PASCO COUNTY BOARD OF COUNTY COMMISSIONERS
PURCHASING DEPARTMENT
8919 GOVERNMENT DRIVE
NEW PORT RICHEY, FLORIDA 34654
TELEPHONE: (727) 847-8194
FACSIMILE: (727) 847-8065
pascocountyfl.net

INVITATION FOR BIDS
BID NO. 07-063D
HEAVY-DUTY TRANSIT BUSES

SUMMARY OF WORK
It is the intent of these specifications to procure two (2) to ten (10) thirty (30) foot and two (2) to ten (10) thirty-five (35) foot heavy-duty transit buses.

The Pasco County Purchasing Department will receive sealed bids until 2:00 p.m., local time (our clock), on March 29, 2007, in the Pasco County Purchasing Department, 8919 Government Drive, New Port Richey, Florida. Bids received after this time will not be accepted. Bids will be publicly opened and read at the above-stated time and date. All interested parties are invited to attend. Bidders shall submit two (2) copies of submitted bids (one [1] original and one [1] copy).

Bid, performance, or payment surety is required for this project; please refer to the Special Provisions.

Please immediately advise of address changes or if you wish to have your firm removed from the vendor list. Vendors receiving this notice must submit either a bid/proposal or "NO BID" to remain on our vendor list for the specified commodity or service. A "NO BID" is provided on Page 2 for your convenience.

This cover is only intended to inform vendors of a pending Invitation for Bid or Request for Proposal. For complete details, please refer to the complete bid/proposal package.

Bid documents may be downloaded by visiting www.PascoCountyFL.net or by requesting copies from the Purchasing Department at no cost. The County is not responsible for expenses incurred prior to award by the Board of County Commissioners (Board).

Dawn D'Ascoli
Buyer

PASCO COUNTY BOARD OF COUNTY COMMISSIONERS
PURCHASING DEPARTMENT
8919 GOVERNMENT DRIVE
NEW PORT RICHEY, FLORIDA 34654

STATEMENT OF NO BID

We, the undersigned, have declined to submit a bid response to Invitation for Bid No. 07-063D for the following reason(s):

Please check all that apply.

1. ☐ Opening date does not allow sufficient time to complete bid response.
2. ☐ We do not offer the commodities or services requested.
3. ☐ Our schedule would not permit us to perform.
4. ☐ We are unable to meet the issued specification.
5. ☐ Specifications are restrictive (please explain below).
6. ☐ We are unable to meet the surety requirements.
7. ☐ Other: _____

Explanations: _____

_____

_____

We understand that if a "NO BID" is not returned, our firm will be removed from the bidders' list for the subject commodity.

Name: _____

Signature: _____

Company: _____

Address: _____

City/State/Zip: _____

Telephone: _____

Facsimile: _____

Fed. ID No.: _____

IMPORTANT!—PLEASE READ CAREFULLY BEFORE MAKING BID

GENERAL PROVISIONS

These general terms and conditions of the bid quotation and acceptance apply in like force to this inquiry and to any subsequent contract resulting therefrom.

ACKNOWLEDGMENT OF AMENDMENTS

Bidders shall acknowledge receipt of any amendment to the solicitation by identifying the amendment number in the space provided for this purpose on the bid form, by letter, or by returning a copy of the issued amendment with the submitted bid. The acknowledgment must be received by Pasco County by the time and at the place specified for the receipt of bids. Failure to acknowledge an issued amendment may result in bid rejection and disqualification.

ADDITIONAL INFORMATION

Questions concerning the contract or technical portions of the bid document must be submitted in writing to Scott P. Stromer, Purchasing Director, Pasco County Purchasing Department; 8919 Government Drive; New Port Richey, Florida 34654; fax machine number (727) 847-8065. Bidders are cautioned that any statements made by individuals, or employees of Pasco County, that materially change any portion of the bid document shall not be relied upon unless subsequently ratified by a formal written amendment to the bid document. No contractual or technical questions will be accepted after ten (10) days prior to the date set for bid opening.

ALTERNATIVE BIDS

The bidder **WILL NOT** be allowed to offer more than one (1) price (for the goods or services specified). If the said bidder should submit more than one (1) price on any item (or service), **ALL** prices will be rejected for that item. The bidders offering service delivery methods other than those permitted by the scope of work or specifications may submit a separate envelope clearly marked "Alternative Bid." Alternative bids will be deemed nonresponsive and will not be considered for award. All such responses will, however, be examined prior to award. Such examination may result in cancellation of all bids received to permit rewriting the scope of work or specifications to include the alternative method, or the alternative method may be considered for future requirements of Pasco County.

ANTITRUST

By entering into a contract, the contractor conveys, sells, assigns, and transfers to Pasco County all rights, titles, and interest it may now have or hereafter acquire under the antitrust laws of the United States and the State of Florida that relate to the particular goods or services purchased or acquired by Pasco County under the said contract.

APPLICABLE LAW

The contract shall be governed in all respects by the laws of the State of Florida, and any litigation with respect thereto shall be brought in the courts of Pasco County, Florida. The contractor shall comply with all applicable Federal, State, and local laws and regulations. Lack of knowledge by the bidder will in no way be a cause for relief from responsibility.

ASSIGNMENT
The contractor shall not assign, transfer, convey, sublet, or otherwise dispose of any award or any or all of its rights, title, or interest therein, or delegate the duties hereunder without the prior written consent of Pasco County.

AWARD
Consideration for award will be by proximity to specifications given, costs, and time of delivery. All purchases, leases, or contracts that are based on competitive bids will be awarded to the lowest, responsive, and responsible bidder. Complete and accurate responses to all items are necessary for the complete and fair evaluation of bids. Bid award, in addition to the above stated, will be based on compliance with the specified requirements as well as the "total-cost" or "life-cycle costing" concept, including the following: 1) Cost: A cost analysis will be conducted and will include all identifiable costs associated with acquisition, installation, maintenance, and operation of the bidder's offered equipment. The analysis will be based upon the bidder's proposal data and other costs which, in the judgment of the evaluators, will be incurred by the County resulting from acceptance of the bidder's proposal; 2) Equipment: Evaluation of equipment will be based on compliance with the specifications, expected life of equipment, output, maintenance, consumption, disposal value, warranty, complexity of operation, required training, and other factors that may contribute to the overall cost of the specified item; and 3) Bidder's Reputation and Experience: Evaluation of the bidder's reputation, past performance, and experience shall be based on the nature and extent of company data furnished, references and financial responsibility of the bidder. Pasco County reserves the right to award in whichever manner is deemed to be in the County's best interest.

BIDDER CERTIFICATION
The bidder agrees that submission of a signed bid form is certification that the bidder will accept an award made to it as a result of the submission.

BIDDERS' LIST
Failure to submit a bid for the item(s) specified will result in removal from the bidders' list for such (an) item(s). If a bid is not submitted, a "NO BID" response must be submitted to remain on the Pasco County's bidders' list for such items. A form for submitting a "NO BID" is provided on Page 2 for your convenience.

BID CLARIFICATIONS
If any party contemplating the submission of a bid on this invitation is in doubt as to the true meaning of any part of the plans, specifications, or other documents, he should submit a written request for an interpretation thereof to the Purchasing Director. The bidder's concerns, regarding clarification of specifications and/or discrepancies and/or omissions and/or changes to the attached specifications shall be made in writing and received by the County no later than ten (10) calendar days prior to the bid opening date. The letter from the bidder shall state clearly, and in detail, the basis for such concern(s) or request(s). The letter shall be addressed to the Purchasing Director, and marked "PREBID QUESTION" on the face of the envelope. The Purchasing Director will respond in writing. An interpretation of the bid invitation document will be made only by addendum duly issued to each party receiving a bid invitation. All such addenda shall become part of the contract documents. Pasco County shall not be responsible for explanations or interpretations of bid invitation documents except as issued in accordance herewith. No oral interpretations will be made as to the meaning of specifications or any other contract documents. Failure to comply with this provision will result in the bidder waiving his/her right to dispute the bid specification.

BIDDER INVESTIGATIONS

Before submitting a bid, each bidder shall make all investigations and examinations necessary to ascertain all site conditions and requirements affecting the full performance of the contract and to verify any representations made by Pasco County upon which the bidder will rely. If the bidder receives an award as a result of its bid submission, failure to have made such investigations and examinations will in no way relieve the bidder from its obligation to comply in every detail with all provisions and requirements of the contract documents, nor will a plea of ignorance of such conditions and requirements be accepted as a basis for any claim whatsoever by the contractor for additional compensation.

BID FORM SUBMISSION

Bids shall be submitted on the attached forms. Bids concerning separate bid invitations must not be combined on the same form or placed in the same envelope. Bids submitted in violation of this provision shall not be considered. All bids must be signed, in ink, in order to be considered. Erasures are not acceptable on bids; if necessary to make a change, strike out or draw a line through incorrect item and type the correction above, and initial the correction in ink. If the bidder is a firm or corporation, the bidder must show the title of the individual executing the bid, and if the individual is not an officer of the firm or corporation, the bidder must submit proof that the individual has the authority to obligate the firm or corporation. BIDS MAY NOT BE ALTERED OR AMENDED AFTER THE BID CLOSING.

BID ENVELOPES

Envelopes containing bids must be sealed and marked in the lower left-hand corner with the invitation number, commodity, and date and hour of opening of bids. Failure to do so may cause bid not to be considered. Express Company or Express Mail envelopes containing a sealed bid shall also be sealed and marked in the lower left-hand corner with the invitation number, commodity, and date and hour of opening of bids.

BID RECEIPT AND OPENING

Pasco County will receive sealed bid proposals until date and time indicated on bid cover. Bids must be delivered, by hand or mail, to the Pasco County Purchasing Department, located at 8919 Government Drive, New Port Richey, Florida, where they will be opened at the stated time. Bids must be time stamped in the Purchasing Department before or on the hour and date indicated on the cover sheet (Invitation for Bid) for the bid opening. Bids received after the date and time of the bid opening will be received, date stamped, and returned to the bidder unopened. It is the responsibility of the bidder to ensure that bids arrive at the designated opening place on time. Late or nondelivery due to mail or express delivery company failure will not be considered adequate reason for consideration of late bids. FACSIMILE (FAXED) BIDS WILL NOT BE ACCEPTED AND SHALL NOT BE CONSIDERED FOR EVALUATION OR AWARD. Notes may be taken at the public reading of the bid(s) at the specified time and date of the opening or a personal inspection may be made of the bid(s) after award has been made and documents are placed in central and public files.

BID ACCEPTANCE PERIOD

Any bid submitted as a result of the solicitation shall be binding on the bidder for a minimum of ninety (90) calendar days following the bid opening date. Any bid for which the bidder specifies a shorter acceptance period may be rejected.

BID WITHDRAWAL

Bids may not be changed after the bid closing time.

To withdraw a bid that includes a clerical error after bid opening, the bidder must give notice in writing to Pasco County of claim or right to withdraw a bid. Within two (2) business days after the bid opening, the bidder requesting withdrawal must provide to Pasco County all original work papers, documents, and other materials used in the preparation of the bid. A bidder may also withdraw a bid prior to the time set for the opening of bids by simply making a request in writing to Pasco County; no explanation is required. No bidder who is permitted to withdraw a bid shall, for compensation, supply any material or labor to or perform any subcontract or other work for the person to whom the contract is awarded or otherwise benefit from the contract. No partial withdrawals of a bid are permitted after the time and date set for the bid opening; only complete withdrawals are permitted. The decision to allow or disallow bid withdrawal remains solely with Pasco County.

BRAND NAMES

Any catalog, brand name, or manufacturer's reference used in the specifications is intended to be descriptive and not restrictive, and is used **only** to indicate type and quality desired. Any article, equipment, or material, which shall conform to the standards and excellence, so established, and is of equal merit, strength, durability, and appearance to perform the desired function, is deemed eligible for offer as a substitute. The qualifications of the offering shall be judged as to their conformance with these specifications. Any equipment offered other than herein specified shall be subject to a competitive demonstration and evaluation by Pasco County. The determination as to whether any alternate product or service is or is not equal shall be made by Pasco County, and such determination(s) shall be final and binding upon all bidders.

CANCELLATION

Pasco County reserves the right to cancel a resulting contract, without cause, by giving thirty (30) days' prior written notice to the contractor of the intention to cancel, or with cause if at any time the contractor fails to fulfill or abide by any of the terms or conditions specified. Failure of the contractor to comply with any of the provisions of a resulting contract shall be considered a material breach of contract and shall be cause for immediate termination of the contract at the sole discretion of Pasco County. In addition to all other legal remedies available to the County, Pasco County reserves the right to cancel and obtain from another source, any services which have not been provided within the required period of time or, if no such time is stated, within a reasonable period of time from the date of order or request, as determined by the County.

CHANGE IN SCOPE OF WORK

Pasco County may order changes in the work consisting of additions, deletions, or other revisions within the general scope of the contract. No claims may be made by the contractor that the scope of the project or of the contractor's services has been changed, requiring changes to the amount of compensation to the contractor or other adjustments to the contract, unless such changes or adjustments have been made by written amendment to the contract or purchase order signed by Purchasing Director. If the contractor believes that any particular work is not within the scope of the project, is a material change, or will otherwise require more compensation to the contractor, the contractor must immediately notify Pasco County in writing of this belief. If Pasco County believes that the particular work is within the scope of the contract as written, the contractor will be ordered to and shall continue with the work as changed and at the cost stated for the work within the scope.

CONFLICT OF INTEREST

The contractor, by submission of its proposal, certifies that to the best of his/her knowledge or belief, no elected/appointed official or employee of the County is financially interested, directly or indirectly, in the offer of goods or services specified in this invitation.

CERTIFICATION OF INDEPENDENT PRICE DETERMINATION

The bidder certifies that the prices submitted in response to the solicitation have been arrived at independently and without—for the purpose of restricting competition—any consultation, communication, or agreement with any other bidder or competitor relating to those prices, the intention to submit a bid, or the methods or factors used to calculate the prices bid.

COLLUSION AMONG BIDDERS

Each bidder, by submitting a bid, certifies that it is not a party to any collusive action or any action that may be in violation of the Sherman Antitrust Act. Any or all bids shall be rejected if there is any reason for believing that collusion exists among the bidders. Pasco County may or may not, at its discretion, accept future bids for the same work from participants in such collusion. More than one (1) bid from an individual, firm, partnership, cooperation, or association under the same or different names may be rejected. Reasonable grounds for believing that a bidder has interest in more than one (1) bid for the work being bid may result in rejection of all bids in which the bidder is believed to have interest. Nothing in this clause shall preclude a firm acting as a subcontractor to be included as a subcontractor for two (2) or more primary contractors submitting a bid for the work.

DEBARMENT

By submitting a bid, the bidder certifies that it is not currently debarred from submitting bids for contracts issued by any political subdivision or agency of the State of Florida and that it is not an agent of a person or entity that is currently debarred from submitting bids for contracts issued by any subdivision or agency of the State of Florida.

ETHICS IN PUBLIC PROCUREMENT

The contract shall incorporate by reference, but shall not be limited to, the provisions of law contained in Chapter 112, Florida Statutes. A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity; may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids on leases or real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO for a period of thirty-six (36) months from the date of being placed on the convicted vendor list. The bidder certifies that its bid was made without collusion or fraud; that it has not offered or received any kickbacks or inducements from any other bidder, supplier, manufacturer, or subcontractor in connection with this bid; and that it has not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services, or anything of value.

EXCEPTIONS

Bidders taking exception to any part or section of the solicitation shall indicate such exceptions on the bid form or appendix. Failure to indicate any exception will be interpreted as the bidder's

intent to comply fully with the requirements as written. Conditional or qualified bids, unless specifically allowed, shall be subject to rejection in whole or in part.

EXPENSES INCURRED IN PREPARING BID

Pasco County accepts no responsibility for any expense incurred by the bidder in the preparation and presentation of a bid. Such expenses shall be borne exclusively by the bidder.

ERRORS IN EXTENSIONS

If the unit price and the extension price are at variance, the unit price shall prevail.

FORCE MAJEURE

The contractor shall not be held responsible for failure to perform the duties and responsibilities imposed by the contract due to legal strikes, fires, riots, rebellions, and acts of God beyond the control of the contractor, unless otherwise specified in the contract.

FAILURE TO DELIVER

In the event of failure of the contractor to deliver the goods and services in accordance with the contract terms and conditions, Pasco County may procure the goods and services from other sources and hold the contractor responsible for any resulting additional costs. A failure to deliver will result in immediate termination of a resulting contract, and immediate disqualification and debarment from submitting bids to Pasco County for a maximum of three (3) years. These remedies shall be in addition to any other remedies that Pasco County may have available.

FAILURE TO ENFORCE

Failure by Pasco County at any time to enforce the provisions of the contract shall not be construed as a waiver of any such provisions. Such failure to enforce shall not affect the validity of the contract or any part thereof or the right of Pasco County to enforce any provision at any time in accordance with its terms.

FAIR LABOR STANDARDS

By submission of a bid, the bidder certifies that the contractor(s) and/or subcontractor(s) providing product(s) or service(s) shall, in the execution or performance of such a contract, maintain fair labor standards as defined in applicable State and Federal regulations.

INDEPENDENT CONTRACTOR

The contractor shall be legally considered an independent contractor and neither the contractor nor its employees shall, under any circumstances, be considered servants or agents of Pasco County; and Pasco County shall be at no time legally responsible for any negligence or other wrongdoing by the contractor, its servants, or agents. Pasco County shall not withhold from the contractor any Federal or State unemployment taxes, Federal or State income taxes, Social Security tax, or any other amounts for benefits to the contractor. Further, Pasco County shall not provide to the contractor any insurance coverage or other benefits, including workers' compensation, normally provided by Pasco County for its employees.

INFORMALITIES AND IRREGULARITIES

Pasco County has the right to waive minor defects or variations of a bid from the exact requirements of the specifications that do not affect the price, quality, quantity, delivery, or performance time of the services being procured. If insufficient information is submitted by a bidder with the bid for Pasco County to properly evaluate the bid, Pasco County has the right to require such additional information as it may deem necessary after the time set for receipt of

bids, provided that the information requested does not change the price, quality, quantity, delivery, or performance time of the services being procured. The Board reserves the right to reject any or all bids in whole or in part; to award by any item, group(s) of items, total bid, or accept the bid that is most advantageous and in the best interest of Pasco County.

IDENTICAL BIDS
Identical bids or bids which otherwise appear suspicious will be reported to the County Attorney for investigation.

LIMITATION OF COST
The contractor agrees to perform the work specified and complete all obligations under the contract within the stated amounts.

NONAPPROPRIATION
All funds for payment by Pasco County under this contract are subject to the availability of an annual appropriation for this purpose by Pasco County. In the event of nonappropriation of funds by Pasco County for the services provided under the contract, Pasco County will terminate the contract, without termination charge or other liability, on the last day of the then-current fiscal year or when the appropriation made for the then-current year for the services covered by this contract is spent, whichever event occurs first. If at any time funds are not appropriated for the continuance of this contract, cancellation shall be accepted by the contractor on thirty (30) days' prior written notice, but failure to give such notice shall be of no effect, and Pasco County shall not be obligated under this contract beyond the date of termination.

NONCONFORMING TERMS AND CONDITIONS
A bid response that includes terms and conditions that do not conform to the terms and conditions in the bid document is subject to rejection as nonresponsive. Pasco County reserves the right to permit the bidder to withdraw nonconforming terms and conditions from its bid response prior to a determination by Pasco County of nonresponsiveness based on the submission of nonconforming terms and conditions.

NONDISCRIMINATION
By submission of bid, the bidder certifies that the contractor(s) and/or subcontractor(s) providing product(s) or service(s) shall not discriminate against any employee or applicant for employment, to be employed in the performance of such contract, with respect to his/her hire, tenure, terms, conditions, or privileges of employment, because of his/her race, color, religion, sex, disability, or national origin, as outlined in applicable State and Federal regulations.

ORAL STATEMENTS
No oral statement of any person shall modify or otherwise affect the terms, conditions, or specifications stated in this contract. All modifications to the contract or purchase order must be made in writing by Pasco County.

PROCUREMENT REGULATIONS
A copy of the Pasco County Procurement Ordinance is available for review at the County Purchasing Department, 8919 Government Drive, New Port Richey, Florida.

PUBLIC INFORMATION

Upon public opening of all bids or proposals presented to Pasco County as a result of this solicitation, any and all information contained therein is considered public and may be reviewed by any persons interested in doing so.

PURCHASE ORDER REQUIREMENT

Purchases of Pasco County are authorized only if a signed purchase order issued in advance of the transaction, showing that the ordering agency has sufficient funds available to pay for the service. Contractors providing services without a signed purchase order do so at their own risk. Pasco County will not be liable for payment for any services provided under the contract unless a valid purchase order has been issued to the contractor.

PAYMENT TERMS AND DISCOUNTS

Unless otherwise indicated in the bid documents, payment terms will be net forty-five (45) days. Terms not consistent with this provision are not acceptable and may be cause for rejection. Pasco County will pay the contractor within forty-five (45) days after the receipt of a correct invoice for reasonable work allocable to the contract or after the date of acceptance of work that meets contract requirements, whichever event occurs later. Payment(s) are considered effective on the date payment is mailed.

Discounts for prompt payment requiring payment by Pasco County within a stipulated number of days will be interpreted as applying within the stipulated number of calendar days after the date of receipt by Pasco County of a correct invoice describing reasonable work allocable to the contract or after the date of acceptance of work that meets contract requirements, whichever event occurs later. Discounts for payment in less than forty-five (45) days will not be considered during evaluation for award, but may be taken if applicable after award.

Payment for construction services will be in accordance with Chapter 218, Part VII, Florida Statutes (The Florida Prompt Payment Act).

PAYMENT PROCEDURES

The Board has adopted Resolution No. 95-70, incorporating its Invoice Payment Procedures Policy in order to help ensure that vendors providing goods and/or services to the Board receive payment in a timely manner and in accordance with Chapter 218, Part VII, Florida Statutes (The Florida Prompt Payment Act). A copy of Resolution No. 95-70 (which includes the policy) is available for viewing during normal business hours at the Office of the Pasco County Clerk of the Circuit Court; 38053 Live Oak Avenue; Department of Secretarial Services, Room 205; Dade City, Florida 33525. Copies of the Resolution may be obtained at a cost of One and 20/100 Dollars ($1.20). Please make your check payable to Jed Pittman, Clerk of the Circuit Court, and forward payment to the Department of Secretarial Services at the address noted above. For further information, please call (352) 521-4347.

Several payment options are available to successful vendor, upon receipt of a correct invoice:

1. Check may be mailed to the remit address on the invoice. The check is sent to the Post Office the day after Board approval.
2. Check may be picked up in Dade City. The vendor must pick up the check the day after Board approval. The successful bidder or contractor must call (352) 521-4599 for detailed instructions.

3. Payment may be wire-transferred to the vendor's bank account. The vendor must call (352) 521-4599 for detailed instructions.

QUALIFICATIONS OF BIDDERS

The bidder may be required before the award of any contract to show to the complete satisfaction of Pasco County that it has the necessary facilities, ability, and financial resources to provide the service specified therein in a satisfactory manner. The bidder may also be required to give a past history and references in order to satisfy Pasco County in regard to the bidder's qualifications. Pasco County may make reasonable investigations deemed necessary and proper to determine the ability of the bidder to perform the work, and the bidder shall furnish to Pasco County all information for this purpose that may be requested. Pasco County reserves the right to reject any bid if the evidence submitted by, or investigation of, the bidder fails to satisfy Pasco County that the bidder is properly qualified to carry out the obligations of the contract and to complete the work described therein. Evaluation of the bidder's qualifications shall include:

1. The ability, capacity, skill, and financial resources to perform the work or provide the service required.
2. The ability of the bidder to perform the work or provide the service promptly or within the time specified, without delay or interference.
3. The character, integrity, reputation, judgment, experience, and efficiency of the bidder.
4. The quality of performance of previous contracts or services.

