrigerant hoses couple with plated steel fittings for maximum resistance to corrosion, refrigerant permeation and moisture ingress shall be supplied. Refrigerant fittings and hosing need to be compliant with SAE specification J2064.

Chassis OEM radiator mounted condenser shall be located in front of the radiator
Front Air Conditioner: Chassis OEM in-dash air conditioner is required.

Rear system shall have dash or switch panel controls that include 3-speed fan switch and rotary thermostat controls. Shall be identified as to function on each control. Manual reset circuit breakers and relays required.

- B. Lift Door- A door to access the wheelchair lift shall be located behind the rear axle on the curbside of the bus. It shall have an upper window with dark tinted glass and a chain and loop system to serve as a positive lock hold-open device. The door shall have a vandaloock so it can be secured.
- C. Lighting- A flush mounted light shall be located in the skirt below the lift door and a ceiling mounted dome light shall be located above the lift area. An exterior light shall be located aft of passenger entrance door. Pilot lights to indicate the lift door is ajar (red) and the lift is receiving power (green) shall be visible to the seated driver.
- D. Lift –A fully automatic lift with a capacity of 800 pounds minimum shall be supplied. To be a Braun Century model or approved equal. Lift shall operate with the ignition in the on position.
- E. Securements- QRT deluxe fully retractable system including shoulder/lapbelt to be supplied to accommodate three mobility devices in full length L-track. In addition to the floor,L-track to also be above the windows full length to allow flexible locations of shoulder belts. L-track fasteners to be installed on securement componentry at delivery. Each system shall include a storage pouch, supplied by the securement manufacturer
- F. Seating-Track mounted seats to accommodate 30 passengers to be supplied. Each seat is to be track mounted. Seats must be seat-belt ready to allow for customer to install seatbelts at a later time.
- G. Interlocks-all necessary interlocks to prevent bus movement when lift is not in fully stowed position are to be supplied.
- H. Signage- one 6" x 6" universal handicap sign to be supplied at delivery loaded loose.