QUALITY OF GOODS

All goods shall be new, in first class condition, and of the manufacturer's latest design of the model presently in production. All materials, supplies, and equipment furnished or services performed under the terms of this purchase order or contractual agreement shall comply with the requirements and standards specified in the Williams-Steiger Occupational Safety and Health Act of 1970 (Public Law 91-596), as well as other applicable Federal, State, and local codes. Equipment and materials furnished by the bidder having serious defects, corrosion, or scratches which tend to present an "other than new" appearance shall be promptly replaced or such defects promptly corrected by the bidder at no cost to the County. Any existing Material Safety Data Sheets (MSDS) for the products, materials, supplies, or equipment being bid must be submitted with the bid. No product containing asbestos, lead paint, or polychlorinated biphenyl (PCB) in any form will be considered for award by Pasco County.

RECOVERY OF MONEY

Whenever, under the contract, any sum of money shall be recoverable from or payable by the contractor to Pasco County, the same amount may be deducted from any sum due the contractor under the contract or under any other contract between the contractor and Pasco County. The rights of Pasco County are in addition and without prejudice to any other right Pasco County may have to claim the amount of any loss or damage suffered by Pasco County on account of the acts or omissions of the contractor.

RISK OF LOSS

Pasco County shall be relieved from all risks of loss or damage to goods during periods of transportation, manufacture, and the entire time the goods are in the possession of the County prior to acceptance by Pasco County. At such time, the risk of loss or damage for goods shall pass to the County. The bidder/contractor shall not be responsible for damage to the goods occasioned by negligence of the County or its employees.

RIGHT TO AUDIT

The contractor shall maintain such financial records and other records as they relate to the purchase of goods and/or services by Pasco County from the subject vendor. The contractor shall retain these records for a period of three (3) years after final payment, or until they are audited by Pasco County, whichever event occurs first. These records shall be made available during the term of the contract and the subsequent three (3) year period for examination, transcription, and audit by Pasco County, its designees, or other authorized bodies.

TAXES

All bids shall be submitted exclusive of direct Federal, State, and local taxes; however, if the bidder believes certain taxes are properly payable, he/she may list such taxes separately in each case directly below the respective item bid price. Prices quoted must be in units specified, and shall not include the cost of any such taxes, including those on any material, supplies, or equipment used or installed in the work. Pasco County does not pay Federal Excise and Sales Taxes on direct purchases of tangible personal property. See Exemption Number on face of the resulting purchase order. This exemption does not apply to purchases of tangible personal property made by contractors who use the tangible personal property in the performance of contracts for improvement of County-owned real property. Please refer to Chapter 192, Florida Statutes.

END OF GENERAL PROVISIONS

SPECIAL PROVISIONS

In addition to the General Provisions of this solicitation, these Special Provisions, along with the specifications that follow, apply in like force to this solicitation and to any subsequent contract resulting therefrom.

MOTOR VEHICLE INDUSTRY LICENSING

The contractor shall comply with Chapter 320, Florida Statutes. Failure to comply may result in a determination of nonresponsibility on the basis that the bidder is not qualified to legally contract with the County and may further cause such noncompliant offers to be rejected.

SURETY REQUIRED

1. Bid Surety: A Bid Bond, cashier's check, or certified check, in the amount of five (5) percent of the amount of the bid, made payable to Pasco County shall accompany each bid. The bid surety of all bidders shall be retained until after the award of the contract is made. The bid surety of the successful bidder shall be retained until the posting of a Performance Bond. The failure of the bidder to accept an award and file acceptable Performance and/or Payment Bonds within fifteen (15) days after award shall be just cause for cancellation of the award and the forfeiture of the bid surety to Pasco County as liquidated damages. Award may then be made to the next lowest, responsive, and responsible bidder. The bond shall be a Corporate Surety Bond issued by a surety company authorized to do business in the State of Florida.

2. Performance Surety: A Performance Bond, in the amount of 100 percent of the bid, shall be required of the successful bidder to ensure satisfactory completion of the work. The bond shall be a Corporate Surety Bond issued by a surety company authorized to do business in the State of Florida. The Attorney in Fact, who signs the bond, must file with the bond, a certificate and effective dated copy of a Power of Attorney. The surety company shall have a current, valid Certificate of Authority issued by the State of Florida. The surety company shall have current, valid Certificate of Authority issued by the United States Treasury Department under Sections 9304 to 9308 of Title 31 of the U.S. Code. The surety company shall be in full compliance with the provisions of the Florida Insurance Administrative Code, and shall have at least twice the minimum surplus and capital required by the same at the time the Invitation for Bid is issued.

3. Payment Surety: A Payment Bond, in the amount of 100 percent of the bid, shall be required of the successful bidder to guarantee payment of all persons who have and fulfill contracts with the contractor for performing labor or providing equipment or material in the performance of the work provided for in the contract. The bond shall be a Corporate Surety Bond issued by a surety company authorized to do business in the State of Florida. The Attorney in Fact, who signs the bond, must file with the bond, a certificate and effective dated copy of Power of Attorney. The surety company shall have a current, valid Certificate of Authority issued by the State of Florida. The surety company shall have current, valid Certificate of Authority issued by the United States Treasury Department under Sections 9304 to 9308 of Title 31 of the U.S. Code. The surety company shall be in full compliance with the provisions of the Florida Insurance Administrative Code, and shall have at least twice the minimum surplus and capital required by the same at the time the Invitation for Bid is issued.

4. Alternative Surety: A certified check for cash escrow deposit, in the face amount of the contract, such as a Personal Bond, Property Bond, or a bank or savings and loan association Letter of Credit may be tendered in lieu of a Bid, Payment, or Performance Bond subject to approval by the County.

TRANSPORTATION AND PACKING

Prices quoted shall be net, including transportation and delivery charges fully prepaid by the seller, f.o.b. New Port Richey, Florida. No additional charges will be allowed for packing, packages, or partial delivery costs. By submitting their bids, all bidders certify and warrant that the price offered for f.o.b. destination includes only the actual freight rate costs at the lowest and best rate and is based upon actual weight of the goods to be shipped. Standard commercial packaging, packing, and shipping containers shall be used, except as otherwise specified herein.

WARRANTY

Unless otherwise specified, the bidder shall define any warranty service and replacements that will be provided during and subsequent to this contract. Bidders must explain on an attached sheet to what extent warranty and service facilities are provided.

END OF SPECIAL PROVISIONS

TWO (2) TO TEN (10)
HEAVY-DUTY LOW-FLOOR
THIRTY (30) FOOT TRANSIT BUS
TECHNICAL SPECIFICATIONS

1.0 GENERAL INFORMATION

1.1 The vehicle shall confirm in all respects to State of Florida motor vehicle laws (including, but not limited to, Chapter 316, Florida Statutes (F.S.), Safety Rules of the Department of Transportation (DOT); Chapter 14-90, Florida Administrative Code (FAC), promulgated under the requirements of Chapter 341, F.S.); and the Americans with Disabilities Act (ADA); Title 49, Code of Federal Regulations (C.F.R.), Part 38, Accessibility Specifications for Transportation Vehicles, Subpart B, Buses, Vans, and Systems. This vehicle shall also comply with 40 C.F.R., Parts 85 and 86, Air Pollution and Emission Standards for New Vehicles. Compliance with all applicable Federal motor vehicle safety standards shall also be required. The successful bidder will be required to provide any and all results of testing accomplished under the final rules issued by the Federal Transit Administration (FTA), 49 C.F.R., Part 655, Bus Testing Program. These test results are to be provided by the successful bidder to the purchaser upon availability of the test results for release. The tests include the evaluation of maintainability, reliability, safety, performance, structural integrity, fuel economy, and noise.

1.2 The bidder must be a person, firm, or corporation that:

1.2.1 Has in operation or has the capability to have in operation, a manufacturing plant.

1.2.2 Has adequate engineering personnel, or has the capability to have such personnel, to satisfy any engineering or service problem that may arise during the warranty period.

1.2.3 Has the necessary facilities and financial resources, or has the capability to obtain such facilities and resources, to complete the contract in a satisfactory manner within the required time.

1.3 This type bus must have a manufacturer's rated life cycle of twelve (12) years, 500,000 miles and have been tested under this rating criteria at the FTA Bus Testing Facility, currently located at Altoona, Pennsylvania, in accordance with the final rules issued by FTA in 49 C.F.R., Part 655, Bus Testing Program.

2.0 DESCRIPTION

2.1 The bus shall be a new, current-year production of heavy-duty, low-floor transit vehicle design and construction. The bus is to be a rear-engine design with an automatic transmission.

2.2 Bus shall be low-floor design with adjacent front-door ramp system, and include a passenger mid-door access. The design of such shall reflect the highest standards of concern of the welfare and safety of the general public and, in particular, the elderly and handicapped. A cutaway-type chassis will not be acceptable. Bus body and chassis shall be built and certified by the same manufacturer.

2.3 Dimensions:

With the exceptions of exterior mirrors, marker lights, bumpers, fender skirts, wipers, washers, and rub rails, the coach shall have the following overall dimensions at static conditions and design height.

Height:	126 Inches
Length Over Bumpers	**Thirty (30) Feet, Nine (9) Inches**
Width:	102 Inches
Wheelbase:	157 Inches
Approach Angle:	8.5°
Break-Over Angle:	13.0°
Departure Angle:	9.0°

2.4 Underbody clearance:

2.4.1 The approach angle is the angle measured between a line tangent to the front tire static loaded radius arc and the initial point of structural interference forward of the front tire to the ground.

2.4.2 The departure angle is the angle measured between a line tangent to the rear tire static loaded radius arc and the initial point of structural interference rearward of the rear tire to the ground.

2.4.3 The break-over angle is the angle measured between two (2) lines tangent to the front and rear tire static loaded radius and intersecting at a point on the underside of the vehicle that defines the largest ramp over which the vehicle can roll.

2.4.4 Ground clearance: Ground clearance shall be no less than eight (8) inches, except within the axle zone and wheel area.

2.4.5 Axle clearance: Axle zone clearance, which is the projected area between tires and wheels on the same axial centerline, shall be no less than 5.5 inches.

2.4.6 Wheel area clearance: Wheel area clearance, shall be no less than 6.5 inches for parts fixed to the bus body and five (5) inches for parts that move vertically with the axles.

2.5 Floor Height:

Floor height may be a maximum of fourteen (14) inches at the centerline of the bus and the step height cannot exceed fourteen (14) inches.

2.6 Interior Headroom:

The headroom above the aisle and at the centerline of the aisle seats, shall be no less than ninety-six (96) inches in the forward half of the bus tapering to no less than seventy-five (75) inches forward of the rear settee.

2.7 Weight:

The curb weight of the coach shall not exceed 22,000 pounds. It shall be a design goal to construct the bus as light in weight as possible without degradation of safety, appearance, comfort or performance. The bus, when fully loaded, including standees and all liquids, shall not exceed axle and tire designed weight capacities. The Gross Vehicle Weight Rating (GVWR) shall be a minimum of 28,600 pounds.

2.8 Capacity:

The coach shall be designed to carry a full load of passengers and standees without exceeding the GVWR or the Gross Axle Weight Rating (GAWR). Passenger weight shall be calculated as 150 pounds per passenger.

3.0 SERVICEABILITY

3.1 The power plant shall be arranged so that accessibility for all routine maintenance is assured. No special tools, other than dollies and hoists, shall be required to remove the power plant. The muffler, exhaust system, air cleaner, air compressor, starter, alternator, radiator, all accessories, and any other component requiring service or replacement shall be easily removable and independent of the engine and transmission removal.

3.2 All fluid fill locations shall be properly labeled to help ensure correct fluid is added, and all fillers shall be easily accessible with standard funnels, pour spouts, and automatic dispensing equipment.

3.3 The engine and transmission shall be equipped with sufficient heavy-duty fuel and oil filters for efficient operation and to protect the engine and transmission between scheduled filter changes. To the extent practicable, the filters shall be of the spin-on, disposable type or integral with the engine and transmission. All filters shall be easily accessible, and the filter bases shall be plumbed to ensure correct reinstallation.

3.4 The bus shall be so designed and built as to provide full service access. Service entry to rear engine compartment to be accessible by rear swing-up door and left-hand and right-hand hinged swing outside door, meshed for airflow. The rear access door will allow service personnel to pull out the engine and transmission dipsticks.

3.5 Access shall also be provided to service the following:

3.5.1 Service check and addition of fluids including, but not be limited to, engine, transmission and power steering oils, and engine coolant.

3.5.2 Battery compartment.

3.5.3 Body and chassis electrical circuit panel.

3.5.4 Windshield wiper motor check and service, and windshield washer reservoir check/fill.

3.6 The fuel door will be mounted on the right side of the bus.

3.7 Service entry doors shall be latched by push-button-type or paddle latch.

4.0 MAINTAINABILITY

4.1 Prime consideration shall be given to the routing problems of maintaining the buses. All bus components and systems, mechanical, fluid, and electrical, which will require periodic physical work or inspection processes, shall be installed so that a minimum of time is spent gaining access to the critical areas.

4.2 Each bus shall be designed to facilitate the disassembly, reassembly, servicing, or maintenance with the use of tools and items that are normally available as commercial standard items. Requirements of any special tools must have the concurrence of the Pasco County Fleet Maintenance Section. In addition, manufacturer-approved training will be provided to maintenance technicians on unique design systems.

4.3 The body and structure of all buses shall be designed for ease of maintenance and repair. Individual panels or other equipment, which may be damaged in normal service, shall be repairable or replaceable. Ease of repair shall be related to the vulnerability of the item to damage in service.

4.4 Welding procedures and materials shall be in accordance with standards of the American Society for Testing and Materials (ASTM) and American Welding Society. All visible welds shall be ground smooth. Where metal is welded, the contact surface shall be free of scale, spatter, and grease and shall be treated to preclude rusting.

4.5 All parts components and accessories shall be new. All exposed surfaces and edges shall be smooth, free from burrs and other projections and shall be neatly finished.

4.6 Bolts, washers, screws, and nuts must be certified against counterfeit or be American manufactured ONLY. This certification shall apply to the basic vehicle and all fasteners used to accomplish the modifications required by this specification.

4.7 Components with identical functions shall be interchangeable to the extent practicable. These components shall include, but are not limited to, passenger window hardware, interior trim, lamps, lamp lenses, and seat assemblies. Components with non-identical functions shall not be, or appear to be, interchangeable. A component shall not be used in an application for which it was neither designed nor intended. Any one component or unit used in the construction of these buses shall be an exact duplicate in design, manufacture, and assembly for each bus in each order group in this contract.

4.8 The vendor will supply diagnostic software needed to reference parts, procedures, and technical data in support of bus maintenance.

5.0 MATERIALS GENERAL SPECIFICATIONS

5.1 All copper tubing shall be industry standard. Long tubing nuts shall be applied where space conditions permit.

5.2 All piping, tubing, cables, and wiring shall be properly bracketed.

5.3 All mounting of assemblies and subassemblies including the power plant and accessories shall be mechanically isolated to minimize the transmission of vibration of the body structure.

5.4 All pipe fittings shall be of heavy-duty type and shall be designed to withstand the maximum pressure that could be generated under normal overload conditions with the air or fluid system of which they are a component.

5.5 All burrs and sharp edges shall be dressed so as to prevent injury to passengers, operators, and maintenance personnel.

5.6 All clevises shall be removable and not welded to the rods.

5.7 All welding shall conform to American Welding Society standard quality procedures and, where visible, have a finished appearance.

5.8 All plastics and synthetic material shall be fire retardant and self extinguishing.

5.9 All grease and oil fittings shall be readily accessible for lubrication. All elements of steering and drive systems requiring scheduled lubrication shall be provided with grease fittings. These fittings shall be located for ease of inspection and shall be accessible with a standard grease gun from a pit or with the bus on a hoist.

5.10 All steel bolts, nuts, screws, and washers shall be cadmium plated, except where otherwise requested. The thickness and method of cadmium coating shall conform to ASTM Specification No. A165, latest revision, for Type TS coating. All cap

screws, nuts, and bolts shall be of Society of Automotive Engineers (SAE) Grade Five material, unless the application requires a higher-grade material.

5.11 All sheet metal screws shall comply with ASTM and SAE recommendations relative to quality and installation.

5.12 All air, oil, and water lines and openings into equipment units shall be sealed, plugged, or adequately protected against entrance of contaminants until connected.

5.13 Mountings of major assemblies, including engine, transmission, axles, power steering, and suspension components shall be such that dismounting shall be easily carried out by conventional shop methods.

5.14 All components, assemblies, and subassemblies shall be readily accessible for service, repair, removal, and replacement.

5.15 The manufacturer shall use, whenever possible, low-mercury fluorescent lighting tubes, PCB-free ballast units, cleanable filters, and non-asbestos brake blocks and gaskets.

6.0 BODY DESIGN AND MATERIALS

The bus shall have a clean, smooth, sleek, compact design, correctly proportioned and properly balanced. The exterior and body features, including grills and louvers, shall be shaped to allow complete and easy cleaning by automatic bus washers without snagging washer brushes. Water and dirt shall not be retained in or on any body feature to freeze or bleed out onto the bus after leaving the washer. Body and windows shall be sealed to prevent leaking of air, dust, or water under normal operating conditions and during cleaning in automatic bus washers for the service life of the bus. Accumulation of spray and splash on any window of the bus, generated by the bus wheels on a wet road, shall be minimized.

7.0 STRENGTH AND FATIGUE LIFE

7.1 The coach structure shall be of a sufficient design to undergo structural durability testing such as the Altoona PTI testing for twelve (12) years and 500,000 miles.

7.2 All failures involving basic body, structure, axles and suspension are considered structurally related failures for purposes of this specification.

7.3 The bus sidewall design shall provide passenger protection from automobile side impact. The roof and sides shall be engineered to support the entire weight of a fully loaded vehicle on its top and side, if overturned.

8.0 FIREPROOFING

The passenger and engine compartments shall be separated by a bulkhead(s) that shall, by incorporation of fireproof materials in its construction, be a firewall. The engine compartment shall include areas where the engine and exhaust system are housed, including the muffler, if mounted above the horizontal shelf. This firewall

shall preclude or retard propagation of an engine compartment fire into the passenger compartment. Only necessary openings shall be allowed in the firewall, and these shall be fireproofed. Any passageways for the climate control system air shall be separated from the engine compartment by fireproof material. Piping through the bulkhead shall have copper, brass, or fireproof fittings sealed at the firewall with copper or steel piping on the forward side. Wiring may pass through the bulkhead only if connectors or other means are provided to prevent or retard fire propagation through the firewall. Engine access panels in the firewall shall be fabricated of fireproof material and secured with fireproof fasteners. These panels, their fasteners, and the firewall shall be constructed and reinforced to minimize warping of the panels during a fire that will compromise the integrity of the firewall.

9.0 CLEARANCES

9.1 Ground Clearances: Buses shall have a minimum of 7.2 inches of front ground clearance and 8.1 inches of rear ground clearance at any position under the bus excluding axle zones. The minimum ground clearance in any axle zone shall be six (6) inches. No part of the bus, other than the wheels, tires, or mud flaps, shall touch a flat road surface in a stopped condition with a single tire or a dual set fully deflated.

9.2 Clearance Angles: Buses shall have a minimum angle of approach of 8.5°, a minimum angle of departure of 9°, and a minimum break-over of 9°, to accommodate safe negotiation of vertical curves.

10.0 STEERING/TURNING

10.1 The outside turning radius of the bus shall not exceed thirty (30) feet.

10.2 With the bus on dry, level pavement, the tires inflated to the recommended pressure, and the front wheels positioned straight ahead, the torque required to turn the steering wheel 10° shall be no greater than seven (7) foot-pounds. The steering wheel shall be a padded, two (2) spoke design with a maximum diameter of eighteen (18) inches. The steering column shall be equipped with tilt and telescoping features. The column shall be a Douglas DA-929 or approved equal.

10.3 Hydraulically assisted power steering shall be provided. The steering gear shall be a TRW Model TAS 65 or approved equal. Flexible line numbers and lengths shall be minimized. Power steering failure shall not result in loss of steering control.

10.4 Caster angle shall be selected to provide a tendency for the return of the front wheels to the straight-ahead position with minimal assistance from the driver.

11.0 PERFORMANCE

11.1 The propulsion system shall be designed to allow the vehicle to meet or exceed the defined acceleration, gradability, and top-speed requirements. The requirements shall be met while driving all accessory drives. Timing for the acceleration shall commence when the accelerator is depressed; i.e., idle start. To ensure adequate performance and drive ability, the vehicle shall also be capable of full-throttle

acceleration from converter stall ("D" range, brakes locked, full throttle) in the times listed:

Maximum Idle Start Acceleration Times on a Level Surface

Speed (mph)	*Time (seconds)*
10	5.0
20	10.8
30	20.0
40	31.0
50	55.0
60	72.0

11.2 Gradability requirements shall be met on a dry asphalt or concrete service at GVWR with all accessories operating. The power plant shall meet and maintain a speed of forty-four (44) mph on a 2.5 percent grade and ten (10) mph on a sixteen (16) percent grade.

11.3 The coach shall be capable of achieving a top speed of seventy (70) mph on a straight and level road at GVWR with all accessories operating.

11.4 The operating range shall be no less then 400 miles with full fuel (diesel). Range calculations shall be done using useable fuel only.

12.0 ELECTRONIC NOISE CONTROL

Electrical and electronic subsystems and components on all buses shall be shielded so as not to emit electromagnetic radiation that will interfere with on-board communications equipment.

13.0 INTERIOR/EXTERIOR NOISE

13.1 The interior noise produced by any one (1) bus shall not exceed eighty (80) decibel (db) in the Altoona interior noise test. The maximum db level at the driver's ear at thirty (30) mph on a flat and level roadway shall not exceed eighty (80) db.

13.2 The exterior noise produced by any one (1) bus shall not exceed eighty-three (83) db in the Altoona exterior noise test.

14.0 OPERATING ENVIRONMENT

The bus shall achieve normal operation in ambient temperature ranges of -15° Fahrenheit (F) to +120° F at relative humidity between five (5) percent and 100 percent. Degradation of performance due to atmospheric conditions shall be minimized at temperatures below -10° F, above 115° F, or at altitudes above 3,000 feet.

15.0 ENGINE, DIESEL

15.1 Engine shall be a Cummins ISB-02 (or approved equal), in-line six (6) cylinder turbo-charged diesel fuel powered engine producing a minimum of 520 foot-pounds of

torque at 1,600 rpm and 260 hp at 2,600 rpm. Engine accessories, including air compressor and power-steering pump must be gear driven. The engine shall, with normal maintenance, operate with no smoke or objectionable odors using fuels and oils meeting the manufacturer's recommendation. Engine starter switches are to be wired with a protective circuit to prevent starter-engagement with engine running. The engine shall be equipped with primary and secondary spin-on fuel filters.

15.2 The engine and transmission shall be mounted as an in-line, T-Drive unit and shall be demountable as a unit and so arranged to provide convenient accessibility for servicing. The power plant shall be so mounted as to provide maximum isolation to audible frequencies.

15.3 The power plant and compartment shall be sealed to prevent smoke or fumes from entering the coach interior. The engine bulkhead and exhaust plenum duct shall be insulated to minimize heat and noise transfer to the interior.

15.4 The engine shall be equipped with an electronically controlled management system, compatible with multiplex wiring systems and either a twelve (12) or twenty-four (24) volt electrical system. The engine control system shall be capable of receiving electronic inputs from the engine and other vehicle systems. Communication between these electronic systems shall be made using the SAE J1939 Recommended Practice Communication Link. The engine's electronic management system shall monitor operating conditions and provide instantaneous adjustments to optimize both engine and bus performance. The system shall be programmable to allow optimization of engine performance.

15.5 The engine shall have on-board diagnostic capabilities, able to monitor vital functions, store out-of-parameter conditions in memory, and communicate faults and vital conditions to service personnel. Diagnostic reader device connector ports, suitably protected against dirt and moisture, shall be provided in the operator’s area and near or inside the engine compartment. The on-board diagnostic system shall inform the operator via visual and/or audible alarms when out-of-parameter conditions exist for vital engine functions.

15.6 The engine shall be equipped with an operator-controlled fast-idle device. The fast-idle control shall mount on the dash or side console and shall activate only with the transmission in neutral. The control shall be interlocked so as to return the engine to normal-idle rpms automatically when the parking brake is released or the transmission is put in gear.

15.7 The air cleaner is to be a Cooper Model ZD2502 Cyclonic heavy-duty (or approved equal), dual-stage design with replaceable element and restriction indicator, conveniently located in the engine compartment. Direct access shall be provided for replacement without removal of any other chassis components or brackets. Fresh air routed from a body intake grill located in the extreme upper-right rear of bus. The air inlet grill shall be as close to the roofline as possible to ensure the cleanest air possible. Shall meet all current applicable emissions standards.

15.8 It shall have a primary fuel water separator, Raycor, or approved equal, with see-through bowl and self-venting drain.

15.9 Engine Guard:

It shall be a Cummins programmable system, or approved equal, electronically controlled engine shutdown system. The system shall sense the engine's low-oil pressure and high-coolant temperature.

15.10 Accessories:

Engine-driven accessories shall be mounted for quick removal and repair. These accessories shall be driven at speeds sufficient to ensure adequate system performance during extended periods of idle operation and low route speed portion of the design operating profile.

15.11 Hydraulic Systems:

15.11.1 Engine-driven accessories shall be mounted for quick removal and repair. These accessories shall be driven at speeds sufficient to ensure adequate system performance during extended periods of idle operation and low route speed portion of the design operating profile.

15.11.2 Any accessory may be driven hydraulically. Hydraulic system service tasks shall be minimized and scheduled no more frequently than those of other major coach's systems. All elements of the hydraulic system shall be easily accessible for service or unit replacement. The hydraulic system shall have a full flow spin-on filter with restriction indicator.

15.11.3 The system is to utilize Sauer Danfoss, or approved equal, hydraulic power-assisted steering and hydraulically driven cooling fan systems driven by a dual tandem pump installation on the engine with a single common reservoir with split compartments. Total system capacity of 3.5 gallons.

15.12 Oil and Hydraulic Lines:

15.13 Oil and hydraulic lines shall be compatible with the substances they carry. The lines shall be designed and intended for use in the environment in which they are installed; i.e., high temperatures in engine compartment, road salts, oils, etc. Lines shall be capable of withstanding maximum system pressures. Lines within the engine compartment shall be composed of steel tubing where practicable except in locations where flexible lines are specifically required.

16.0 <u>TRANSMISSION</u>

16.1 Shall be an Allison B300R, or approved duty cycle equal, five (5) speed electronically controlled automatic transmission with a torque converter and hydraulic integral retarder approved for engine transmission combination.

16.2 The electronically controlled transmission shall have on-board diagnostic capabilities, able to monitor functions, store out-of-parameter conditions in memory, and communicate faults and vital conditions to service personnel. A diagnostic reader

device connector port, suitably protected against dirt and moisture, shall be provided. The on-board diagnostic system shall trigger a visual alarm to the operator when the electronic control unit detects a malfunction. The transmission shall contain built-in protection software to guard against severe damage.

16.3 The system will have the capacity to perform under heavy-duty transit start- and stop- duty cycles.

16.4 The transmission shall be equipped with two (2) separate oil filters. One (1) screen-type internal oil pan filter and one (1) spin-on quart cartridge externally mounted oil filter.

16.5 An electronic shift selector shall be provided. Provision shall be made to prevent starting the engine in any selection except neutral.

16.6 Retarder:

The transmission shall be equipped with a retarder designed to extend brake lining service life. The application of the retarder shall only occur with the application of the service brakes and shall cause a smooth blending of both retarder and service brake functions. Brake lights shall illuminate when the retarder is activated.

16.7 Backup Alarm:

The bidder shall provide a reverse direction alarm in compliance with SAE J994b with respect to acoustical performance for a Type B device emitting a nominal noise level admittance of eighty-nine (89) db with a supply of fourteen (14) volts. Conformity to the environmental test stipulated by the SAE shall not be required.

17.0 <u>COOLING SYSTEM</u>

17.1 The cooling systems shall be of sufficient size to maintain all engine and transmission fluids and engine intake air at safe, continuous operating temperatures and in accordance with engine and transmission manufacturers' cooling system requirements. The cooling system fan control should sense the temperature of the coolant fluid and, if temperatures above safe operating conditions are detected, the cooling fan should be engaged.

17.2 Radiator piping shall be stainless steel or copper tubing and, where practical, hoses shall be eliminated. Necessary hoses shall be a premium, silicone rubber-type that is impervious to all bus fluids. All hoses shall be as short as practicable. All hoses shall be secured with premium, stainless-steel clamps. The clamps shall maintain a constant tension at all times, expanding and contracting with the hose in response to temperature changes and aging of the hose material.

17.3 Engine Cooling:

17.3.1 A water-based, pressure-type, cooling system that does not permit boiling or coolant loss during the operations described above shall cool the engine. The engine thermostat shall be easily accessible for replacement. Valves

shall permit complete shutoff of lines for the heating and defroster units, and water booster pump.

17.3.2 A sight glass shall be provided on the exterior of the vehicle to enable water level to be checked. The expansion tank shall be equipped with a low coolant probe that will illuminate a dash light and set off an audible alarm when coolant level drops below probe.

17.3.3 The radiator shall provide a minimum 539-square-inch frontal area, ten (10) fins per inch. A side-by-side (not stacked) radiator and charge air cooler shall be installed facing the street side of the vehicle.

17.3.4 The radiator and charge air cooler shall be designed to withstand thermal fatigue and vibration associated with the installed configuration.

17.3.5 The cooling fan shall be thermostatically controlled, allowing the engine to reach operating temperature quickly. The thermostatically controlled fan shall not be driven when the coolant temperature falls below the minimum level recommended by the engine manufacturer. The radiator fan shall be thermostatically controlled hydraulic driven twenty-seven (27) inches minimum diameter.

17.4 Charge Air Cooling:

The charge air-cooling system shall provide maximum air intake temperature reduction with minimal pressure loss. The charge air cooler shall provide a minimum 289-square-inch frontal area. Air ducting and fittings shall be protected against heat sources and shall be configured to minimize restrictions and maintain sealing integrity.

17.5 Transmission Cooling:

The transmission shall be cooled by a separate heat exchanger, sized to maintain operating fluid within the transmission, and the manufacturer's recommended parameters of flow, pressure, and temperature.

18.0 MOUNTING

The power plant shall be mounted in a compartment in the rear of the bus. Power plant mounting shall be mechanically isolated to minimize transfer of vibration to the body structure. Mounts shall control movement of the power plant so as not to affect performance of belt-driven accessories or cause strain in piping and wiring connections to the power plant.

19.0 FUEL SYSTEM

19.1 Equip with a curbside-mounted ninety (90) gallon, minimum-capacity, steel-constructed fuel tank. Shall be equipped with internal baffles to prevent surging. The base fill rate shall be thirty (30) GPM.

19.2 The fuel-water separator shall be Raycor or equal.

19.3 The tank shall be provided with an external hex-head drain plug. The fuel pickup tubes shall ensure full-power operation on a six (6) percent grade for up to fifteen (15) minutes with no more than twenty-five (25) gallons of fuel over the useable amount in the tank. The tank shall be appropriately labeled according to the Federal Motor Carrier Safety Regulations.

19.4 The fuel door is to be spring loaded.

19.5 The capacity, date of manufacture, manufacturer name, location of manufacture, and certification of compliance to the Federal Motor Carrier Safety Regulations shall be permanently marked on the fuel tank. The markings shall be readily visible and shall not be covered with an undercoating material.

19.6 Fuel lines shall be securely mounted, braced, and supported as designed by the bus manufacturer to minimize vibration and shall be protected against damage, corrosion, or breakage due to strain or wear.

19.7 Fuel lines from the fuel tanks to the engine shall meet the engine manufacturer's requirements, supported by polyethylene bushings as required to protect components and maintain tubing integrity.

20.0 EXHAUST SYSTEM

Exhaust gases shall be discharged from the roadside rear corner of the roof through a vertically mounted exhaust stack. The entire exhaust system shall be adequately shielded to prevent heat damage to any bus component. The exhaust outlet shall be designed to minimize rain or snow from entering into the exhaust pipe. The exhaust piping shall be constructed of aluminized or stainless steel. A Nelson or approved equal aluminized silencer exhaust muffler shall be provided.

21.0 AIR COMPRESSOR/AIR SYSTEM

21.1 The bus shall have an air system to operate all accessories, brakes, and suspension systems with reserve capacity. Provision shall be made to apply shop air to the bus air systems, one (1) located at the front of vehicle behind the bumper and one (1) located in the rear near the air dryer, using a standard tire inflation-type valve. Air for the compressor shall be filtered through the main engine air cleaner system. The air system shall be protected by a pressure relief valve set at 150 psi and shall be equipped with check-valve and pressure-protection valves to ensure partial operation in case of line failures.

21.2 Air Compressor*:*

Shall be a Wabco, or approved equal, having a minimum rated capacity of 15.2 cubic feet per minute (cfm). It shall be engine mounted. It shall be gear driven and water cooled. It shall be flange mounted to the engine and lubricated by the engine

lubrication system. It shall be capable of charging the standard system from forty (40) psi to full charge within four (4) minutes while not exceeding fast idle.

21.3 Air Piping:

21.3.1 All lines, except flexible lines, will conform to SAE J1149 or SAE J844.

21.3.2 The lines shall be supported to prevent movement and vibration. Airline fittings shall be "push to connect" type fittings wherever possible. Airlines shall be seamless color-coded air-pressure synthetic tubing with standard brass fittings. Air lines shall be run in protected areas. They shall be supported by approved tubing clips and shall be protected by rubber grommets at all points where they pass through the underframe or body frame members. The discharge line from the compressor to the first tank shall be Teflon lined and covered with a stainless-steel braided jacket.

21.3.3 The air dryer shall be, Bendix A1-DS, or approved equal, with heater element, and will be installed to prevent accumulation of moisture and oil in the air system. The air dryer shall incorporate a built-in safety pressure valve and air governor.

21.4 Air Tanks:

21.4.1 Air reservoirs will be installed according to FMVSS 121.

21.4.2 There shall be four (4) tanks with a total combined volume of 5,850 cubic inches, minimum, as indicated below. Shall be equipped with remotely operated manual drain valves.

- Primary Reservoir 1,400 Cu. In.
- Secondary Reservoir 1,400 Cu. In.
- Accessory Reservoir 2,600 Cu. In.
- Other Reservoir Type 450 Cu. In.

22.0 BRAKE SYSTEM

22.1 Air brakes shall be Meritor, or approved equal, air-actuated disc brakes (no drum brakes will be accepted) with automatic adjustment at all four (4) wheel position. The front and rear brake calipers shall be interchangeable. Brakes shall be self adjusting, when applied, shall be free of objectionable noise or squeal.

22.2 The braking system shall be controlled and actuated by a compressed-air system using twenty (20) inch front and twenty-four (24) inch rear combination brake chambers to actuate the brake calipers. The brake rotors shall have a maximum diameter of fifteen (15) inches. The system shall meet the vehicle braking requirements outlined in FMVSS 121. The microprocessor for the antilock braking system (ABS) system shall be in a protected but accessible location to allow for ease of service.

22.3 Actuation of the ABS shall override the operation of the retarder.

22.4 Nonasbestos brake pads shall be provided.

22.5 The parking brakes shall be spring activated, air released, and controlled by a valve that exhausts compressed air to apply the brakes. The parking brake may be manually activated when the air pressure is at the operating level per FMVSS 121. The parking brake will automatically activate when air pressure drops below forty (40) psi nominal.

23.0 CONSTRUCTION

23.1 Body:

23.1.1 The bus shall have a clean, smooth, simple design. The exterior body features, including grilles and louvers, shall be shaped to facilitate cleaning by automatic bus washers without snagging washer brushes. Water and dirt shall not be retained in or on any body feature to freeze or bleed out onto the bus after leaving the washer. The body and windows shall be sealed to prevent leaking of air, dust, or water under normal operating conditions and during cleaning in automatic bus washers for the service life of the bus.

23.1.2 Exterior panels shall be sufficiently stiff to minimize vibration, drumming, or flexing while the bus is in service. When panels are lapped, the upper and forward panels shall act as a watershed. The windows, hatches, and doors shall be sealed.

23.2 Crash Worthiness:

23.2.1 The bus body and roof structure shall withstand a static load equal to 150 percent of the curb weight evenly distributed on the roof with no more than six (6) inch reduction in any interior dimension. Windows shall remain in place and shall not open under such a load.

23.2.2 The bus shall withstand a twenty-five (25) mph impact by a 4,000-pound automobile at any point, excluding doorways, along either side of the bus with no permanent structural deformation at seated passenger hip height. This impact shall not result in sharp edges or protrusions in the bus interior.

23.2.3 Exterior panels below thirty-five (35) inches from ground level shall withstand a static load of 2,000 pounds applied perpendicular to the bus by a pad no larger than five (5) inches square. This load shall not result in deformation that prevents installation of new exterior panels to restore the original appearance of the bus.

23.3 Materials:

The body materials shall be selected and the body fabricated to reduce maintenance, extend durability, and provide consistency of appearance throughout the service life of the bus. Detailing shall be kept simple. Add-on devices and trim, where necessary, shall be minimized and integrated into the basic design.

23.4 Corrosion:

23.4.1 The bus flooring, sides, roof, understructure, and axle suspension components shall be designed to resist corrosion or deterioration from atmospheric conditions and road salts. It shall maintain structural integrity and nearly maintain original appearance throughout its service life, provided that it is maintained by the procuring agency in accordance with the procedures specified in the contractor's service manual. All materials that are not inherently corrosion resistant shall be protected with corrosion-resistant coatings. All joints and connections of dissimilar metals shall be corrosion-resistant and shall be protected from galvanic corrosion. With the exception of periodically inspecting the visible coatings applied to prevent corrosion and reapplying these coatings in limited spots, the contractor shall not require the complete reapplication of corrosion compounds over the life of the bus.

Steel tubing, channel, or plate used in the construction of the chassis shall be shot blasted and primed with a urethane zinc primer and coated with PPG Corashield, or approved equal, coating. The inside of the tubular members shall be coated with an anticorrosion (NWACA120) modified wax in white spirits. This anticorrosion coating shall also contain organic corrosion inhibitors, thixotropic-enhancing agents, and a ultraviolet tracer. The holes through which this material is injected shall be sealed with threaded fasteners. Between dissimilar metals, corrosion shall be controlled with a special joining compound. This anticorrosive jointing compound, Duralac or approved equal, shall be made expressly to protect against corrosion with dissimilar metals.

23.5 Insulation:

The insulation used between the inner and outer panels shall be a closed cell, lightweight, resilient, foamed plastic composed of hydrogen and carbon atoms that minimizes entry and/or retention of moisture. The insulation properties shall be unimpaired during the service life of the bus. The engine compartment shall be insulated with an aluminized glass cloth quilted/laminated fiberglass blanket that does not absorb or retain oils or water and is designed to prevent casual damage that may occur during maintenance operations. The body shall be insulated against operating noises and vibrations.

23.6 Repair and Replacement of Exterior Panels:

Lower exterior panels within twenty-six (26) inches above ground level shall be removable for ease of repair or replacement. The panels shall be no greater than 6.5 feet in length and shall be easily replaced in approximately ten (10) minutes.

23.7 Rain Gutters:

Rain gutters shall be provided to prevent water flowing from the roof onto the passenger doors, operator's side window, and passenger windows. When the bus is decelerated, the gutters shall not drain onto the windshield, operator's side window, or into the door boarding area. Cross sections of the gutters shall be adequate for proper operation.

23.8 Resonance and Vibration:

All structure, body, and panel-bending mode frequencies, including vertical, lateral, and torsional modes, shall be sufficiently removed from all primary excitation frequencies to minimize audible, visible, or sensible resonant vibrations during normal service.

23.9 Distortion:

23.9.1 The bus, loaded to GVWR and under static conditions, shall not exhibit deflection or deformation that impairs the operation of the steering mechanism, doors, windows, passenger escape mechanisms, and service doors. Static conditions shall include the vehicle at rest with any one (1) wheel or dual set of wheels on a six (6) inch curb or in a six (6) inch deep hole.

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23.9.2 All structure, body, and panel-bending mode frequencies, including vertical, lateral, and torsional modes, shall be sufficient to minimize audible, visible, or sensible resonant vibrations during normal service.

23.10 Interior Finish:

23.10.1 All materials shall meet FMVSS 302 and for FTA-funded coaches, interior panels shall meet Docket 90. Materials shall be selected based on maintenance, durability, appearance, and safety. Trim pieces shall be kept simple and to a minimum. The interior materials shall be cleanable with normal commercial-grade cleaning agents. The wall and bulkhead surfaces shall be designed to allow particles to fall easily to the floor. Materials shall be strong enough to resist everyday abuse and vandalism; they shall be resistant to scratches and markings. Interior trim shall be secured to avoid resonant vibrations under normal operational conditions.

23.10.2 The entire front end of the bus shall be constructed to minimize debris accumulation behind the dash and to prevent the operator's feet from kicking or fouling wiring and other equipment. The front end shall be free of protrusions that are hazardous to passengers standing or walking in the front

of the bus during rapid decelerations. Paneling across the front of the bus and any trim around the operator's compartment shall be formed metal, plastic, or composite material. Plastic dash panels shall be reinforced, as necessary, and replaceable. The operator's area shall be kept simple and glare free. The design shall facilitate easy reach of functions and shall be ergonomically pleasing. The driver shall control lighting forward of the standee line. Surfaces forward of the standee line shall be of a matte finish. All colored, painted, and plated parts forward of the operator's barrier shall be finished with a dull matte surface to reduce glare. Color should be coordinated to compliment the entire interior of the bus.

23.10.3 The rear bulkhead paneling shall be contoured to fit the ceiling, sidewalls, and seat backs so that any litter, such as a cigarette package or newspaper, will tend to fall to the floor or seating surface when the bus is on a level surface. Any air vents in this area shall be louvered to reduce airflow noise and to reduce the probability of trash or liter being thrown or drawn through the grille. If it is necessary to remove the panel to service components located on the rear bulkhead, the panel shall be hinged or shall be able to be removed and replaced by a 3M™ mechanic in five (5) minutes. Grilles, where access to or adjustment of equipment is required, shall be heavy duty and designed to minimize damage. The rear bulkhead shall be a pleasing design using a composite material for the bus. The design shall be kept simple and maintainable.

23.10.4 Interior side trims, panels, and operator's barrier shall be anodized aluminum, plastic, or melamine-type material. Panels shall be easily replaceable and tamper-resistant. They shall be reinforced, as necessary, to resist vandalism and other rigors of transit bus service. Individual trim panels and parts shall be interchangeable to the extent practicable. Untrimmed areas shall be painted and finished. Color should be coordinated to compliment the entire interior of the bus.

23.10.5 Ceiling panels shall be anodized aluminum, melamine-type material. Headlining shall be supported to prevent buckling, drumming, or flexing and shall be secured without loose edges. Headlining materials shall be treated or insulated to prevent marks due to condensation where panels are in contact with metal members. Moldings and trim strips, as required to make the edges tamperproof, shall be aluminum or plastic, colored to complement the ceiling material. Headlining panels covering operational equipment that is mounted above the ceiling shall be on hinges for ease of service but retained to prevent inadvertent opening.

23.10.6 Interior panels shall be attached so that there are no exposed unfinished or rough edges or rough surfaces. Panels and fasteners shall not be easily removable by passengers. Interior trim fasteners, where required, shall be rivets or cross-recessed head screws.

23.11 Interior Access Panels:

23.11.1 Access for maintenance and replacement of equipment shall be provided by panels and doors that appear to be an integral part of the interior. Access doors shall be hinged with gas props or over-center springs, where practical, to hold the doors out of the mechanic's way. Panel fasteners shall be standardized so that only one (1) tool is required to service all special fasteners within the bus.

23.11.2 Access doors for the door actuator compartments shall be secured and shall prevent entry of mechanism lubricant into the bus interior. The locks shall be standardized so that only one (1) tool is required to open access doors on the bus. All fasteners that retain access panels shall be captive in the cover.

23.11.3 Access openings in the floor shall be sealed to prevent entry of fumes and water into the bus interior. Flooring material shall be flush with the floor and shall be edge-bound with aluminum to prevent the edges from coming loose. Access openings shall be asymmetrical so that reinstalled flooring shall be properly aligned. Fasteners shall tighten flush with the floor.

23.11.4 Any access to engine compartment from the passenger compartment shall be water and fume proof, and shall be properly fitted and heavily insulated to prevent engine heat and noise transfer into driver area or passenger compartment. In addition, the engine firewall shall be equipped with a heat and noise-reduction insulation package.

23.12 Fender Trim and Mud Flaps:

23.12.1 Features to minimize water spray from the bus in wet conditions shall be included in wheel housing design. Fenders shall be easily replaceable. They shall be flexible and extend minimally beyond the body width. Wheels and tires shall be removable with the fenders in place.

23.12.2 Splash aprons, composed of ¼-inch minimum composition or rubberized fabric, shall be installed behind of wheels as needed to reduce road splash and protect under floor components. The splash aprons shall extend downward to within four (4) inches of the road surface at static conditions. Apron widths shall be no less than tire widths. Splash aprons shall be bolted to the bus understructure. Splash aprons and their attachments shall be inherently weaker than the structure to which they are attached. The flexible portions of the splash aprons are not included in the road-clearance measurements.

23.13 Bumpers:

23.13.1 Bumpers shall provide impact protection for the front and rear of the bus with the top of the bumper being twenty-six (26) ± two (2) inches above the ground. The bumper height shall be such that when one (1) bus is parked behind another, a portion of the bumper faces will contact each other.

23.13.2 Front bumper:

The front bumper shall be an energy-absorbing bumper manufactured by Transpec or approved equal designed to minimize damage as a result of a five (5) mph impact of the bus at curb weight with a fixed, flat barrier perpendicular to the bus' longitudinal centerline. The bumper shall return to its pre-impact shape within ten (10) minutes of the impact. The bumper shall protect the bus from damage as a result of 6.5 mph impacts at any point by the Common Carriage with Contoured Impact Surface defined in Figure 2 of FMVSS 301 loaded to 4,000 pounds parallel to the longitudinal centerline of the bus and 5.5-mph impacts into the corners at a 30° angle to the longitudinal centerline of the bus. The energy absorption system of the bumper shall be independent of every power system of the bus and shall not require service or maintenance in normal operation during the service life of the bus. The bumper shall increase the overall bus length by a maximum of 4.0 ± one (1) inch.

23.13.3 Rear bumper:

The rear bumper shall be an energy-absorbing bumper manufactured by Transpec or approved equal designed to minimize damage as a result of a two (2) mph impact with a fixed, flat barrier perpendicular to the longitudinal centerline of the bus. The bumper shall return to its pre-impact shape within ten (10) minutes of the impact. When using a yard tug with a smooth, flat-plate bumper two (2) feet wide contacting the horizontal centerline of the rear bumper, the bumper shall provide protection at speeds up to five (5) mph, over pavement discontinuities up to one (1) inch high, and at accelerations up to two (2) mph/second. The rear bumper shall protect the bus, when impacted anywhere along its width by the Common Carriage with Contoured Impact Surface defined in Figure 2 of FMVSS 301 loaded to 4,000 pounds, at four (4) mph parallel to, or up to a 30° angle to the longitudinal centerline of the bus. The rear bumper shall be an anti-ride design, shaped to preclude unauthorized riders standing on the bumper. The bumper shall be independent of all power systems of the bus and shall not require service or maintenance in normal operation during the service life of the bus. The bumper shall increase the overall bus length by a maximum of 4.05 ± one (1) inch.

23.14 Bumper Material:

Bumper material shall be corrosion-resistant skin with a Pultruded Vinylester backup structure that withstands impacts of the specified loads without sustaining damage. Visible surfaces shall be black in color. These bumper qualities shall be sustained throughout the service life of the bus.

24.0 FLOOR

24.1.1 The floor shall be essentially a continuous flat plane, except at the wheel housings and platforms. The floor height shall be designed to eliminate steps and facilitate boarding and de-boarding of passengers.

24.1.2 The floor design shall consist of two (2) levels (bi-level construction). Aft of the rear door extending to the rear settee riser, the floor height shall be raised. The floor in the upper level shall not be sloped.

24.1.3 Where the floor meets the walls of the bus as well as other vertical surfaces, such as platform risers, the surface edges shall be blended with a circular section of radius of not less than one (1) inch. Similarly, the flooring shall prevent debris accumulation between the floor and wheel housings. The vehicle floor in the area of the entrance and exit doors shall have a lateral slope of up to 2° maximum to allow for drainage.

24.1.4 Strength:

The floor substructure shall be integral with the basic structure of the chassis with the subfloor mounted on the structure securely to prevent chafing or horizontal movement and shall be designed to last the life of the bus. Flooring shall be screwed down and serviceable from one (1) side only. Staples or driven pins are not acceptable. Any gaps and voids shall be filled and sanded to provide a smooth surface before floor covering. The use of adhesives to secure the floor to the structure shall be allowed only in combination with the use of bolt or screw fasteners, and its effectiveness shall last throughout the life of the coach. Tapping plates shall be secured and protected from corrosion for the service life of the bus. The lower structure shall be designed to maximize the support of the passenger loads on the floor deck.

24.1.5 Construction:

24.1.5.1 The floor shall consist of the subfloor and the floor covering. The floor, as assembled, including the sealer, attachments, and covering shall be waterproof, non-hygroscopic, and resistant to mold growth. The subfloor shall be resistant to the effects of moisture including decay (dry rot). It shall be impervious to wood-destroying insects such as termites.

24.1.5.2 The floor covering shall be Altro Transflor manufactured or approved equal, non-skid walking surface that remains effective in all weather conditions and complies with all ADA requirements. The floor covering, as well as transitions of flooring material to the main floor and to the entrance and exit area, shall be smooth and present no tripping hazards. The standee line shall be at least two (2) inches wide and shall extend across the bus aisle. This line shall be the same color as the outboard edge of the entrance/exit areas. The purchaser will make a selection from the bidder's standard offering.

24.1.5.3 The subfloor shall be fabricated from plywood that is a minimum .50 inches thick with high density overlay (HDO) film with a thermosetting exterior-type resin-impregnated fiber surface bonded to both sides under heat and pressure. The HDO film shall provide a moisture barrier to the bottom of the plywood. It shall be certified to the Engineered Wood Association (formerly the American Plywood Association [APA]) PS-1, Stru 1, exterior plywood standards. All edges shall be sealed with CBS-156-60-1 high solids edge sealant. It shall be designed to support all the design loads. Any preservative treatments shall utilize no Environmental Protection Agency (EPA)-listed hazardous chemicals. The concentration of preservative chemical shall be equal to or greater than required for an above ground-level application. Treated plywood shall be certified for preservative penetration and retention by a third party inspection agency. Pressure-preservative treated plywood shall have moisture content at or below fifteen (15) percent.

25.0 PLATFORMS

Trim shall be provided along top edges of platforms as well as integral nosing where appropriate. Except where otherwise indicated, covering of platform surfaces and risers shall be of the same material as specified for floor covering. Other raised areas providing space for under-floor installation of components, shall be limited. Such raised areas shall be constructed in accordance to these specifications.

25.1.1 Operator's platform:

The operator's platform shall be raised a maximum of 14.75 inches from the nominal floor height at the entrance door. Two (2) steps, with a maximum riser height of 9.25 inches shall allow ease of entry for the operator. The raised height of the platform shall provide the operator an excellent view forward as well as through the entrance door glazing and the driver's street-side window.

25.1.2 Intermediate platform:

An intermediate platform shall be provided along the center aisle of the bus to facilitate passenger traffic between the upper and lower floor levels. This platform shall be a maximum three (3) step design with the lower step on the lower level and the upper steps cut into the rear platform. The steps shall be a minimum of 24.50 inches wide with risers a maximum of 7.5 inches high each. The depth of the steps shall be a minimum of is 11.25 inches. The steps shall be covered with the same material as the floor and have a two (2) inch yellow nosing.

26.0 WHEELHOUSING:

Sufficient clearance and air circulation shall be provided around the tires, wheels, and brakes to prevent overheating when the bus is operating on the design-operating profile.

26.1.1 Wheel housings shall be constructed of corrosion-resistant, fire-resistant composite material. Wheel housings, as installed and trimmed, shall withstand impacts of a two (2) inch steel ball with at least 200 foot-pounds of energy without penetration.

26.1.2 Wheel housings shall be adequately reinforced where seat pedestals are installed. Wheel housings shall have sufficient sound-insulation properties to minimize tire and road noise.

26.1.3 Design and construction of front wheel housings shall allow for the installation of a radio/electronic equipment storage compartment or its use as a luggage rack on the interior top surface.

26.1.4 The exterior finish of the front wheel housings shall be color coordinated to complement interior finishes of the bus. The wheel housings shall be designed to minimally intrude into the passenger areas of the bus.

27.0 PEDESTRIAN SAFETY

Exterior protrusions greater than one-half (½) inch and within eighty (80) inches of the ground shall have a radius no less than the amount of the protrusion. The exterior rearview mirrors and required lights and reflectors are exempt from the protrusion requirement. Grilles, doors, bumpers, and other features on the sides and rear of the bus shall be designed to minimize the ability of unauthorized riders to secure toeholds or handholds.

28.0 DRIVELINE ASSEMBLY

The rear axle shall be an Arvin-Meritor RS-21 or approved equal single reduction, rear-drive axle with hub piloted wheels providing a GAWR of 21,000 pounds. Rear axle ratio shall be 5:13. The carrier housing shall be separable with a bolted ring gear and shall be equipped with magnetic, internal, hex-head, lubricant drain plug. Carrier and hubs shall be internally oil lubricated with multipurpose gear oil. The drive shaft shall be protected from striking the floor of the bus or the ground in the event of a tube or universal joint failure.

29.0 SUSPENSION

29.1 The independent front suspension (IFS) shall incorporate parallel wishbone arms and rolling diaphragm air springs. Ride height shall be maintained by the use of two (2) leveling valves. The IFS shall be rated at 10,000 pounds minimum. Adjustment points shall be minimized. Necessary adjustments shall be easily accomplished without removing or disconnecting the components. A pressure-regulating valve shall protect against air loss from leaks in the suspension system.

29.2 Rear suspension:

The rear suspension design shall be trailing-arm, air springs over taper-leaf configuration equipped with a minimum of two (2) air springs. Adjustment points shall be minimized. Necessary adjustments shall be easily accomplished without removing or disconnecting the components. A pressure-regulating valve shall protect against air loss from leaks in the suspension system.

29.3 Travel:

The suspensions shall permit a wheel travel of three (3) inch jounce and three (3) inch rebound. Molded rubber bumpers shall be provided at the limit of jounce travel. Rebound travel shall be limited hydraulically within the shock absorbers. Front and rear suspensions shall incorporate appropriate devices for automatic height control.

29.4 Damping:

29.4.1 The air-suspension system shall employ two (2) air bellows at the front independent suspension and two (2) air bellows at the rear axle. Horizontal movement of the rear axle shall be prevented by the use of transverse track rods.

29.4.2 Vertical damping of the suspension system shall be accomplished by Koni or an approved equal hydraulic shock absorbers mounted to the suspension arms or axles and attached to an appropriate location on the chassis.

29.5 Kneeling system:

29.5.1 A kneeling system shall lower the entrance of the bus to a maximum height of ten (10) inches during loading or unloading operations. The kneeling system shall not allow the bus to kneel until the parking brake has been applied. The system will be driver controlled by use of two (2) push-button-type switches that are both labeled and color-coded for ease of recognition. Pressing the raise switch will allow the system to go to normal height without the driver having to hold the switch. Release of the parking brake will also automatically raise the suspension to normal height.

29.5.2 Brake and throttle interlock shall prevent movement when the bus is kneeled. The kneel control shall be disabled when the bus is in motion. The bus shall kneel at an approximate rate of one and one-quarter (1.25) inches per second at essentially a constant rate. After kneeling, the bus shall rise within approximately two (2) seconds to a height permitting the bus to resume service and shall rise to the correct operating height within seven (7) seconds regardless of load up to the GVWR.

29.5.3 A dash indicator, visible to the driver, shall be illuminated when the bus is in a kneeled position. Also, an audible alarm will sound simultaneously with the operation of the kneeler to alert passengers. An amber warning light,

mounted near the curb side of the front door, shall be provided that will flash when the kneeling feature is activated.

30.0 TIRES AND WHEELS

30.1 The bus shall be equipped with polished-aluminum wheels, single-front and dual-rear, and of the same offset for interchangeability. Wheel size shall be 19.5 X 6.75 inches.

30.2 Tires shall be provided by the manufacturer and shall be Michelin or approved equal, 265/70R X 19.5" low-profile, tubeless, radial tires. All tire and wheel assemblies shall be dynamically balanced.

30.3 One (1) full-size spare tire and wheel per vehicle shall be provided and shall be interchangeable with the mounted wheels/tires.

31.0 ELECTRICAL/CHARGING SYSTEM

31.1 General:

31.1.1 The bus electrical control and wiring system shall be an Integrated/Operating Controls (I/O) DINEX G2A, Multiplex System or approved equal of the most current model available. Versatility and future expansion of the system shall be provided for by expandable system architecture.

31.1.2 The system components shall be capable of performing reliable operation in an environment of between minus 40° C to plus 85° C while encountering mobile shock and vibrations. Each module shall be adequately shielded to prevent interference by electromagnetic interference and radio frequency interference.

31.1.3 The components of the multiplex system shall be of modular design, thereby providing for ease of replacement by field maintenance personnel. Each module shall be equipped with diagnostic light-emitting diodes (LEDs) that indicate input status, output status, and circuit integrity. These LEDs shall enable a rapid circuit diagnostic and verification of the load and wiring integrity. Each output of the module shall be capable of providing a current load of up to 7.5 amperes of continuous or twenty (20) amperes intermittent. Four (4) of the outputs shall be able to be tied together in pairs providing fifteen (15) amperes of continuous current. The internal control shall be a solid-state device, providing an extended-life service cycle. Non-self-resetting circuit breakers or fuses shall be provided to protect each individual circuit. A dedicated feedback point for each output shall be part of the system to provide capability of monitoring each isolated output load and fuse status via a personal digital assistant or personal computer. The multiplex power source shall be isolated to avoid any ground noise.

31.1.4 The multiplex network system shall provide the Intelligent Key™ feature. The program for operating the bus shall be contained in the Main Bus Controller (MBC). A single downloading point shall be located on the bus for

reprogramming. Modules with the Intelligent Key™ feature shall be interchangeable on the bus and backward compatible with I/O Controls DINEX modules that may be currently in use. Programmable time-delay functions and integrated-flasher capabilities shall be contained in the control module.

31.2 Power generation:

The alternator shall be an internally regulated Leece Neville twenty-four (24) volt, 200-amp alternator or approved equal. The alternator shall be capable of supporting the electrical load of the bus with all accessories operating.

31.3 Wiring and Terminals:

31.3.1 All power and ground wiring shall have double electrical insulation and shall conform to the specification requirements of the SAE Recommended Practice J1127, J1128, and J1292. Double insulation shall be maintained as close to the junction box, electrical compartment, or terminals as possible.

31.3.2 Wiring shall be grouped, and easily identified, numbered, and color-coded with the exception of twisted pairs. Wiring harnesses shall not contain wires of different voltage classes unless all wires within the harness are insulated for the highest voltage present in the harness. Kinking, grounding at multiple points, stretching, and exceeding minimum-bend radius shall be prevented.

31.3.3 Strain-relief fittings shall be used at points where wiring has the potential to be disturbed during normal maintenance. Grommets or other protective material shall be installed at points where wiring penetrates metal structures outside of electrical enclosures. Wiring supports shall be protective and nonconductive at areas of wire contact and shall not be damaged by heat, water, solvents, or chafing.

31.3.4 To the extent practicable, wiring shall not be located in environmentally exposed locations under the vehicle. Wiring and electrical equipment necessarily located under the vehicle shall be insulated from water, heat, corrosion, and mechanical damage. Where feasible, front-to-rear electrical harnesses shall be installed above the window line of the vehicle.

31.3.5 Wiring harnesses over five (5) feet long and containing at least five (5) wires shall include ten (10) percent (minimum one [1]) excess wires for spares. This does shall not apply to data links and/or communication cables. Wiring lengths shall allow end terminals to be replaced twice without pulling, stretching, or replacing the wire. Except for large wires such as battery cables, terminals shall be crimped, according to the connector manufacturer's recommendations for techniques and tools, to the wiring and are soldered only if the wire is not stiffened above the terminal and no flux residue remains on the terminal. Battery cable connectors shall be crimped and properly sealed against moisture.

31.3.6 Terminals shall be crimped, corrosion-resistant, and full-ring type or interlocking lugs with insulating ferrules as appropriate for the application. When using pressure-type, screw-terminal strips, stranded wire only shall be used. Insulation clearance shall ensure that wires have a minimum of "visible clearance" and a maximum of two (2) times the conductor's diameter or $^{1}/_{16}$ inch, whichever is less. When using shielded or coaxial cable, upon stripping of the insulation, the metallic braid shall be free from frayed strands that can penetrate the insulation of the inner wires.

31.3.7 Ultra-sonic and T-splices may be used with No. 7 American wire gauge or smaller wire. When a T-splice is used, it shall meet these additional requirements: include a mechanical clamp in addition to solder on the splice, the wire supports no mechanical load in the area of the splice, and the wire is supported to prevent flexing.

31.3.8 For wiring-harness connectors, pins shall be removable, crimp-contact type of the correct size, and rated for the wire being terminated. Supply-side terminations shall end in a socket or a pin. Unused pin-positions shall be sealed with sealing plugs. Cable connectors shall be placed to provide adequate space for ease of removal and disconnection. Electrical connectors subjected to environmental exposure outside the passenger compartment shall be corrosion-resistant and splash-proof.

31.3.9 The main wiring harness shall be continuous and concealed, where feasible, within the frame or body panels for protection from the elements. Harnesses and wiring shall be secured by clamps or nylon saddle-mounts to prevent chafing. Grommets of elastomeric material shall be provided at points where wiring penetrates the metal structure. The main wiring harness shall be continuous and concealed, where feasible, within the frame or body panels for protection from the elements. Harnesses and wiring shall be secured by clamps or nylon saddle-mounts to prevent chafing. Grommets of elastomeric material shall be provided at points where wiring penetrates the metal structure.

31.3.10 Redundant grounds shall be used for all electrical equipment, except where it can be demonstrated that redundant grounds are not feasible or practical. One (1) ground is used for the bus body and framing. Electrical wiring or equipment shall not be located in an environment that will reduce the performance or shorten the life of the wiring or component.

31.3.11 Body and chassis electrical relays shall be of the type that automatically reset. Manually resettable breakers shall be used in manufacturer-recommended circuits for easier trouble shooting of electrical problems.

31.4 Junction Boxes:

Relays, controllers, flashers, circuit breakers, and other electrical components shall be grouped according to voltage and mounted in accessible junction boxes. The boxes shall be sealed to prevent moisture from normal sources including engine compartment cleaning. The components and circuits in each box shall be identified

and their locations permanently recorded on a drawing glued to or printed on the inside of the box cover or door. The drawing shall be protected from oil, grease, fuel, and abrasion. The front junction box shall be completely serviceable from the vestibule. A rear start-and-run control box shall be mounted in an accessible location in the engine compartment.

31.5 Electrical components:

Electrical components including switches, relays, flashers, and circuit breakers shall be heavy-duty designs. These components shall be long lasting and commercially available. Sockets of plug-in components shall be polarized where required for proper function, and the components shall be positively retained. Any manually resettable circuit breakers critical to the operation of the bus shall be mounted in a location convenient to the driver and shall provide visible indication of open circuits. Electric motors shall be heavy-duty type. Electric motors shall be located for ease of replacement. Electronic circuit protection for the cranking motor shall be provided to prevent engaging of the engine if the engine is already running.

32.0 WINDOWS

32.1 A minimum of 8,000 square inches of window area including driver's and door windows shall be required on each side of the standard-configuration bus.

32.2 All windows shall meet State and Federal safety regulations.

32.3 The windshield shall be front-body contoured two (2) piece one-quarter (¼) inch thick, seventy (70) percent or greater light-transmission density, laminated, safety-float glass. The windshield shall permit an operator's field of view as referenced in the SAE Recommended Practice J1050. The vertically upward view shall be a minimum of 15° measured above the horizontal and excluding any shaded band. The vertically downward view shall permit detection of an object three and one-half (3½) feet high, no more than two (2) feet in front of the bus. The horizontal view shall be a minimum of 90° above the line of sight. Any binocular obscuration due to a center divider may be ignored when determining the 90°-requirement, provided that the divider does not exceed a 3°-angle in the operator's field of view. Windshield pillars shall not exceed 10° of binocular obscuration. The windshield shall be designed and installed to minimize external glare as well as reflections from inside the bus.

32.4 Windshields shall be glazed with two (2) piece black, ozone-treated, extruded lock-and-key rubber. The windshield shall be easily replaceable by removing zip-locks from the windshield-retaining moldings. A bonded-in-place windshield shall not be used. The windshield glazing material shall have a ¼-inch or six (6) mm nominal thickness, laminated safety glass conforming to the requirements of ANSI Z26.1, Test Grouping 1A, and the recommended practices defined in SAE J673. The glazing material shall have single-density tint. The upper portion of the windshield above the operator's field-of-view shall have a dark, shaded band with a minimum luminous transmittance of six (6) percent when tested in accordance to ASTM D-1003.

32.5 The driver's roadside window shall be black, extruded aluminum, full-height side slider design. The forward section shall slide only. The rear section shall be fixed. The window when installed shall not produce wind noise at highway speeds. The glazing shall be ¼-inch laminate and tinted according to ANSI Z26.1 and SAE J673.

32.6 Passenger-side windows shall be dark-tinted, transit style, fully sliding windows. A minimum of two (2) push-out windows per side is required. Windows shall be equipped with latches, which can be easily reached and operated by an adult passenger. The sash shall not slide open or closed upon brake application. All side windows shall be easily replaceable without disturbing the adjacent windows and shall be mounted so that flexing or vibration from engine operation or normal road excitation is not apparent. The windows shall be designed and constructed to enable a 3M™ mechanic to remove and replace two (2) windows in less than ten (10) minutes.

32.7 The body-side windows shall be heavy-duty type anodized. The windows shall fit flush or nearly flush, or shall be of the overlay-type design. The windows shall be ¼-inch laminated with options for various configurations of transom and slide. The glazing shall be replaceable without removing interior or exterior body components. The maximum solar-energy transmittance shall be thirty-seven (37) percent and luminous transmittance shall be no less than sixteen (16) percent. Windows for destination signs shall not be tinted.

32.8 Upper- and lower-door windows shall be provided with AS-2 glass.

33.0 VISORS

An adjustable roller-type sunscreen shall be provided over the operator's windshield and the operator's side window. The sunscreen shall be capable of being lowered to the midpoint of the operator's window. Once lowered, the screen shall remain in the lowered position until returned to the stowed position by the operator.

34.0 DESTINATION SIGNS

34.1 An automatic electronic destination sign system, as provided by Twin Vision, Incorporated, or approved equal shall be furnished on the front and on the right side near the front door. Display areas of destination signs shall be clearly visible in direct sunlight and/or at night. The sign-system shall provide optimum visibility of the message-display units for passengers and shall meet applicable ADA requirements. Destination signs shall be installed in such a manner as to facilitate easy access for replacement of the entire sign-assembly or components such as fluorescent lamps/ LEDs and electronic control modules from inside the bus. Lamps and associated parts shall be commercially available.

34.2 Destination messages, route designations, and public-relations messages shall be independently selectable via a single operator's control panel (OCP) which shall include a display monitor. The OCP display monitor's readout shall show the exact information displayed on the destination signs. The OCP shall be conveniently located for the bus operator and mounted in such a manner that will not pose any

safety hazard. The OCP shall utilize a durable weatherproof keypad with tactile feel for destination message control functions.

34.3 Initial programming shall be completed with the required read-out as provided by the Pasco County Public Transportation Division (PCPT) prior to final acceptance of the bus(es).

35.0 PASSENGER DOORS, FRONT AND REAR

35.1 Two (2) doorways shall be provided in the curbside of the bus for passenger ingress and egress. The front doorway shall be forward of the front wheels and located so that the operator will be able to collect or monitor the collection of fares. The rear doorway centerline shall be rearward of the point midway between the front-door centerline and the rearmost-seat back. Passenger doors and doorways shall comply with ADA requirements.

35.2 Front-entrance door and rear-side door shall be identical in design and function. Doors shall be inward glider-types. The doors shall not extend beyond the body's exterior sidewall more than three (3) inches when open or closed. Doors shall be aluminum framed with tempered-glass panels. Each door panel shall be controlled by its own pneumatic cylinder for quiet and efficient operation and activated electrically by driver control. Interior, emergency manual control shall be located in the interior header panel above the door. Doors shall be easily adjusted for full opening, full closing, door speed, and door cushioning.

35.3 Doors shall open or close completely in not more than 3.5 seconds from the time of control actuation. Doors shall be operated by push-button controls, conveniently located and operable in a horizontal plane by the operator's left hand. The operation of this control shall be easily performed by location and touch. The front door shall remain in the commanded-state position even if power is removed or lost. The operator shall control operation of the passenger doors.

35.4 An exterior control to open the front door shall be provided.

35.5 To preclude movement of the bus, an accelerator interlock shall lock the accelerator in the closed position and a brake interlock shall engage the service-brake system when the front- or rear-door control is activated. The braking effort shall be adjustable with hand tools. Rear doors shall not open until bus speed is below three (3) mph.

35.6 The front and rear doors shall each have a clear opening width no less than 34.25-inches. When open, the doors shall leave an opening no less than seventy-five (75) inches in height.

35.7 Structure of the doors, their attachments, inside- and outside-trim panels, and any mechanism exposed to the elements shall be corrosion resistant. Door panel construction shall be of corrosion-resistant metal or reinforced, nonmetallic composite. The doors, when fully opened, shall provide a firm support and shall not be damaged if used as an assist by passengers during ingress or egress. The front leaves of the passenger doors shall overlap the rear leaves.

35.8 The front-door panel glazing material shall have tempered safety glass. Glazing material in the rear doorway door panels shall be the same material, thickness, and color as the front doors.

35.9 Exterior projection of the doors shall be minimized and shall not exceed three (3) inches during the opening or closing cycles or when doors are fully opened. Projection inside the bus shall not exceed twenty-nine (29) inches. The closing edge of each door panel shall have no less than two (2) inches of soft weather stripping. The doors, when closed, shall be effectively sealed, and the hard surfaces of the doors shall be at least five (5) inches apart.

35.10 It shall be possible to open and close either passenger door when the bus loaded to GVWR is not knelt and parked with the tires touching an eight (8) inch-high curb on a street sloping toward the curb so that the street-side wheels are five (5) inches higher than the right-side wheels.

35.11 The closing door edge speed shall not exceed nineteen (19) inches per second. Power-close rear doors shall be equipped with a sensitive edge or other obstruction-sensing system such that if an obstruction is struck by a closing door edge, the doors will stop and/or reverse direction prior to imparting a ten (10) pound force on one (1) square inch of that obstruction. Whether or not the obstruction-sensing system is present or functional, it shall be possible to withdraw a 1½-inch-diameter cylinder from between the center edges of a closed and locked door with an outward force not greater than thirty-five (35) pounds.

35.12 Door actuators shall be adjustable so that the door opening and closing speeds can be independently adjustable. Actuators and the complex door mechanism shall be concealed from passengers but shall be easily accessible for servicing. The door actuators shall be rebuildable.

35.13 In the event of an emergency, it shall be possible to open the doors by utilizing the door-control buttons above both the entrance and exit doors. In addition, the entrance door shall have a means on the exterior to open the door. The exit door emergency controls shall not be operable above three (3) mph.

36.0 LIGHTS AND REFLECTORS

36.1 All exterior and interior lights shall comply with ADA requirements.

36.1.1 Lamps shall conform to FMVSS 108; Chapter 316, F.S.; Rule 14-90, F.A.C.; and SAE guidelines.

36.1.2 All exterior lights shall be twelve (12) volt, negative ground, LED lamps, designed to prevent entry and accumulation of moisture or dust, and each lamp shall be replaceable. Lights mounted on the engine-compartment doors shall be limited to license plate illumination lamps. Lamps, lenses, and fixtures shall be interchangeable to the extent practicable. Visible and audible warning shall inform following vehicles or pedestrians of reverse operation.

36.1.3 Lamps at the front and rear passenger doorways shall comply with ADA requirements and shall activate only when the doors open. These lamps shall illuminate the street surface to a level of no less than one (1) foot-candle for a distance of three (3) feet outward from the outboard edge of the door threshold. The lights shall be positioned below the lower daylight opening of the windows and shall be shielded to protect the passengers' eyes from glare.

36.1.4 Stop taillights shall be LED red combination lens approximately 4.25" X 5.25" in size and horizontally mounted two (2) per side. An additional red stop lamp consisting of letters that spell "STOP" (minimum four [4] inches) will be centered in the rear panel. An enhanced LED flashing stop-lamp system will be installed consisting of four (4) amber lights (6.0 inches minimum) centered appropriately in the rear, two (2) near the top of the cap and two (2) slightly more than half-way up the cap.

36.1.5 Backup four (4) inch round amber LED lights shall be horizontally mounted, one (1) per side.

36.1.6 Directional signals shall be in compliance with FMVSS 108 and Sub-section 316.234(2), F.S. Foot-controlled, directional switches shall be installed in a tapered steel left-hand foot box, one (1) each for the left and right directional lights.

36.1.7 Front directional lights shall be approximately 4" X 5", mounted horizontally one (1) on each side with LED amber lights.

36.1.8 Side turn signals shall be provided at the front and rear.

36.1.9 Side marker and Interstate Commerce Commission marker lights shall be roof mounted, five (5) each amber front, and seven (7) each red rear.

36.1.10 Shall include hazard-warning feature as required by FMVSS 108, independent of the ignition switch.

36.2 Interior Lights:

36.2.1 The interior lighting system shall provide a minimum fifteen (15) foot-candle illumination on a one (1) square foot plane at an angle of 45° from horizontal, centered thirty-three (33) inches above the floor and twenty-four (24) inches in front of the seat back at each seat position. Allowable average light-level for the rear bench-seats shall be seven (7) foot-candles. Floor surface in the aisles shall be a minimum of ten (10) foot-candles, vestibule area a minimum of four (4) foot-candles with the front doors open and a minimum of two (2) foot-candles with the front doors closed.

36.2.2 The light source shall be located to minimize windshield glare with distribution of the light focused primarily on the passengers' reading plane while casting sufficient light onto the advertising display. Fluorescent tubes shall be a

maximum six (6) foot length, single-pin, T-12 type (with exception granted for extinguishing or dimming fixtures as noted below).

36.2.3 Lens material shall be white polycarbonate. Lens shall be designed to effectively "mask" the fluorescent tube. Lens material shall not drip flaming onto seats if burned. Lenses shall be sealed to inhibit incursion of dust and insects yet are easily removable for service. If threaded fasteners are used, they must be held captive in the lens. Access panels shall be provided to allow servicing of components located behind light panels. The entire light fixture shall be hinged.

36.2.4 Individual ballast units shall be provided for each light fixture. Ballast shall have a fireproof housing, minimum operating frequency of above audible range, reverse-polarity protection, integrated circuit breaker/automatic thermal protection, and be rebuildable.

36.2.5 When in the RUN and NITE/RUN mode, the first light-module on each side of the coach shall automatically extinguish or dim when the front door is in the closed position and light when the door is opened. This shall be accomplished through use of ballast specifically designed to accomplish this function without diminished useful, fluorescent-tube life.

36.2.6 The light system shall be designed to form part or the entire air conditioning duct.

36.2.7 The instrument panel and switch panel shall be indirectly lighted to prevent casting glare on the windshield.

36.2.8 The operator shall have a map light and a vestibule light. The dash lights shall be controlled via a rheostat to minimize glare.

36.2.9 Interior lighting, located ahead of the standee line, shall be controlled by the operator. The operator's work area shall be designed to minimize glare to the extent possible. Objects within and adjacent to this area shall be matte gray in color wherever possible to reduce the reflection of light onto the windshield. The use of polished metal and bright-colored surfaces within and adjacent to the operator’s area shall be avoided. Such objects include dash panels, switches and controls, cowlings, windshield wipers and arms, barriers and modesty panels, fare stanchions, access panels and doors, fasteners, flooring, ventilation and heating ducting, window and door frames, and visors.

36.3 Service Area Lights:

Lights shall be provided in the engine compartment, where service may be required, to generally illuminate the area for night emergency repairs or adjustments. Lamp assemblies shall be provided in the engine compartment and shall be controlled automatically with the opening of the primary engine-access door or by a switch located near the rear start controls in the engine compartment.

37.0 INSTRUMENTS AND GAUGES

37.1 All switches and controls necessary for the operation of the bus shall be conveniently located in the operator's area and shall provide for ease of operation. Switches and controls shall be essentially within the hand-reach envelope. Controls shall be located so that boarding passengers may not easily tamper with control settings. Accelerator and brake pedals shall be designed for ankle motion. Foot surfaces of the pedals shall be faced with wear-resistant, nonskid, replaceable material. Controls for engine operation shall be closely grouped within the operator's compartment. These controls shall include separate four (4) position master switch and ignition switch. The door control, kneel control, and master switch shall be in the most convenient operator locations. They shall be identifiable by shape, touch, and/or permanent markings. Turn-signal controls, windshield wiper/washer controls, low/high-beam headlight control, and horn shall be mounted on a single stalk on the left side of the steering column. All panel-mounted switches and controls shall be marked with easily read identifiers and shall be replaceable, and the wiring at these controls shall be serviceable from the vestibule or the operator's seat. Switches, controls, and instruments shall be dust and water resistant.

37.2 The speedometer, air pressure gauges, water temperature gauge, fuel pressure indicator, and certain indicator lights shall be located on the front cowl immediately ahead of the steering wheel. The steering-wheel spokes or rim shall not obstruct the operator's vision of the instruments when the steering wheel is in the straight-ahead position. Illumination of the instruments shall be simultaneous with the marker lamps. Glare or reflection in the windshield, side window, or front-door windows from the instruments, indicators, or other controls shall be minimized. Instruments and indicators shall be easily readable. Indicator lights immediately in front of the operator are identified in the following table.

Visual Indicator	Audible Alarm	Condition
Hazard	None	Four (4) Way Flashers Activated
High Beam	None	Headlamp High-Beams Activated
Kneel	Buzzer	Suspension Kneeling System Activated
Left-Turn Signal	None	Left-Turn Signal Activated
Parking Brake	None	Parking Brake is Activated
Rear Door	None	Rear Passenger Door is not Closed and Locked
Right-Turn Signal	None	Right-Turn Signal Activated
Check Engine	None	An Engine Fault has Occurred
Wait to Start	None	Inlet Manifold is Heating
Low Fuel	None	Fuel Level is Low
Engine Stop	Buzzer	Priority Engine Fault Detected
Retarder Warning	None	Retarder is In Use
Ride-Height Warning	None	Vehicle is in Knelt Position and not at Correct Ride Height

Visual Indicator	Audible Alarm	Condition
Stop Request	Chime	Passenger Stop Request Has Been Activated
ABS	None	ABS System Malfunction
Alternator Fail	None	Loss of Alternator Output
Hot Engine	Buzzer	Excessive Engine Coolant Temperature
Low Air	Buzzer	Insufficient Air Pressure in Either Primary or Secondary

37.3 The instrument panel shall include an electronic speedometer indicating no more than eighty (80) mph. The speedometer shall be a rotating pointer type. The speedometer shall be equipped with an odometer with a capacity reading no less than 999,999 miles.

37.4 The instrument panel shall also include air-brake reservoir, pressure gauges. The instrument panel and wiring shall be easily accessible for service from the operator's seat or top of the panel. Wiring shall have sufficient length and be routed to permit service without stretching or chafing the wires.

38.0 ON-BOARD DIAGNOSTICS

The bus shall be equipped with an on-board diagnostic system that will indicate conditions that require immediate action by the operator to avoid an unsafe condition or prevent further damage to the bus. This diagnostic system shall have visual and audible indicators. All indicators shall have a method of momentarily testing the operation of the lamp.

39.0 WINDSHIELD WIPERS/WASHER

39.1 Two (2) speed, heavy-duty electric wipers shall be provided, one (1) each side with a single control.

39.2 Wiper arms shall be parallelogram-type bottom mounted. The fastener that secures the wiper arm to the drive mechanism shall be corrosion resistant. Wiper blades shall be approximately 27.5 inches each in length. Blades are to be self parking. Windshield-wiper motors and mechanisms shall be easily accessible for repairs or service from outside the bus and shall be removable as complete units. The wiper blade shall not lift from the windshield surface at highway speeds. Intermittent wiper system shall be variable speed control allowing timed intermittent windshield cleaning in light rain and/or fog.

39.3 The windshield-washer system shall deposit washing fluid on the windshield and, when used with the wipers, shall evenly wet the wiped area.

39.4 The washer shall be electric pump with a minimum two (2) gallon washer reservoir supplying nozzles located on the wiper-wet arms and shall be easily filled from an access panel outside the bus. All reservoir lines pumps and fittings shall be

corrosion resistant. The reservoir itself will be translucent so as to easily determine the fluid level.

40.0 SEATS, PASSENGER

40.1 The passenger-seating arrangement in the bus shall be such that seating capacity is maximized and in compliance to the following requirements. The procuring agency recognizes that ramp location, foot room, hip-to-knee room, doorway type and width, seat construction, floor-level type, seat-spacing requirements, etc., ultimately affect seating capacity and layout.

40.2 Passenger seats shall be Freedman Citi-Seats or approved equal.

40.3 All aisle seats shall have top grab rails. Grab rails must be padded and securely attached to a welded seat-frame structure. The grab rails must meet *White Book* test requirements.

40.4 The manufacturer shall include with his bid package a dimensional layout of the seating arrangement with two (2) wheelchair, forward-facing positions that the bidder proposes to supply. A choice of upholstery material and color will be provided with the bid.

41.0 SEAT, DRIVER

The driver's seat shall be USSC 9001 ALX air-operated seat or approved equal.

42.0 MIRRORS

42.1 Two (2) exterior rearview side-mounted B & R Manufacturing, corrosion-resistant mirrors or approved equal shall be provided, one (1) at the driver's left side and one (1) opposite on the right side. They shall have a minimum of sixty (60) square inches of reflective area. They shall be mounted out of the driver's normal driving line of vision to prevent "blind spots." The right-hand exterior mirror shall be mounted so that the lowermost point is eighty (80) inches above the ground. The operator shall be able to adjust both the driver and curbside mirrors remotely while seated in the driving position. The controls for remote positioning of the mirrors shall be a single switch per mirror located on the side console.

42.2 Mirrors shall be provided for the operator to observe passengers throughout the bus without leaving his seat and without shoulder movement. With a full standee-load, including standees in the vestibule, the operator shall be able to observe passengers in the front/entrance and rear/exit areas, anywhere in the aisle, and in the rear seats. Inside mirrors shall not be in the line of sight to the right outside mirror. Interior mirrors shall include a 4" X 16" rectangular mirror mounted to the windshield header.

42.3 All mirror mountings shall be sufficiently rigid to prevent viewing distortion due to vibration. The areas where mirror mountings are attached shall be reinforced to preclude cracking or rusting. Exterior mirror mounts shall permit moving out of position (swing-out style) to prevent mirror damage from automatic bus washers.

43.0 PASSENGER ASSISTS

43.1 Passenger assists shall be convenient in location, shape, and size.

43.2 Passenger assists shall be designed to minimize catching or snagging of clothes or personal items and shall be capable of passing the National Highway Transportation Safety Act Drawstring Test.

43.3 Any joints in the assist structure shall be underneath supporting brackets and securely clamped to prevent passengers from moving or twisting the assists. Passenger assists shall be designed to minimize glare in the operator's area to the extent possible. Assists shall withstand a force of 300 pounds applied over a twelve (12) inch linear dimension in any direction normal to the assist without permanent visible deformation. All passenger-assist components, including brackets, clamps, screw heads, and other fasteners used on the passenger assists, shall be designed to eliminate pinching, snagging, and cutting hazards, and be free from burrs or rough edges.

43.4 Front doors or the entry area shall be fitted with ADA-compliant assists. Assists shall be as far outward as practicable but shall be located no further inboard than six (6) inches from the outside edge of the entrance step and shall be easily grasped by a 5th percentile female boarding from street level. Door assists shall be functionally continuous with the horizontal front passenger assist, the vertical assist, and the assists on the wheel housing or on the front modesty panel.

43.5 Passenger assists in the form of full-grip vertical stanchions or handholds shall be provided for the safety of standees and for ingress/egress. Passenger assists shall be convenient in location, shape, and size for both the 95th percentile male and the 5th percentile female standee. Starting from the entrance door and moving anywhere in the bus and out the exit door, a vertical assist shall be provided either as the vertical portion of the seat-back assist or as a separate item so that a 5th percentile female passenger may easily move from one assist to another using one (1) hand and the other without losing support. Excluding those mounted on the seats and doors, the assists shall have a cross-sectional diameter between 1¼ and 1½ inches or shall provide an equivalent gripping surface with no corner radii less than ¼-inch. Fitting ells, tees, flanges, and bolts shall be stainless steel. Ceiling grab-rail support brackets shall be stainless steel or anodized cast aluminum. All passenger assists shall permit a full handgrip with no less than 1½ inches of knuckle clearance around the assist. An impact resulting in a one (1) foot intrusion shall not produce sharp edges, loose rails, or other potentially dangerous conditions associated with a lack of structural integrity of the assist. All areas of the passenger assists that are handled by passengers, including functional components used as passenger assists, shall be of anodized aluminum or stainless steel. Door-mounted passenger assists shall be of anodized aluminum, stainless-steel, or powder-coated metal. Connecting tees and angles may be powder-coated metal castings. The assists shall be located no farther inboard than six (6) inches from the outside edge of the rear doorway.

43.6 Except forward of the standee line and at the rear door, a continuous, full-grip, overhead assist shall be provided. This assist shall be convenient to standees anywhere in the bus and shall be located over the center of the aisle-seating position of

the transverse seats. The assist shall be no less than seventy (70) inches above the floor. Ceiling grab-rails shall terminate into vertical stanchions or turn up into the ceiling. No exposed ends will be accepted. Overhead assists simultaneously support 150 poings on an twelve (12) inch length. No more than five (5) percent of the full grip feature shall be lost due to assist supports.

43.7 Unless passenger seating is provided on top of the wheel housing, passenger assists shall be mounted around the exposed sides of the wheel housings which shall also be designed to prevent passengers from sitting on wheel housings. Such passenger assists shall also effectively retain items, such as bags and luggage, placed on top of the wheel housing.

43.8 Sturdy divider panels constructed of durable, unpainted, corrosion-resistant material complimenting the interior trim shall be provided at the rear of both step wells. Modesty panels may be installed at the sides of longitudinal seats when the required armrests are integral. These dividers shall be mounted on the sidewall and shall project toward the aisle no farther than passenger-knee projection in longitudinal seats or the aisle side of the transverse seats. Modesty panels shall extend no higher than the lower daylight-opening of the side windows and those forward of transverse seats shall extend downward to a level between 1½ inches and one (1) inch above the floor. Panels forward of longitudinal seats shall extend to below the level of the seat cushion. Dividers positioned at the doorways shall provide no less than a 2½-inch clearance between the modesty panel and the opened door to protect passengers from being pinched. The modesty panel and its mounting shall withstand a static force of 250 pounds applied to a four (4) inch by four (4) inch area in the center of the panel without permanent visible deformation. Front modesty panels shall be provided for each side of the coach.

43.9 A driver barrier shall be provided made of clear Plexiglass™. The barrier shall minimize glare and reflections in the windshield directly in front of the barrier from interior lighting during night operation. This barrier shall allow for the safe, sturdy mounting of a route-schedules holder and/or an informational display.

44.0 PASSENGER COMPARTMENT HVAC

44.1 The heating, ventilation, and air conditioning (HVAC) climate-control system shall be Thermo King LRT1 or approved equal roof-mounted fully ducted unit with an air conditioning system capacity of 95,000 Btu/hr. and a heating system capacity of 116,000 Btu/hr. equipped with an IntelligAIRE computerized control system.

44.2 The compressor shall be a Model X430 or approved equal utilizing Type R-134a refrigerant.

44.3 The cooling mode of the interior climate-control system shall introduce air into the bus at or near the ceiling height at a minimum rate of twenty-five (25) cfm per passenger based on the standard-configuration bus carrying a number of passengers equal to 150 percent of the seated load. Airflow shall be evenly distributed throughout the bus with air velocity not exceeding 100 feet per minute on any passenger. The ventilating mode shall provide air at a minimum flow-rate of twenty (20) cfm per passenger.

44.4 Airflow may be reduced to fifteen (15) cfm per passenger (150 percent of seated load) when operating in the heating mode. The fans shall not activate until the heating element has warmed sufficiently to ensure at least 70° F air-outlet temperature. The heating air-outlet temperature shall not exceed 120° F under any normal operating conditions.

45.0 OPERATOR'S AREA HVAC

45.1 The driver's area Bergstrom interior climate-control system shall deliver at least 100 cfm of air to the operator's area when operating in the ventilating and cooling modes. Adjustable nozzles shall permit variable distribution or shutdown of the airflow.

45.2 Airflow in the heating mode shall be reduced proportionally to the reduction of airflow into the passenger area. The windshield-defroster unit shall have the capability of diverting heated air to the operator's feet and legs. The defroster or interior climate-control system shall maintain visibility through the operator's side window.

46.0 HVAC CONTROLS AND TEMPERATURE UNIFORMITY

46.1 The air conditioning portion of the HVAC system shall be capable of reducing the passenger-compartment temperature from 110° to 90° F in less than twenty (20) minutes after engine start-up. Engine temperature shall remain within the normal operating range at the time of start-up of the cool-down test, and the engine speed shall be limited to the fast idle-speed of the engine. During the cool-down period, the refrigerant pressure shall not exceed safe high-side pressures, and the condenser discharge air temperature, measured six (6) inches from the surface of the coil, shall be less than 45° F above the condenser inlet air temperature. There shall be no passengers on board, and the doors and windows shall be closed.

46.2 The climate-control system shall be fully automatic and control the interior average temperature to within ±2° F of specified temperature-control set point. The climate-control system shall have the provision to allow the driver to adjust the temperature control set point at a minimum of between 68° and 72° F. From then on, all interior climate-control system requirements shall be attained automatically, unless re-adjusted by the driver.

46.3 The operator shall have full control over the defroster and operator's heater. The operator shall be able to adjust the temperature in his/her area through air distribution and fans. The interior climate-control system shall switch automatically to the ventilating mode if the refrigerant compressor or condenser fan fails.

47.0 AIR FLOW/FILTRATION

47.1 The cooling mode of the interior climate-control system shall introduce air into the bus at or near the ceiling height at a minimum rate of twenty-five (25) cfm per passenger based on the standard-configuration bus carrying a number of passengers equal to 150 percent of the seated load. This air shall be composed of no less than twenty (20) percent outside air. Airflow shall be evenly distributed

throughout the bus with air velocity not exceeding one hundred (100) feet per minute on any passenger. The ventilating mode shall provide outside air at a minimum flow rate of twenty (20) cfm per passenger.

47.2 Airflow may be reduced to fifteen (15) cfm per passenger (150 percent of seated load) when operating in the heating mode. Heated air introduced into the bus shall contain no less than twenty (20) percent outside air. The fans shall not activate until the heating element has warmed sufficiently to ensure at least 70° F air-outlet temperature. The heating air-outlet temperature shall not exceed 100° F under any normal operating conditions. Outside airflow may be cut off during initial warm-up provided no manual manipulation is required.

47.3 Air shall be filtered before discharge into the passenger compartment. The filter shall meet the ANSI/ASHRAE 52.1 requirement. All filters shall be easily accessible for replacement and or cleaning.

48.0 ROOF VENTS

One (1) Transpec or approved equal ventilator shall be provided in the roof of the bus approximately over the rear axle. The ventilator shall be easily opened and closed manually by a 50th percentile female. When open with the bus in motion, this ventilator shall provide fresh air inside the bus. The ventilator shall cover an opening area no less than 425 square inches and shall be capable of being positioned as a scoop with either the leading or trailing edge open no less than four (4) inches or with all four (4) edges raised simultaneously to a height of no less than 3½ inches. An escape hatch shall be incorporated into the roof ventilator. Roof ventilator(s) shall be sealed to prevent entry of water when closed.

49.0 EXTERIOR FINISH

49.1 All exterior surfaces shall be smooth and free of wrinkles and dents. Exterior painted surfaces shall be properly prepared as required by the paint system supplier prior to application of paint to ensure a proper bond between the basic surface and successive coats of original paint for the service life of the bus. Drilled holes and cutouts in exterior surfaces shall be made prior to cleaning, priming, and painting to prevent corrosion. The bus shall be completely painted prior to installation of exterior lights, mirrors, and other items which are applied to the exterior of the bus.

49.2 PPG FDGH single-stage polyurethane paint or approved equal shall be applied smoothly and evenly with the finished surface free of dirt and the following other imperfections:

49.2.1 Blisters or bubbles appearing in the topcoat film.

49.2.2 Chips, scratches, or gouges of the surface finish.

49.2.3 Cracks in the paint film.

49.2.4 Craters where paint failed to cover due to surface contamination.

49.2.5 Over spray.

49.2.6 Peeling.

49.2.7 Runs or sags from excessive flow and failure to adhere uniformly to the surface.

49.2.8 Chemical stains and water spots.

49.3 To the degree consistent with industry standards for commercial vehicle finishes, painted surfaces shall have gloss and orange peel shall be minimized. All exterior finished surfaces shall be impervious to diesel fuel, gasoline, and commercial cleaning agents. Finished surfaces shall resist damage by controlled applications of commonly used graffiti-removing chemicals. Colors and paint schemes shall be specified by procuring agency.

49.4 The paint scheme and/or high-quality reflective-vinyl colors, design, and lettering shall be prior approved by the PCPT staff and completed prior to delivery of the buses.

49.5 Signs/decals/appliqués shall be provided in compliance with the DOT and ADA requirements.

50.0 ACCESSIBILITY SYSTEM

50.1 General:

The design and construction of the bus shall be in accordance with all requirements defined in 49 C.F.R., Part 38, Subpart B: ADA Accessibility Specifications for Transportation Vehicles - Buses, Vans, and Systems. Space and body-structural provisions shall be provided at the front door of the bus to accommodate the wheelchair-loading system.

50.2 Loading System:

50.2.1 An automatically controlled, power-operated ramp system compliant to requirements defined in 49 C.F.R., Part 38, Subpart B, §38.23.c, shall provide ingress and egress quickly, safely, and comfortably both in forward and rearward directions for a passenger in a wheelchair from a level street or curb. The wheelchair-loading system shall be located at the front door.

50.2.2 When the system is not in use, the passageway shall appear normal. In the stored position of the ramp, no tripping hazards shall be presented and any resulting gaps shall be minimized. The controls shall be simple to operate with no complex phasing operations required, and the loading system operation shall be under the surveillance and complete control of the operator. The bus shall be prevented from moving during the loading or unloading cycle by a throttle and brake interlock system. The wheelchair-loading system shall not present a hazard nor inconvenience any passenger. The loading system shall be inhibited from retracting or folding when a

passenger is on the ramp/platform. A passenger departing or boarding via the ramp shall be able to easily obtain support by grasping the passenger assist located on the doors or other assists provided for this purpose. The platform shall be designed to protect the ramp from damage and persons on the sidewalk from injury during the extension/retraction or lowering/raising phases of operation. The loading platform shall be covered with a replaceable or renewable, nonskid material and shall be fitted with devices to prevent the wheelchair from rolling off the sides during loading or unloading. Deployment or storage of the ramp shall require no more than fifteen (15) seconds. A manual override system shall permit unloading a wheelchair and storing the device in the event of a primary power failure.

50.3 Wheelchair Accommodations:

50.3.1 The retractor wheelchair-securement system shall limit the movement of an occupied wheelchair to two (2) inches or less in any direction under normal vehicle operation.

50.3.2 Two (2) forward-facing locations, as close to the wheelchair-loading system as practical, shall provide parking space and a securement system compliant with ADA requirements for a passenger in a wheelchair.

50.3.3 The retractor wheelchair securement shall comply with the following requirements: SAE J2249, Wheelchair Tie-Down and Occupant Restraint Systems for Use in Motor Vehicles (thirty [30] mph/twenty [20] G impact test criteria); 49 C.F.R., Part 38; ADA, CSA Z605, Mobility Aid Securement and Occupant Restraint Systems for Motor Vehicles (thirty [30] mph/twenty [20] G impact test criteria); and ISO 10542 (proposed), Wheelchair Tie-Down and Occupant Restraint Systems for Use in Motor Vehicles (thirty [30] mph/twenty [20] G impact test criteria).

50.3.4 The retractors shall be heavy duty with heat-treated and plated components with a minimum of twenty-four (24) ratchet teeth in a metal housing. The retractor kit shall include a minimum of four (4) retractors with pivot points for securing the wheelchair.

50.3.5 Freedman First or approved equal wheelchair-securement system shall be equipped with Sure-Lok belts and Solo Floor Pin or an approved equal.

50.4 Interior Circulation:

Maneuvering room inside the bus shall accommodate easy travel for a passenger in a wheelchair from the loading device through the bus to the designated parking area and back out. No portion of the wheelchair or its occupant shall protrude into the normal aisle of the bus when parked in the designated parking space(s). As a guide, no width dimension should be less than 34.2 inches. Areas requiring 90° turns of wheelchairs should have a clearance-arc dimension no less than forty-five (45) inches and in the parking area where 180° turns are expected, space should be clear in a full sixty (60) inch-diameter circle. A vertical clearance of twelve (12) inches

above the floor surface should be provided on the outside of turning areas for wheelchair footrest.

50.5 Passenger information:

50.5.1 ADA priority seating signs as required shall be provided to identify the seats designated for passengers with disabilities.

50.5.2 Requirements for a public information system in accordance with ADA regulations shall be provided.

50.5.3 Requirements for exterior destination signs in accordance with ADA regulations shall be provided.

51.0 TOWING

Towing devices shall be provided on each end of the bus. Towing devices shall accommodate flat-bedding or flat-towing. The rear towing devices shall permit towing of the bus for a short distance, such as in cases of an emergency, to allow access to provisions for front towing of the bus.

52.0 JACKING

It shall be possible to safely jack up the bus at curb weight with a common bottle- or floor-jack, with or without a special adapter, when a tire or dual set is completely flat and the bus is on a level, hard surface without crawling under any portion of the bus. Jacking from a single point shall permit raising the bus sufficiently high to remove and reinstall a wheel and tire assembly. Jacking pads located on the lower structure near the wheels shall permit easy and safe jacking with the flat tire or dual set on a six (6) inch-high run-up block not wider than a single tire. The bus shall withstand such jacking at any one (1) or any combination of wheel locations without permanent deformation or damage. Jacking points shall be defined and illustrated in the *Operator's Manual* accompanying each bus.

53.0 HOISTING

The rear axle and the lower-structure cross tube, aft of the front suspension, shall accommodate the lifting pads of a two (2) post hoist system. Jacking plates will support the bus on jack stands independent of the hoist.

54.0 SAFETY EQUIPMENT

54.1 The manufacturer shall equip each bus with the following. These items will be securely mounted in an easily accessible location for quick access by the driver.

54.1.1 One (1) first-aid kit, OSHA approved, sixteen (16) unit minimum size.

54.1.2 One (1) fire extinguisher, five (5) pound rechargeable, dry chemical or carbon dioxide having an ABC rating, fully charged, and bearing the label of Underwriter's Laboratory.

54.1.3 Three (3) warning triangles, reflective collapsible type, stored in a secure container.

55.0 MISCELLANEOUS

55.1 Bicycle rack, Sportsworks Model DL3 Trilogy, Part 100546, or an approved equal will be installed with the appropriate manufactured mounting brackets to ensure proper and secure mounting.

55.2 A driver's "box," such as an easily accessible compartment near the driver's seat, shall be provided to allow "personals;" e.g., raincoat, lunch, paper towels, clipboard, etc., to be stored securely and to prevent loose objects from potentially injuring the driver or a passenger.

55.3 Provisions shall be made to install a passenger stop-request system consisting of a pull cord running the length of the coach on both sides, a chime resettable by the front-door opening, and a lighted "Stop Requested" sign mounted in the front facing the passenger area. Separate signaling systems shall be used for the wheelchair positions when so equipped. The passenger-signal system shall comply with the C.F.R., Part 38, ADA.

55.4 A decal showing the bus height, length, and width will be affixed in a position that can be easily viewed by the driver from a seated position in the driver's seat.

55.5 A public address system, Mobilepage or approved equal, shall be installed on each bus. The system shall have a minimum of six (6) internal speakers spaced and installed to provide balanced audio throughout the bus. The system shall also have one (1) waterproof external speaker installed in close proximity to the front-entrance door to allow waiting passengers to hear destination announcements made by the driver. The internal speakers and the external speaker shall have separate volume controls.

55.6 Digital, self-programmable LED message-sign securely attached behind and above the driver for passenger notes and information. Must be able to be clearly read from the farthest rear seat. The sign shall not interfere with the driver's vision or create a potential safety hazard to the driver or passengers.

55.7 Overhead, standard, advertising brackets on each side of bus interior above the passenger windows will be provided.

55.8 The vendor will install the schedule/information display, other document/flyer holders, manual farebox, counter, and passenger information signs as supplied by the PCPT.

56.0 MOBILE RADIO ACCOMMODATION

56.1 The radio-mounting area will have a minimum clear area of 14" X 22" inches and four (4) inches depth for installation, removal, and servicing of radio unit. The power wiring requirements will be the same as for the radio compartment. Must be easily accessible in the proximity of the driver's area but not in the passenger's area.

56.2 A No. 8 red lead from the battery-disconnect switch will run to the compartment to provide power for the radio transmitter. There will be a forty (40) amp fuse or circuit breaker in the red lead located as close as possible to the disconnect switch. A No. 8 black lead to the chassis ground or a solid vehicle-ground point within twenty-four (24) inches of the compartment will be provided.

56.3 There will be a solid-mounting point for the control head and the microphone located within the reach of the driver. A cable patch of adequate size, two (2) inches diameter minimum, from the control-head mounting point to the radio-compartment point will be integrated into the vehicle design. This precludes difficult and often unsightly modification as a result of radio installation.

56.4 An antenna and coax-mounting compartment will be placed half way between the centerline and the driver's side of the vehicle. The compartment will contain a "ground plate" with minimum dimensions of two (2) inches in diameter. A coax-cable path will allow routing to the radio compartment. A 4" X 4" access door or panel will be installed below the antenna mount to allow access to the underside of the mount from the vehicle interior.

57.0 MANUALS REQUIRED

57.1 One (1) complete set of manuals shall be provided with each bus. The specific manuals listed below must be provided:

57.1.1 *Operator's Manual*.

57.1.2 *Engine Maintenance Manual*.

57.1.3 *Transmission Maintenance Manual*.

57.1.4 *Air Conditioner Maintenance Manual*.

57.1.5 *Heater Maintenance Manual*.

57.1.6 *Pneumatic System Maintenance Manual*.

57.1.7 Complete as-built electrical schematics.

57.1.8 *Body Maintenance Manual*.

57.1.9 Engine parts list.

57.1.10 Transmission parts list.

57.1.11 Air conditioner parts list.

57.1.12 Chassis maintenance.

57.1.13 Chassis parts list.

57.1.14 Drive-train parts list.

57.1.15 *Radio Parts and Maintenance Manual*.

57.1.16 All warranty documentation.

57.2 Any other drawings, schematics, and other necessary prints of the unit are to be provided. All information necessary to perform maintenance and troubleshooting of this unit shall be provided.

HEAVY-DUTY LOW-FLOOR
THIRTY-FIVE (35) FOOT TRANSIT BUS
TECHNICAL SPECIFICATIONS

1.0 GENERAL INFORMATION

1.1 The vehicle shall conform in all respects to the State of Florida motor vehicle laws (including, but not limited to, Chapter 316, F.S., Safety Rules of the Department of Transportation, Chapter 14-90, F.A.C., promulgated under the requirements of Chapter 341, F.S.) and the ADA, Title 49 C.F.R. Part 38, Accessibility Specifications for Transportation Vehicles, Subpart B, Buses, Vans, and Systems. This vehicle shall also comply with 40 C.F.R. Parts 85 and 86, Air Pollution and Emission Standards for New Vehicles. Compliance with all applicable Federal motor vehicle safety standards shall also be required. The successful bidder will be required to provide any and all results of testing accomplished under the final rules issues by the Federal Transit Administration, 49 C.F.R. Part 655, Bus Testing Program. These test results to be provided by the successful bidder to the purchaser upon availability of the test results for release. The tests include the evaluation of maintainability, reliability, safety, performance, structural integrity, fuel economy, and noise.

1.2 The bidder must be a person, firm, or corporation that:

1.2.1 Has in operation or has the capability to have in operation, a manufacturing plant.

1.2.2 Has adequate engineering personnel, or has the capability to have such personnel, to satisfy any engineering or service problem that may arise during the warranty period.

1.2.3 Has the necessary facilities and financial resources, or has the capability to obtain such facilities and resources, to complete the contract in a satisfactory manner within the required time.

1.3 This type bus must have a manufacturer's rated life cycle of twelve (12) years, 500,000 miles and have been tested under this rating criteria at the Federal Transit Administration (FTA) Bus Testing Facility, currently located at Altoona, Pennsylvania, in accordance with the final rules issued by FTA in 49 C.F.R. Part 655, Bus Testing Program.

2.0 DESCRIPTION

2.1 The bus shall be a new, current-year production of heavy-duty, low-floor transit vehicle design and construction. The bus is to be a rear-engine design with an automatic transmission.

2.2 The bus shall be low-floor design with adjacent front-door ramp system, and include a passenger mid-door access. The design of such shall reflect the highest standards of concern of the welfare and safety of the general public and, in particular, the elderly and handicapped. A cutaway-type chassis will not be acceptable. The bus body and chassis shall be built and certified by the same manufacturer.

2.3 Dimensions:

With the exceptions of exterior mirrors, marker lights, bumpers, fender skirts, wipers, washers, and rub rails, the coach shall have the following overall dimensions at static conditions and design height.

Height:	126 Inches
Length Over Bumpers:	35 Feet, 7 Inches
Width:	102 Inches
Wheelbase:	222 Inches
Approach Angle:	8.5°
Break-Over Angle:	9.0°
Departure Angle:	9.0°

2.4 Underbody clearance:

2.4.1 The approach angle is the angle measured between a line tangent to the front tire static loaded radius arc and the initial point of structural interference forward of the front tire to the ground.

2.4.2 The departure angle is the angle measured between a line tangent to the rear tire static loaded radius arc and the initial point of structural interference rearward of the rear tire to the ground.

2.4.3 The break-over angle is the angle measured between two (2) lines tangent to the front and rear tire static loaded radius and intersecting at a point on the underside of the vehicle that defines the largest ramp over which the vehicle can roll.

2.4.4 Ground clearance: Ground clearance shall be no less than eight (8) inches, except within the axle zone and wheel area.

2.4.5 Axle clearance: Axle-zone clearance, which is the projected area between tires and wheels on the same axial centerline, shall be no less than 5.5 inches.

2.4.6 Wheel area clearance: Wheel-area clearance shall be no less than 6.5 inches for parts fixed to the bus body and five (5) inches for parts that move vertically with the axles.

2.5 Floor height:

Floor height may be a maximum of fourteen (14) inches at the centerline of the bus, and the step height can not exceed fourteen (14) inches.

2.6 Interior headroom:

The headroom above the aisle and at the centerline of the aisle seats shall be no less than ninety-six (96) inches in the forward half of the bus tapering to no less than seventy-five (75) inches forward of the rear settee.

2.7 Weight:

The curb weight of the coach shall not exceed 22,000 pounds. It shall be a design goal to construct the bus as light in weight as possible without degradation of safety, appearance, comfort, or performance. The bus, when fully loaded, including standees and all liquids, shall not exceed axle and tire designed weight capacities. The GVWR shall be a minimum of 28,600 pounds.

2.8 Capacity:

The coach shall be designed to carry a full load of passengers and standees without exceeding the GVWR or the GAWR. Passenger weight shall be calculated as 150 pounds per passenger.

3.0 SERVICEABILITY

3.1 The power plant shall be arranged so that accessibility for all routine maintenance is assured. No special tools, other than dollies and hoists, shall be required to remove the power plant. The muffler, exhaust system, air cleaner, air compressor, starter, alternator, radiator, all accessories, and any other component requiring service or replacement shall be easily removable and independent of the engine and transmission removal.

3.2 All fluid fill locations shall be properly labeled to help ensure correct fluid is added, and all fillers shall be easily accessible with standard funnels, pour spouts, and automatic dispensing equipment.

3.3 The engine and transmission shall be equipped with sufficient heavy-duty fuel and oil filters for efficient operation and to protect the engine and transmission between scheduled filter changes. To the extent practicable, the filters shall be of the spin-on, disposable type or integral with the engine and transmission. All filters shall be easily accessible and the filter bases shall be plumbed to assure correct reinstallation.

3.4 The bus shall be so designed and built as to provide full service access. Service entry to rear engine compartment to be accessible by rear swing-up door and left-hand and right-hand hinged swing outside door, meshed for airflow. The rear access door will allow service personnel to pull out the engine and transmission dipsticks.

3.5 Access shall also be provided to service the following:

3.5.1 Service check and addition of fluids including, but not be limited to, engine, transmission and power steering oils, and engine coolant.

3.5.2 Battery compartment.

3.5.3 Body and chassis electrical circuit panel.

3.5.4 Windshield wiper motor check and service, and windshield washer reservoir check/fill.

3.6 The fuel door will be mounted on the right side of the bus.

3.7 Service entry doors shall be latched by push-button-type or paddle latch.

4.0 MAINTAINABILITY

4.1 Prime consideration shall be given to the routing problems of maintaining the buses. All bus components and systems, mechanical, fluid, and electrical, which will require periodic physical work or inspection processes, shall be installed so that a minimum of time is spent gaining access to the critical areas.

4.2 Each bus shall be designed to facilitate the disassembly, reassembly, servicing, or maintenance with the use of tools and items that are normally available as commercial standard items. Requirements of any special tools must have the concurrence of Pasco County Fleet Maintenance. In addition, manufacturer-approved training will be provided to maintenance technicians on unique design systems.

4.3 The body and structure of all buses shall be designed for ease of maintenance and repair. Individual panels or other equipment, which may be damaged in normal service, shall be repairable or replaceable. Ease of repair shall be related to the vulnerability of the item to damage in service.

4.4 Welding procedures and materials shall be in accordance with standards of the ASTM and American Welding Society. All visible welds shall be ground smooth. Where metal is welded, the contact surface shall be free of scale, spatter, and grease and shall be treated to preclude rusting.

4.5 All parts, components, and accessories shall be new. All exposed surfaces and edges shall be smooth, free from burrs and other projections, and shall be neatly finished.

4.6 Bolts, washers, screws, and nuts must be certified against counterfeit or be American manufactured ONLY. This certification shall apply to the basic vehicle and all fasteners used to accomplish the modifications required by this specification.

4.7 Components with identical functions shall be interchangeable to the extent practicable. These components shall include, but are not limited to, passenger window hardware, interior trim, lamps, lamp lenses, and seat assemblies. Components with nonidentical functions shall not be, or appear to be, interchangeable. A component shall not be used in an application for which it was neither designed nor intended. Any one (1) component or unit used in the construction of these buses shall be an exact duplicate in design, manufacture, and assembly for each bus in each order group in this contract.

4.8 The vendor will supply diagnostic software needed to reference parts, procedures, and technical data in support of bus maintenance.

5.0 MATERIALS GENERAL SPECIFICATIONS

5.1 All copper tubing shall be industry standard. Long tubing nuts shall be applied where space conditions permit.

5.2 All piping, tubing, cables, and wiring shall be properly bracketed.

5.3 All mounting of assemblies and subassemblies, including the power plant and accessories, shall be mechanically isolated to minimize the transmission of vibration of the body structure.

5.4 All pipe fittings shall be of heavy-duty type and shall be designed to withstand the maximum pressure that could be generated under normal overload conditions with the air or fluid system of which they are a component.

5.5 All burrs and sharp edges shall be dressed so as to prevent injury to passengers, operators, and maintenance personnel.

5.6 All clevises shall be removable and not welded to the rods.

5.7 All welding shall conform to American Welding Society standard quality procedures and, where visible, have a finished appearance.

5.8 All plastics and synthetic material shall be fire retardant and self extinguishing.

5.9 All grease and oil fittings shall be readily accessible for lubrication. All elements of steering and drive systems requiring scheduled lubrication shall be provided with grease fittings. These fittings shall be located for ease of inspection and shall be accessible with a standard grease gun from a pit or with the bus on a hoist.

5.10 All steel bolts, nuts, screws, and washers shall be cadmium plated, except where otherwise requested. The thickness and method of cadmium coating shall conform to ASTM Specification No. A165, latest revision for Type TS coating. All cap screws, nuts, and bolts shall be of SAE Grade Five material, unless the application requires a higher-grade material.

5.11 All sheet metal screws shall comply with ASTM and SAE recommendations relative to quality and installation.

5.12 All air, oil, and water lines and openings into equipment units shall be sealed, plugged, or adequately protected against entrance of contaminants until connected.

5.13 Mountings of major assemblies, including engine, transmission, axles, power steering, and suspension components, shall be such that dismounting shall be easily carried out by conventional shop methods.

5.14 All components, assemblies, and subassemblies shall be readily accessible for service, repair, removal, and replacement.

5.15 The manufacturer shall use, whenever possible, low-mercury fluorescent lighting tubes, PCB-free ballast units, cleanable filters, and nonasbestos brake blocks and gaskets.

6.0 BODY DESIGN AND MATERIALS

The bus shall have a clean, smooth, sleek, compact design correctly proportioned and properly balanced. The exterior and body features, including grills and louvers, shall be shaped to allow complete and easy cleaning by automatic bus washers without snagging washer brushes. Water and dirt shall not be retained in or on any body

feature to freeze or bleed out onto the bus after leaving the washer. The body and windows shall be sealed to prevent leaking of air, dust, or water under normal operating conditions and during cleaning in automatic bus washers for the service life of the bus. Accumulation of spray and splash on any window of the bus, generated by the bus wheels on a wet road, shall be minimized.

7.0 STRENGTH AND FATIGUE LIFE

7.1 The coach structure shall be of a sufficient design to undergo structural durability testing such as the Altoona PTI testing for twelve (12) years and 500,000 miles.

7.2 All failures involving basic body, structure, axles, and suspension are considered structurally related failures for purposes of this specification.

7.3 The bus sidewall design shall provide passenger protection from automobile side impact. The roof and sides shall be engineered to support the entire weight of a fully loaded vehicle on its top and side, if overturned.

8.0 FIREPROOFING

The passenger and engine compartments shall be separated by a bulkhead(s) that shall, by incorporation of fireproof materials in its construction, be a firewall. The engine compartment shall include areas where the engine and exhaust system are housed, including the muffler, if mounted above the horizontal shelf. This firewall shall preclude or retard propagation of an engine compartment fire into the passenger compartment. Only necessary openings shall be allowed in the firewall, and these shall be fireproofed. Any passageways for the climate control system air shall be separated from the engine compartment by fireproof material. Piping through the bulkhead shall have copper, brass, or fireproof fittings sealed at the firewall with copper or steel piping on the forward side. Wiring may pass through the bulkhead only if connectors or other means are provided to prevent or retard fire propagation through the firewall. Engine access panels in the firewall shall be fabricated of fireproof material and secured with fireproof fasteners. These panels, their fasteners, and the firewall shall be constructed and reinforced to minimize warping of the panels during a fire that will compromise the integrity of the firewall.

9.0 CLEARANCES

9.1 Ground clearances: Buses shall have a minimum of 7.2 inches of front ground clearance and 8.1 inches of rear ground clearance at any position under the bus excluding axle zones. The minimum ground clearance in any axle zone shall be six (6) inches. No part of the bus, other than the wheels, tires, or mud flaps, shall touch a flat road surface in a stopped condition with a single tire or a dual set fully deflated.

9.2 Clearance angles: Buses shall have a minimum angle of approach of 8.5°, a minimum angle of departure of 9°, and a minimum break-over of 9° to accommodate safe negotiation of vertical curves.

10.0 STEERING/TURNING

10.1 The outside turning radius of the bus shall not exceed thirty-five (35) feet.

10.2 With the bus on dry, level, pavement and tires inflated to the recommended pressure, and the front wheels positioned straight ahead, the torque required to turn the steering wheel 10° shall be no greater than seven (7) foot-pounds. The steering wheel shall be a padded, two (2) spoke design with a maximum diameter of eighteen (18) inches. The steering column shall be equipped with tilt and telescoping features. The column shall be a Douglas DA-929 or approved equal.

10.3 Hydraulically assisted power steering shall be provided. The steering gear shall be a TRW Model TAS 65 or approved equal. Flexible line numbers and lengths shall be minimized. Power steering failure shall not result in loss of steering control.

10.4 Caster angle shall be selected to provide a tendency for the return of the front wheels to the straight ahead position with minimal assistance from the driver.

11.0 PERFORMANCE

11.1 The propulsion system shall be designed to allow the vehicle to meet or exceed the defined acceleration, gradability, and top-speed requirements. The requirements shall be met while driving all accessory drives. Timing for the acceleration shall commence when the accelerator is depressed; i.e., idle start. To ensure adequate performance and drive ability, the vehicle shall also be capable of full-throttle acceleration from converter stall ("D" range, brakes locked, full throttle) in the times listed:

Maximum Idle Start Acceleration Times on a Level Surface

Speed (mph)	Time (Seconds)
10	5.0
20	10.8
30	20.0
40	31.0
50	55.0
60	72.0

11.2 Gradability requirements shall be met on a dry asphalt or concrete service at GVWR with all accessories operating. The power plant shall meet and maintain a speed of forty-four (44) mph on a 2.5 percent grade and ten (10) mph on a 16 percent grade.

11.3 The coach shall be capable of achieving a top speed of seventy (70) mph on a straight and level road at GVWR with all accessories operating.

11.4 The operating range shall be no less then 400 miles with full fuel (diesel). Range calculations shall be done using useable fuel only.

12.0 ELECTRONIC NOISE CONTROL

Electrical and electronic subsystems and components on all buses shall be shielded so as not to emit electromagnetic radiation that will interfere with on-board communi-cations equipment.

13.0 INTERIOR/EXTERIOR NOISE

13.1 The interior noise produced by any one (1) bus shall not exceed eighty (80) db in the Altoona interior noise test. The maximum db level at driver's ear at thirty (30) mph on flat and level roadway shall not exceed eighty (80) db.

13.2 The exterior noise produced by any one (1) bus shall not exceed eighty-three (83) db in the Altoona exterior noise test.

14.0 OPERATING ENVIRONMENT

The bus shall achieve normal operation in ambient temperature ranges of -15° Fahrenheit to +120° Fahrenheit at relative humidity between five (5) percent and 100 percent. Degradation of performance due to atmospheric conditions shall be minimized at temperatures below -10° F, above 115° F, or at altitudes above 3,000 feet.

15.0 ENGINE, DIESEL

15.1 Engine shall be a Cummins ISB-07(or approved equal), 6.7 liter, in-line six (6) cylinder turbo charged diesel fuel powered engine producing a minimum of 520 foot-pounds of torque at 1,600 rpm and 260 hp at 2,600 rpm. Engine shall meet all applicable EPA emissions standards. Engine accessories, including air compressor and power steering pump must be gear driven. The engine shall, with normal maintenance, operate with no smoke or objectionable odors using fuels and oils meeting the manufacturer recommendation. Engine starter switches are to be wired with a protective circuit to prevent starter engagement with engine running. Engine shall be equipped with primary and secondary spin-on fuel filters.

15.2 The engine and transmission shall be mounted as an in-line, T-Drive unit and shall be demountable as a unit and so arranged to provide convenient accessibility for servicing. The power plant shall be so mounted as to provide maximum isolation to audible frequencies.

15.3 The power plant and compartment shall be sealed to prevent smoke or fumes from entering the coach interior. Engine bulkhead and exhaust plenum duct shall be insulated to minimize heat and noise transfer to the interior.

15.4 The engine shall be equipped with an electronically controlled management system, compatible with multiplex wiring systems and either twelve (12) or twenty-four (24) volt electrical systems. The engine control system shall be capable of receiving electronic inputs from the engine and other vehicle systems. Communication between these electronic systems shall be made using the SAE J1939, Recommended Practice Communication Link. The engine's electronic management system shall monitor operating conditions and provide instantaneous adjustments to optimize both engine and bus performance. The system shall be programmable to allow optimization of engine performance.

15.5 The engine shall have on-board diagnostic capabilities, able to monitor vital functions, store out-of-parameter conditions in memory, and communicate faults and vital

conditions to service personnel. The diagnostic reader device connector ports, suitably protected against dirt and moisture, shall be provided in the operator's area and near or inside engine compartment. The on-board diagnostic system shall inform the operator via visual and/or audible alarms when out-of-parameter conditions exist for vital engine functions.

15.6 The engine shall be equipped with an operator-controlled fast-idle device. The fast-idle control shall mount on the dash or side console, and shall activate only with the transmission in neutral. The control shall be interlocked so as to return the engine to normal idle rpm automatically when the parking brake is released or the transmission is put in gear.

15.7 The air cleaner to be a Cooper Model ZD2502 cyclonic heavy-duty (or approved equal), dual-stage design with replaceable element and restriction indicator, conveniently located in the engine compartment. Direct access shall be provided for replacement without removal of any other chassis components or brackets. Fresh air routed from a body intake grill located in the extreme upper-right rear of bus. The air inlet grill shall be as close to the roofline as possible to ensure the cleanest air possible. It shall meet all current applicable emissions standards.

15.8 It shall have a primary fuel water separator, Raycor or approved equal, with see-through bowl and self-venting drain.

15.9 Engine guard:

It shall be Cummins programmable system, or approved equal, electronically controlled engine shut-down system. The system shall sense engine low-oil pressure and high-coolant temperature.

15.10 Accessories:

Engine-driven accessories shall be mounted for quick removal and repair. These accessories shall be driven at speeds sufficient to ensure adequate system performance during extended periods of idle operation and low route speed portion of the design operating profile.

15.11 Hydraulic systems:

15.11.1 Engine-driven accessories shall be mounted for quick removal and repair. These accessories shall be driven at speeds sufficient to ensure adequate system performance during extended periods of idle operation and low route speed portion of the design operating profile.

15.11.2 Any accessory may be driven hydraulically. Hydraulic system service tasks shall be minimized and scheduled no more frequently than those of other major coach's systems. All elements of the hydraulic system shall be easily accessible for service or unit replacement. The hydraulic system shall have a full flow spin-on filter with restriction indicator.

15.11.3 The system is to utilize Sauer Danfoss, or approved equal, hydraulic power-assisted steering and hydraulically driven cooling fan systems driven by dual tandem pump

installation on the engine with a single common reservoir with split compartments. Total system capacity of 3.5 gallons.

15.12 Oil and hydraulic lines:

Oil and hydraulic lines shall be compatible with the substances they carry. The lines shall be designed and intended for use in the environment which they are installed; i.e., high temperatures in engine compartment, road salts, oils, etc. Lines shall be capable of withstanding maximum system pressures. Lines within the engine compartment shall be composed of steel tubing, where practicable, except in locations where flexible lines are specifically required.

16.0 TRANSMISSION

16.1 Shall be an Allison B300R, or approved duty cycle equal, five (5) speed electronically controlled automatic transmission with a torque converter and hydraulic integral retarder approved for engine transmission combination.

16.2 The electronically controlled transmission shall have on-board diagnostic capabilities, able to monitor functions, store out-of-parameter conditions in memory, and communicate faults and vital conditions to service personnel. A diagnostic reader device connector port, suitably protected against dirt and moisture, shall be provided. The on-board diagnostic system shall trigger a visual alarm to the operator when the electronic control unit detects a malfunction. The transmission shall contain built-in protection software to guard against severe damage.

16.3 The system will have the capacity to perform under heavy-duty transit start-and-stop-duty cycles.

16.4 The transmission shall be equipped with two (2) separate oil filters. One (1) screen type internal oil pan filter and one (1) spin-on quart cartridge externally mounted oil filter.

16.5 An electronic shift selector shall be provided. Provision shall be made to prevent starting engine in any selection except neutral.

16.6 Retarder:

The transmission shall be equipped with a retarder designed to extend brake lining service life. The application of the retarder shall only occur with the application of the service brakes and shall cause a smooth blending of both retarder and service brake functions. Brake lights shall illuminate when the retarder is activated.

16.7 Backup alarm:

The bidder shall provide a reverse direction alarm in compliance with SAE J994b with respect to acoustical performance for a Type B device but emitting at least seven (7) db, but not more than eleven (11) db with a supply of fourteen (14) volts. Conformity to the environmental test stipulated by the SAE shall not be required.

17.0 COOLING SYSTEM

17.1 The cooling systems shall be of sufficient size to maintain all engine and transmission fluids and engine intake air at safe, continuous operating temperatures and in accordance with engine and transmission manufacturers' cooling system requirements. The cooling system fan control should sense the temperature of the coolant fluid and, if temperatures above safe operating conditions are detected, the cooling fan should be engaged.

17.2 Radiator piping shall be stainless steel or copper tubing and, where practical, hoses shall be eliminated. Necessary hoses shall be a premium, silicone rubber-type that is impervious to all bus fluids. All hoses shall be as short as practicable. All hoses shall be secured with premium, stainless-steel clamps. The clamps shall maintain a constant tension at all times, expanding and contracting with the hose in response to temperature changes and aging of the hose material.

17.3 Engine cooling:

17.3.1 A water-based, pressure-type, cooling system that does not permit boiling or coolant loss during the operations described above, shall cool the engine. The engine thermostat shall be easily accessible for replacement. Valves shall permit complete shutoff of lines for the heating and defroster units, and water-booster pump.

17.3.2 A sight glass shall be provided on the exterior of the vehicle to enable water level to be checked. The expansion tank shall be equipped with a low coolant probe that will illuminate a dash light and set off an audible alarm when the coolant level drops below the probe.

17.3.3 The radiator shall provide a minimum 539-square-inch frontal area, ten (10) fins per inch. A side-by-side (not stacked) radiator and charge air cooler shall be installed facing the street side of the vehicle.

17.3.4 The radiator and charge air cooler shall be designed to withstand thermal fatigue and vibration associated with the installed configuration.

17.3.5 The cooling fan shall be thermostatically controlled, allowing the engine to reach operating temperature quickly. The thermostatically controlled fan shall not be driven when the coolant temperature falls below the minimum level recommended by the engine manufacturer. The radiator fan shall be thermostatically controlled hydraulic driven twenty-seven (27) inches minimum diameter.

17.4 Charge air cooling:

The charge air-cooling system shall provide maximum air-intake temperature reduction with minimal pressure loss. The charge air cooler shall provide a minimum 289-square-inch frontal area. Air ducting and fittings shall be protected against heat sources and shall be configured to minimize restrictions and maintain sealing integrity.

17.5 Transmission cooling:

The transmission shall be cooled by a separate heat exchanger, sized to maintain operating fluid within the transmission, and the manufacturer's recommended parameters of flow, pressure, and temperature.

18.0 MOUNTING

The power plant shall be mounted in a compartment in the rear of the bus. Power plant mounting shall be mechanically isolated to minimize transfer of vibration to the body structure. Mounts shall control movement of the power plant so as not to affect performance of belt-driven accessories or cause strain in piping and wiring connections to the power plant.

19.0 FUEL SYSTEM

19.1 Equip with a transverse-mounted ninety (90) gallon, minimum-capacity, steel-constructed fuel tank. Shall be equipped with internal baffles to prevent surging. The base fill rate shall be thirty (30) GPM.

19.2 The fuel-water separator shall be Raycor or equal.

19.3 The tank shall be provided with an external hex-head drain plug. The fuel pickup tubes shall ensure full-power operation on a six (6) percent grade for up to fifteen (15) minutes with no more than twenty-five (25) gallons of fuel over the useable amount in the tank. The tank shall be appropriately labeled according to the Federal Motor Carrier Safety Regulations.

19.4 The fuel door is to be spring loaded.

19.5 The capacity, date of manufacture, manufacturer's name, location of manufacture, and certification of compliance to the Federal Motor Carrier Safety Regulations shall be permanently marked on the fuel tank. The markings shall be readily visible and shall not be covered with an undercoating material.

19.6 Fuel lines shall be securely mounted, braced, and supported as designed by the bus manufacturer to minimize vibration and shall be protected against damage, corrosion, or breakage due to strain or wear.

19.7 Fuel lines from the fuel tanks to the engine shall meet the engine manufacturer's requirements, supported by polyethylene bushings as required to protect components and maintain tubing integrity.

20.0 EXHAUST SYSTEM

Exhaust gases shall be discharged from the roadside rear corner of the roof through a vertically mounted exhaust stack. The entire exhaust system shall be adequately shielded to prevent heat damage to any bus component. The exhaust outlet shall be designed to minimize rain or snow from entering into the exhaust pipe. The exhaust piping shall be constructed of aluminized or stainless steel. A Nelson or approved equal aluminized silencer exhaust muffler shall be provided.

21.0 AIR COMPRESSOR/AIR SYSTEM

21.1 The bus shall have an air system to operate all accessories, brakes, and suspension systems with reserve capacity. Provision shall be made to apply shop air to the bus air systems, one (1) located at the front of vehicle behind the bumper and one (1) located in the rear near the air dryer, using a standard tire inflation type valve. Air for the compressor shall be filtered through the main engine air cleaner system. The air system shall be protected by a pressure relief valve set at 150 psi and shall be equipped with check-valve and pressure-protection valves to ensure partial operation in case of line failures.

21.2 Air compressor:

Shall be a Wabco, or approved equal, having a minimum rated capacity of 15.2 cubic feet per minute (cfm). It shall be engine mounted. It shall be gear driven and water cooled. It shall be flange mounted to the engine and lubricated by the engine lubrication system. It shall be capable of charging the standard system from 40 psi to full charge within four (4) minutes while not exceeding fast idle.

21.3 Air piping:

21.3.1 All lines except flexible lines will conform to SAE J1149 or SAE J844.

21.3.2 The lines shall be supported to prevent movement and vibration. Air line fittings shall be "push-to-connect" type fittings wherever possible. Air lines shall be seamless color-coded air-pressure synthetic tubing with standard brass fittings. Air lines shall be run in protected areas. They shall be supported by approved tubing clips and shall be protected by rubber grommets at all points where they pass through the under frame or body frame members. The discharge line from the compressor to the first tank shall be Teflon lined and covered with a stainless-steel braided jacket.

21.3.3 The air dryer shall be, Bendix A1-DS, or approved equal, with heater element, and will be installed to prevent accumulation of moisture and oil in the air system. The air dryer shall incorporate a built-in safety-pressure valve and air governor.

21.4 Air tanks:

21.4.1 Air reservoirs will be installed according to FMVSS 121.

21.4.2 There shall be four (4) tanks with a total combined volume of 5,850 cubic inches, minimum, as indicated below. Shall be equipped with remotely operated manual drain valves.

Primary Reservoir	1,400 Cu. In.
Secondary Reservoir	1,400 Cu. In.
Accessory Reservoir	2,600 Cu. In.
Other Reservoir Type	450 Cu. In.

22.0 BRAKE SYSTEM

22.1 Air brakes shall be Meritor, or approved equal, air-actuated disc brakes (no drum brakes will be accepted) with automatic adjustment at all four (4) wheel position. The front and rear brake calipers shall be interchangeable. Brakes shall be self adjusting, when applied, and shall be free of objectionable noise or squeal.

22.2 The braking system shall be controlled and actuated by a compressed-air system using twenty (20) inch front and twenty-four (24) inch rear combination brake chambers to actuate the brake calipers. The brake rotors shall have a maximum diameter of fifteen (15) inches. The system shall meet the vehicle braking requirements outlined in FMVSS 121. The microprocessor for the ABS system shall be in a protected but accessible location to allow for ease of service.

22.3 Actuation of ABS shall override the operation of the retarder.

22.4 Nonasbestos brake pads shall be provided

22.5 The parking brakes shall be spring activated, air released, and controlled by a valve that exhausts compressed air to apply the brakes. The parking brake may be manually activated when the air pressure is at the operating level per FMVSS 121. The parking brake will automatically activate when air pressure drops below 40 psi nominal.

23.0 CONSTRUCTION

23.1 Body:

23.1.1 The bus shall have a clean, smooth, simple design. The exterior body features, including grilles and louvers, shall be shaped to facilitate cleaning by automatic bus washers without snagging washer brushes. Water and dirt shall not be retained in or on any body feature to freeze or bleed out onto the bus after leaving the washer. The body and windows shall be sealed to prevent leaking of air, dust, or water under normal operating conditions and during cleaning in automatic bus washers for the service life of the bus.

23.1.2 Exterior panels shall be sufficiently stiff to minimize vibration, drumming, or flexing while the bus is in service. When panels are lapped, the upper and forward panels shall act as a watershed. The windows, hatches, and doors shall be sealed.

23.2 Crash worthiness:

23.2.1 The bus body and roof structure shall withstand a static load equal to 150 percent of the curb weight evenly distributed on the roof with no more than a six (6) inch reduction in any interior dimension. Windows shall remain in place and shall not open under such a load.

23.2.2 The bus shall withstand a twenty-five (25) mph impact by a 4,000-pound automobile at any point, excluding doorways, along either side of the bus with no permanent structural deformation at seated passenger hip height. This impact shall not result in sharp edges or protrusions in the bus interior.

23.2.3 Exterior panels below thirty-five (35) inches from ground level shall withstand a static load of 2,000 pounds applied perpendicular to the bus by a pad no larger than five (5) inches square. This load shall not result in deformation that prevents installation of new exterior panels to restore the original appearance of the bus.

23.3 Materials:

The body materials shall be selected and the body fabricated to reduce maintenance, extend durability, and provide consistency of appearance throughout the service life of the bus. Detailing shall be kept simple. Add-on devices and trim, where necessary, shall be minimized and integrated into the basic design.

23.4 Corrosion:

23.4.1 The bus flooring, sides, roof, understructure, and axle-suspension components shall be designed to resist corrosion or deterioration from atmospheric conditions and road salts. It shall maintain structural integrity and nearly maintain original appearance throughout its service life, provided that it is maintained by the procuring agency in accordance with the procedures specified in the contractor's service manual. All materials that are not inherently corrosion resistant shall be protected with corrosion-resistant coatings. All joints and connections of dissimilar metals shall be corrosion resistant and shall be protected from galvanic corrosion. With the exception of periodically inspecting the visible coatings applied to prevent corrosion and reapplying these coatings in limited spots, the contractor shall not require the complete reapplication of corrosion compounds over the life of the bus.

23.4.2 Steel tubing, channel, or plate used in the construction of the chassis shall be shot blasted and primed with a urethane zinc primer and coated with PPG Corashield, or approved equal, coating. The inside of the tubular members shall be coated with an anticorrosion (NWACA120) modified wax in white spirits. This anticorrosion coating shall also contain organic corrosion inhibitors, thixotropic-enhancing agents, and a UV tracer. The holes through which this material is injected shall be sealed with threaded fasteners. Between dissimilar metals, corrosion shall be controlled with a special joining compound. This anticorrosive jointing compound, Duralac or approved equal, shall be made expressly to protect against corrosion with dissimilar metals.

23.5 Insulation:

The insulation used between the inner and outer panels shall be a closed cell, lightweight, resilient, foamed plastic composed of hydrogen and carbon atoms that minimizes entry and/or retention of moisture. The insulation properties shall be unimpaired during the service life of the bus. The engine compartment shall be insulated with an aluminized glass-cloth quilted/laminated-fiberglass blanket that does not absorb or retain oils or water and is designed to prevent casual damage that may occur during maintenance operations. The body shall be insulated against operating noises and vibrations.

23.6 Repair and replacement of exterior panels:

Lower exterior panels within twenty-six (26) inches above ground level shall be removable for ease of repair or replacement. The panels shall be no greater than 6.5 feet in length and shall be easily replaced in approximately ten (10) minutes.

23.7 Rain gutters:

Rain gutters shall be provided to prevent water flowing from the roof onto the passenger doors, operator's side window, and passenger windows. When the bus is decelerated, the gutters shall not drain onto the windshield, operator's side window, or into the door boarding area. Cross sections of the gutters shall be adequate for proper operation.

23.8 Resonance and vibration:

All structure, body, and panel-bending mode frequencies, including vertical, lateral, and torsional modes, shall be sufficiently removed from all primary excitation frequencies to minimize audible, visible, or sensible resonant vibrations during normal service.

23.9 Distortion:

23.9.1 The bus, loaded to GVWR and under static conditions, shall not exhibit deflection or deformation that impairs the operation of the steering mechanism, doors, windows, passenger-escape mechanisms, and service doors. Static conditions shall include the vehicle at rest with any one (1) wheel or dual set of wheels on a six (6) inch curb or in a six (6) inch deep hole.

23.9.2 All structure, body, and panel-bending mode frequencies, including vertical, lateral, and torsional modes, shall be sufficient to minimize audible, visible, or sensible resonant vibrations during normal service.

23.10 Interior finish:

23.10.1 All materials shall meet FMVSS 302 and FTA-funded coaches. Interior panels shall meet Docket 90. Materials shall be selected based on maintenance, durability, appearance, and safety. Trim pieces shall be kept simple and to a minimum. The interior materials shall be cleanable with normal commercial-grade cleaning agents. The wall and bulkhead surfaces shall be designed to allow particles to fall easily to the floor. Materials shall be strong enough to resist everyday abuse and vandalism; they shall be resistant to scratches and markings. Interior trim shall be secured to avoid resonant vibrations under normal operational conditions.

23.10.2 The entire front end of the bus shall be constructed to minimize debris accumulation behind the dash and to prevent the operator's feet from kicking or fouling wiring and other equipment. The front end shall be free of protrusions that are hazardous to passengers standing or walking in the front of the bus during rapid decelerations. Paneling across the front of the bus and any trim around the operator's compartment shall be formed metal, plastic, or composite material. Plastic dash panels shall be reinforced, as necessary, and replaceable. The operator's area shall be kept simple and glare free. The design shall facilitate easy reach of functions and shall be

ergonomically pleasing. The driver shall control lighting forward of the standee line. Surfaces forward of the standee line shall be of a matte finish. All colored, painted, and plated parts forward of the operator's barrier shall be finished with a dull matte surface to reduce glare. Color should be coordinated to compliment the entire interior of the bus.

23.10.3 The rear bulkhead paneling shall be contoured to fit the ceiling, sidewalls, and seat backs so that any litter, such as a cigarette package or newspaper, will tend to fall to the floor or seating surface when the bus is on a level surface. Any air vents in this area shall be louvered to reduce airflow noise and to reduce the probability of trash or liter being thrown or drawn through the grille. If it is necessary to remove the panel to service components located on the rear bulkhead, the panel shall be hinged or shall be able to be removed and replaced by a 3M mechanic in five (5) minutes. Grilles where access to or adjustment of equipment is required shall be heavy duty and designed to minimize damage. The rear bulkhead shall be a pleasing design using a composite material for the bus. The design shall be kept simple and maintainable.

23.10.4 Interior side trims, panels, and operator's barrier shall be anodized aluminum, plastic, or melamine-type material. Panels shall be easily replaceable and tamper-resistant. They shall be reinforced, as necessary, to resist vandalism and other rigors of transit bus service. Individual trim panels and parts shall be interchangeable to the extent practicable. Untrimmed areas shall be painted and finished. Color should be coordinated to compliment the entire interior of the bus.

23.10.5 Ceiling panels shall be anodized aluminum, melamine-type material. Headlining shall be supported to prevent buckling, drumming, or flexing and shall be secured without loose edges. Headlining materials shall be treated or insulated to prevent marks due to condensation where panels are in contact with metal members. Moldings and trim strips, as required to make the edges tamperproof, shall be aluminum or plastic, colored to compliment the ceiling material. Headlining panels covering operational equipment that is mounted above the ceiling shall be on hinges for ease of service but retained to prevent inadvertent opening.

23.10.6 Interior panels shall be attached so that there are no exposed unfinished or rough edges or rough surfaces. Panels and fasteners shall not be easily removable by passengers. Interior trim fasteners, where required, shall be rivets or cross-recessed head screws.

23.11 Interior access panels:

23.11.1 Access for maintenance and replacement of equipment shall be provided by panels and doors that appear to be an integral part of the interior. Access doors shall be hinged with gas props or over-center springs, where practical, to hold the doors out of the mechanic's way. Panel fasteners shall be standardized so that only one (1) tool is required to service all special fasteners within the bus.

23.11.2 Access doors for the door actuator compartments shall be secured and shall prevent entry of mechanism lubricant into the bus interior. The locks shall be standardized so that only one (1) tool is required to open access doors on the bus. All fasteners that retain access panels shall be captive in the cover.

23.11.3 Access openings in the floor shall be sealed to prevent entry of fumes and water into the bus interior. Flooring material shall be flush with the floor and shall be edge bound with aluminum to prevent the edges from coming loose. Access openings shall be asymmetrical so that reinstalled flooring shall be properly aligned. Fasteners shall tighten flush with the floor.

23.11.4 Any access to engine compartment from the passenger compartment shall be water and fume proof, and shall be properly fitted and heavily insulated to prevent engine heat and noise transfer into the driver area or passenger compartment. In addition, the engine firewall shall be equipped with a heat- and noise-reduction insulation package.

23.12 Fender trim and mud flaps:

23.12.1 Features to minimize water spray from the bus in wet conditions shall be included in the wheel housing design. Fenders shall be easily replaceable. They shall be flexible and extend minimally beyond the body width. Wheels and tires shall be removable with the fenders in place.

23.12.2 Splash aprons, composed of ¼-inch minimum composition or rubberized fabric, shall be installed behind wheels as needed to reduce road splash and protect under floor components. The splash aprons shall extend downward to within four (4) inches of the road surface at static conditions. Apron widths shall be no less than tire widths. Splash aprons shall be bolted to the bus understructure. Splash aprons and their attachments shall be inherently weaker than the structure to which they are attached. The flexible portions of the splash aprons are not included in the road-clearance measurements.

23.13 Bumpers:

23.13.1 Bumpers shall provide impact protection for the front and rear of the bus with the top of the bumper being twenty-six (26) ± two (2) inches above the ground. The bumper height shall be such that when one (1) bus is parked behind another, a portion of the bumper faces will contact each other.

23.13.2 Front bumper:

The front bumper shall be an energy-absorbing bumper manufactured by Transpec or approved equal, designed to minimize damage as a result of a five (5) mph impact of the bus at curb weight with a fixed, flat barrier perpendicular to the bus' longitudinal centerline. The bumper shall return to its pre-impact shape within ten (10) minutes of the impact. The bumper shall protect the bus from damage as a result of 6.5 mph impacts at any point by the Common Carriage with Contoured Impact Surface defined in Figure 2 of FMVSS 301 loaded to 4,000 pounds parallel to the longitudinal centerline of the bus and 5.5-mph impacts into the corners at a 30° angle to the longitudinal centerline of the bus. The energy absorption system of the bumper shall be independent of every power system of the bus and shall not require service or maintenance in normal operation during the service life of the bus. The bumper shall increase the overall bus length by a maximum of 4.0 ± one (1) inch.

23.13.3 Rear bumper:

The rear bumper shall be an energy-absorbing bumper manufactured by Transpec or approved equal, designed to minimize damage as a result of a two (2) mph impact with a fixed, flat barrier perpendicular to the longitudinal centerline of the bus. The bumper shall return to its pre-impact shape within ten (10) minutes of the impact. When using a yard tug with a smooth, flat plate bumper two (2) feet wide contacting the horizontal centerline of the rear bumper, the bumper shall provide protection at speeds up to five (5) mph, over pavement discontinuities up to one (1) inch high, and at accelerations up to two (2) mph/second. The rear bumper shall protect the bus when impacted anywhere along its width by the Common Carriage with Contoured Impact Surface defined in Figure 2 of FMVSS 301 loaded to 4,000 pounds, at four (4) mph parallel to, or up to a 30° angle to, the longitudinal centerline of the bus. The rear bumper shall be an anti-ride design, shaped to preclude unauthorized riders standing on the bumper. The bumper shall be independent of all power systems of the bus and shall not require service or maintenance in normal operation during the service life of the bus. The bumper shall increase the overall bus length by a maximum of 4.05 ± one (1) inch.

23.13.4 Bumper material:

Bumper material shall be corrosion-resistant skin with a Pultruded Vinylester backup structure that withstands impacts of the specified loads without sustaining damage. Visible surfaces shall be black in color. These bumper qualities shall be sustained throughout the service life of the bus.

24.0 FLOOR

24.1 The floor shall be essentially a continuous flat plane, except at the wheel housings and platforms. The floor height shall be designed to eliminate steps and facilitate boarding and de-boarding of passengers.

24.2 The floor design shall consist of two (2) levels (bi-level construction). Aft of the rear door, extending to the rear settee riser, the floor height shall be raised. The floor in the upper level shall not be sloped.

24.3 Where the floor meets the walls of the bus, as well as other vertical surfaces, such as platform risers, the surface edges shall be blended with a circular section of radius of not less than one (1) inch. Similarly, the flooring shall prevent debris accumulation between the floor and wheel housings. The vehicle floor in the area of the entrance and exit doors shall have a lateral slope of up to 2° maximum to allow for drainage.

24.4 Strength:

The floor substructure shall be integral with the basic structure of the chassis with the subfloor mounted on the structure securely to prevent chafing or horizontal movement and shall be designed to last the life of the bus. Flooring shall be screwed down and serviceable from one (1) side only. Staples or driven pins are not acceptable. Any gaps and voids shall be filled and sanded to provide a smooth surface before floor covering. The use of adhesives to secure the floor to the structure shall be allowed only in combination with the use of bolt or screw fasteners, and its effectiveness shall last throughout the life of the coach. Tapping plates shall be secured and protected

from corrosion for the service life of the bus. The lower structure shall be designed to maximize the support of the passenger loads on the floor deck.

24.5 Construction:

24.5.1 The floor shall consist of the subfloor and the floor covering. The floor, as assembled, including the sealer, attachments, and covering shall be waterproof, non-hygroscopic, and resistant to mold growth. The subfloor shall be resistant to the effects of moisture, including decay (dry rot). It shall be impervious to wood destroying insects such as termites.

24.5.2 The floor covering shall be Altro Transflor manufactured, or approved equal, nonskid walking surface that remains effective in all weather conditions and complies with all ADA requirements. The floor covering, as well as transitions of flooring material to the main floor and to the entrance and exit area, shall be smooth and present no tripping hazards. The standee line shall be at least two (2) inches wide and shall extend across the bus aisle. This line shall be the same color as the outboard edge of the entrance/exit areas. The purchaser will make a selection from the bidder's standard offering.

24.5.3 The subfloor shall be fabricated from plywood that is a minimum .50" thick with high density overlay (HDO) film with a thermosetting exterior-type resin-impregnated fiber surface bonded to both sides under heat and pressure. The HDO film shall provide a moisture barrier to the bottom of the plywood. It shall be certified to APA, the Engineered Wood Association (formerly the American Plywood Association) PS-1, Stru 1 exterior plywood standards. All edges shall be sealed with CBS-156-60-1 high solids edge sealant. It shall be designed to support all the design loads. Any preservative treatments shall utilize no EPA listed hazardous chemicals. The concentration of preservative chemical shall be equal to or greater than required for an above ground level application. Treated plywood shall be certified for preservative penetration and retention by a third party inspection agency. Pressure-preservative treated plywood shall have a moisture content at or below fifteen (15) percent.

25.0 PLATFORMS

25.1 Trim shall be provided along top edges of platforms as well as integral nosing where appropriate. Except where otherwise indicated, covering of platform surfaces and risers shall be of the same material as specified for floor covering. Other raised areas providing space for under floor installation of components shall be limited. Such raised areas shall be constructed in accordance to these specifications.

25.2 Operator's platform:

The operator's platform shall be raised a maximum of 14.75 inches from the nominal floor height at the entrance door. Two (2) steps, with a maximum riser height of 9.25 inches shall allow ease of entry for the operator. The raised height of the platform shall provide the operator an excellent view forward as well as through the entrance door glazing and the driver's street side window.

25.3 Intermediate Platform:

An intermediate platform shall be provided along the center aisle of the bus to facilitate passenger traffic between the upper and lower floor levels. This platform shall be a maximum three (3) step design with the lower step on the lower level and the upper steps cut into the rear platform. The steps shall be a minimum of 24.50 inches wide with risers a maximum of 7.5 inches high each. The depth of the steps shall be a minimum of is 11.25 inches. The steps shall be covered with the same material as the floor and have a two (2) inch yellow nosing.

26.0 WHEELHOUSING

26.1 Sufficient clearance and air circulation shall be provided around the tires, wheels, and brakes to prevent overheating when the bus is operating on the design operating profile.

26.2 Wheel housings shall be constructed of corrosion-resistant, fire-resistant composite material. Wheel housings, as installed and trimmed, shall withstand impacts of a two (2) inch steel ball with at least 200 foot-pounds of energy without penetration.

26.3 Wheel housings shall be adequately reinforced where seat pedestals are installed. Wheel housings shall have sufficient sound insulation properties to minimize tire and road noise.

26.4 Design and construction of front wheel housings shall allow for the installation of a radio/electronic equipment storage compartment or its use as a luggage rack on the interior top surface.

26.5 The exterior finish of the front wheel housings shall be color coordinated to compliment interior finishes of the bus. The wheel housings shall be designed to minimally intrude into the passenger areas of the bus.

27.0 PEDESTRIAN SAFETY

Exterior protrusions greater than ½ inch and within eighty (80) inches of the ground shall have a radius no less than the amount of the protrusion. The exterior rearview mirrors and required lights and reflectors are exempt from the protrusion requirement. Grilles, doors, bumpers, and other features on the sides and rear of the bus shall be designed to minimize the ability of unauthorized riders to secure toeholds or handholds.

28.0 DRIVELINE ASSEMBLY

The rear axle shall be an Arvin-Meritor RS-21 or approved equal, single reduction rear drive axle with hub piloted wheels providing a GAWR of 21,000 pounds. Rear axle ratio shall be 5.13. The carrier housing shall be separable with a bolted ring gear and shall be equipped with magnetic internal hex-head lubricant drain plug. Carrier and hubs shall be internally oil lubricated with multipurpose gear oil. The drive shaft shall be protected from striking the floor of the bus or the ground in the event of a tube or universal joint failure.

29.0 SUSPENSION

29.1 Front suspension:

The independent front suspension (IFS) shall incorporate parallel wishbone arms and rolling diaphragm air springs. Ride height shall be maintained by the use of two (2) leveling valves. The IFS shall be rated at 10,000 pounds minimum. Adjustment points shall be minimized. Necessary adjustments shall be easily accomplished without removing or disconnecting the components. A pressure-regulating valve shall protect against air loss from leaks in the suspension system.

29.2 Rear suspension:

The rear suspension design shall be trailing arm air springs over taper leaf configuration equipped with a minimum of two (2) air springs. Adjustment points shall be minimized. Necessary adjustments shall be easily accomplished without removing or disconnecting the components. A pressure-regulating valve shall protect against air loss from leaks in the suspension system.

29.3 Travel:

The suspensions shall permit a wheel travel of three (3) inch jounce and three (3) inch rebound. Molded rubber bumpers shall be provided at the limit of jounce travel. Rebound travel shall be limited hydraulically within the shock absorbers. Front and rear suspensions shall incorporate appropriate devices for automatic height control.

29.4 Damping:

29.4.1 The air suspension system shall employ two (2) air bellows at front independent suspension and two (2) air bellows at the rear axle. Horizontal movement of the rear axle shall be prevented by the use of transverse track rods.

29.4.2 Vertical damping of the suspension system shall be accomplished by Gabriel or approved equal, hydraulic shock absorbers mounted to the suspension arms or axles and attached to an appropriate location on the chassis.

29.5 Kneeling system:

29.5.1 A kneeling system shall lower the entrance of the bus to a maximum height of ten (10) inches during loading or unloading operations. The kneeling system shall not allow the bus to kneel until the parking brake has been applied. The system will be driver controlled by use of two (2) push-button-type switches that are both labeled and color-coded for ease of recognition. Pressing the raise switch will allow the system to go to normal height without the driver having to hold the switch. Release of the parking brake will also automatically raise the suspension to normal height.

29.5.2 Brake and throttle interlock shall prevent movement when the bus is kneeled. The kneel control shall be disabled when the bus is in motion. The bus shall kneel at an approximate rate of 1.25 inches per second at essentially a constant rate. After kneeling, the bus shall rise within approximately two (2) seconds to a height permitting

the bus to resume service and shall rise to the correct operating height within seven (7) seconds regardless of load up to GVWR.

29.5.3 A dash indicator, visible to the driver, shall be illuminated when the bus is in a kneeled position. Also, an audible alarm will sound simultaneously with the operation of the kneeler to alert passengers. An amber warning light mounted near the curb side of the front door shall be provided that will flash when the kneeling feature is activated.

30.0 TIRES AND WHEELS

30.1 The bus shall be equipped with polished aluminum wheels, single front and dual rear, and of the same offset for interchangeability. Wheel size shall be 19.5 X 6.75 inches.

30.2 Tires shall be provided by the manufacturer and shall be Michelin or approved equal, 265/70R X 19.5" low-profile, tubeless, radial tires. All tire and wheel assemblies shall be dynamically balanced.

30.3 One (1) full-size spare tire and wheel per vehicle shall be provided and shall be interchangeable with the mounted wheels/tires.

31.0 ELECTRICAL/CHARGING SYSTEM

31.1 General:

31.1.1 The bus electrical control and wiring system shall be an I/O controls, DINEX G2 Multiplex System or approved equal. Versatility and future expansion of the system shall be provided for by expandable system architecture.

31.1.2 The system components shall be capable of performing reliable operation in an environment of between minus 40° C to plus 85° C while encountering mobile shock and vibrations. Each module shall be adequately shielded to prevent interference by EMI and radio frequency interference.

31.1.3 The components of the multiplex system shall be of modular design thereby providing for ease of replacement by field maintenance personnel. Each module shall be equipped with diagnostic LEDs that indicate input status, output status, and circuit integrity. These LEDs shall enable a rapid circuit diagnostic and verification of the load and wiring integrity. Each output of the module shall be capable of providing a current load of up to 7.5 amperes of continuous or twenty (20) amperes intermittent. Four (4) of the outputs shall be able to be tied together in pairs providing fifteen (15) amperes of continuous current. The internal control shall be a solid-state device, providing an extended-life service cycle. Non-self-resetting circuit breakers or fuses shall be provided to protect each individual circuit. A dedicated feedback point for each output shall be part of the system to provide capability of monitoring each isolated output load and fuse status via PDA or PC. The multiplex power source shall be isolated to avoid any ground noise.

31.1.4 The multiplex network system shall provide the Intelligent Key™ feature. The program for operating the bus shall be contained in the Main Bus Controller (MBC). A single downloading point shall be located on the bus for reprogramming. Modules with the

Intelligent Key™ feature shall be interchangeable on the bus and backward compatible with I/O controls, DINEX modules, that may be currently in use. Programmable time-delay functions and integrated-flasher capabilities shall be contained in the control module.

31.2 Power generation:

The alternator shall be an internally regulated Leece Neville twenty-four (24) volt, 200-amp alternator, or approved equal. The alternator shall be capable of supporting the electrical load of the bus with all accessories operating.

31.3 Wiring and terminals:

31.3.1 All power and ground wiring shall have double electrical insulation and shall conform to the specification requirements of SAE Recommended Practices J1127, J1128, and J1292. Double insulation shall be maintained as close to the junction box, electrical compartment, or terminals as possible.

31.3.2 Wiring shall be grouped, and easily identified, numbered, and color-coded with the exception of twisted pairs. Wiring harnesses shall not contain wires of different voltage classes unless all wires within the harness are insulated for the highest voltage present in the harness. Kinking, grounding at multiple points, stretching, and exceeding minimum bend radius shall be prevented.

31.3.3 Strain-relief fittings shall be used at points where wiring has the potential to be disturbed during normal maintenance. Grommets or other protective material shall be installed at points where wiring penetrates metal structures outside of electrical enclosures. Wiring supports shall be protective and nonconductive at areas of wire contact and shall not be damaged by heat, water, solvents, or chafing.

31.3.4 To the extent practicable, wiring shall not be located in environmentally exposed locations under the vehicle. Wiring and electrical equipment necessarily located under the vehicle shall be insulated from water, heat, corrosion, and mechanical damage. Where feasible, front-to-rear electrical harnesses shall be installed above the window line of the vehicle.

31.3.5 Wiring harnesses over five (5) feet long and containing at least five (5) wires shall include ten (10) percent (minimum one [1]) excess wires for spares. This does not apply to data links and/or communication cables. Wiring lengths shall allow end terminals to be replaced twice without pulling, stretching, or replacing the wire. Except for large wires such as battery cables, terminals shall be crimped according to connector manufacturer's recommendations for techniques and tools to the wiring and are soldered only if the wire is not stiffened above the terminal and no flux residue remains on the terminal. Battery cable connectors shall be crimped and properly sealed against moisture.

31.3.6 Terminals shall be crimped, corrosion-resistant, and full-ring type or interlocking lugs with insulating ferrules as appropriate for the application. When using pressure-type screw terminal strips, stranded wire only shall be used. Insulation clearance shall ensure that wires have a minimum of "visible clearance" and a maximum of two (2) times the conductor diameter or 1/16", whichever is less. When using shielded or

coaxial cable, upon stripping of the insulation, the metallic braid shall be free from frayed strands that can penetrate the insulation of the inner wires.

31.3.7 Ultra-sonic and T-splices may used with 7 AWG or smaller wire. When a T-splice is used, it shall meet these additional requirements: include a mechanical clamp in addition to solder on the splice; the wire supports no mechanical load in the area of the splice; and the wire is supported to prevent flexing.

31.3.8 For wiring harness connectors, pins shall be removable, crimp-contact type of the correct size, and rated for the wire being terminated. Supply-side terminations shall end in a socket or a pin. Unused pin positions shall be sealed with sealing plugs. Cable connectors shall be placed to provide adequate space for ease of removal and disconnection. Electrical connectors subjected to environmental exposure outside the passenger compartment shall be corrosion resistant and splash proof.

31.3.9 The main wiring harness shall be continuous and concealed, where feasible, within the frame or body panels for protection from the elements. Harnesses and wiring shall be secured by clamps or nylon saddle mounts to prevent chafing. Grommets of elastomeric material shall be provided at points where wiring penetrates metal structure.

31.3.10 Redundant grounds shall be used for all electrical equipment, except where it can be demonstrated that redundant grounds are not feasible or practical. One (1) ground is used for the bus body and framing. Electrical wiring or equipment shall not be located in an environment that will reduce the performance or shorten the life of the wiring or component.

31.3.11 Body and chassis electrical relays shall be of the type that automatically reset. Manually resettable breakers shall be used in manufacturer-recommended circuits for easier troubleshooting of electrical problems.

31.4 Junction boxes:

Relays, controllers, flashers, circuit breakers, and other electrical components shall be grouped according to voltage and mounted in accessible junction boxes. The boxes shall be sealed to prevent moisture from normal sources, including engine compartment cleaning. The components and circuits in each box shall be identified and their location permanently recorded on a drawing glued to or printed on the inside of the box cover or door. The drawing shall be protected from oil, grease, fuel, and abrasion. The front junction box shall be completely serviceable from the vestibule. A rear start-and-run control box shall be mounted in an accessible location in the engine compartment.

31.5 Electrical components:

Electrical components, including switches, relays, flashers, and circuit breakers, shall be heavy-duty designs. These components shall be long lasting and commercially available. Sockets of plug-in components shall be polarized where required for proper function, and the components shall be positively retained. Any manually resettable circuit breakers critical to the operation of the bus shall be mounted in a location convenient to the driver and shall provide visible indication of open circuits. Electric

motors shall be heavy-duty type. Electric motors shall be located for ease of replacement. Electronic circuit protection for the cranking motor shall be provided to prevent engaging of the engine if the engine is already running.

32.0 WINDOWS

32.1 A minimum of 8,000 square inches of window area, including driver's and door windows, shall be required on each side of the standard configuration bus.

32.2 All windows shall meet State and Federal safety regulations.

32.3 The windshield shall be front body contoured, two (2) piece ¼ inch thick, seventy (70) percent or greater light transmission density, laminated safety float glass. The windshield shall permit an operator's field of view as referenced in SAE Recommended Practice J1050. The vertically upward view shall be a minimum of 15°, measured above the horizontal and excluding any shaded band. The vertically downward view shall permit detection of an object 3½ feet high, no more than two (2) feet in front of the bus. The horizontal view shall be a minimum of 90° above the line of sight. Any binocular obscuration due to a center divider may be ignored when determining the 90° requirement, provided that the divider does not exceed a 3° angle in the operator's field of view. Windshield pillars shall not exceed 10° of binocular obscuration. The windshield shall be designed and installed to minimize external glare as well as reflections from inside the bus.

32.4 Windshields shall be glazed with two (2) piece black ozone-treated extruded lock and key rubber. The windshield shall be easily replaceable by removing zip-locks from the windshield retaining moldings. A bonded-in-place windshield shall not be used. The windshield glazing material shall have a ¼-inch or six (6) mm nominal thickness laminated safety glass conforming with the requirements of ANSI Z26.1, Test Grouping 1A, and the recommended practices defined in SAE J673. The glazing material shall have single density tint. The upper portion of the windshield above the operator's field of view shall have a dark, shaded band with a minimum luminous transmittance of six (6) percent when tested in accordance to ASTM D-1003.

32.5 The driver's roadside window shall be black extruded-aluminum full-height side-slider design. The forward section shall slide only. The rear section shall be fixed. The window when installed shall not produce wind noise at highway speeds. The glazing shall be ¼-inch laminate and tinted according to ANSI Z26.1 and SAE J673.

32.6 Passenger side windows shall be dark-tinted transit-style fully sliding windows. A minimum of two (2) push-out windows per side is required. Windows shall be equipped with latches, which can be easily reached and operated by an adult passenger. Sash shall not slide open or closed upon brake application. All side windows shall be easily replaceable without disturbing adjacent windows and shall be mounted so that flexing or vibration from engine operation or normal road excitation is not apparent. The windows shall be designed and constructed to enable a 3M mechanic to remove and replace two (2) windows in less than ten (10) minutes.

32.7 The body side windows shall be heavy-duty type anodized. The windows shall fit flush or nearly flush, or shall be of the overlay-type design. The windows shall be ¼ laminated with options for various configurations of transom and slide. The glazing

shall be replaceable without removing interior or exterior body components. The maximum solar energy transmittance shall be thirty-seven (37) percent and luminous transmittance shall be no less than sixteen (16) percent. Windows for destination signs shall not be tinted.

32.8 Upper and lower door windows shall be provided with AS-2 glass.

33.0 VISORS

An adjustable roller-type sunscreen shall be provided over the operator's windshield and the operator's side window. The sunscreen shall be capable of being lowered to the midpoint of the operator's window. Once lowered, the screen shall remain in the lowered position until returned to the stowed position by the operator.

34.0 DESTINATION SIGNS

34.1 An automatic electronic destination sign system, as provided by Twin Vision, Incorporated, or approved equal, shall be furnished on the front and on the right side near the front door. Display areas of destination signs shall be clearly visible in direct sunlight and/or at night. The sign system shall provide optimum visibility of the message display units for passengers and shall meet applicable ADA requirements. Destination signs shall be installed in such a manner as to facilitate easy access for replacement of the entire sign assembly, or components such as fluorescent lamps/LEDs and electronic control modules, from inside the bus. Lamps and associated parts shall be commercially available.

34.2 Destination messages, route designations, and public relations messages shall be independently selectable via a single Operator's Control Panel (OCP), which shall include a display monitor. The OCP display monitor readout shall show the exact information displayed on the destination signs. The OCP shall be conveniently located for the bus operator and mounted in such a manner that will not pose any safety hazard. The OCP shall utilize a durable weatherproof keypad with tactile feel for destination message control functions.

34.3 Applicable software shall be provided. Training will be conducted to ensure a sufficient level of proficiency on programming, data transfer, and uploading.

35.0 PASSENGER DOORS, FRONT AND REAR

35.1 Two (2) doorways shall be provided in the curbside of the bus for passenger ingress and egress. The front doorway shall be forward of the front wheels and located so that the operator will be able to collect or monitor the collection of fares. The rear doorway centerline shall be rearward of the point midway between the front door centerline and the rearmost seat back. Passenger doors and doorways shall comply with ADA requirements.

35.2 Front entrance door and rear side door shall be identical in design and function. Doors shall be inward glider type. The doors shall not extend beyond body exterior sidewall more than three (3) inches when open or closed. Doors shall be aluminum framed with tempered-glass panels. Each door panel shall be controlled by its own pneumatic cylinder for quiet and efficient operation and activated electrically by driver control.

Interior emergency manual control shall be located in the interior header panel above the door. Doors shall be easily adjusted for full opening, full closing, door speed, and door cushioning.

35.3 Doors shall open or close completely in not more than 3.5 seconds from the time of control actuation. Doors shall be operated by push-button controls, conveniently located and operable in a horizontal plane by the operator's left hand. The operation of this control shall be easily performed by location and touch. The front door shall remain in commanded state position even if power is removed or lost. The operator shall control operation of the passenger doors.

35.4 An exterior control to open the front door shall be provided.

35.5 To preclude movement of the bus, an accelerator interlock shall lock the accelerator in the closed position and a brake interlock shall engage the service brake system when the front or rear door control is activated. The braking effort shall be adjustable with hand tools. Rear doors shall not open until bus speed is below three (3) mph.

35.6 The front shall have a clear opening width no less than 34.25 inches and no less than forty-two (42) inches for the rear door. When open, the doors shall leave an opening no less than seventy-five (75) inches in height.

35.7 Structure of the doors, their attachments, inside and outside trim panels, and any mechanism exposed to the elements shall be corrosion resistant. Door panel construction shall be of corrosion-resistant metal or reinforced nonmetallic composite. The doors, when fully opened, shall provide a firm support and shall not be damaged if used as an assist by passengers during ingress or egress. The front leaves of the passenger doors shall overlap the rear leaves.

35.8 The front door panel glazing material shall have tempered-safety glass. Glazing material in the rear doorway door panels shall be the same material, thickness, and color as the front doors.

35.9 Exterior projection of the doors shall be minimized and shall not exceed three (3) inches during the opening or closing cycles or when doors are fully opened. Projection inside the bus shall not exceed twenty-nine (29) inches. The closing edge of each door panel shall have no less than two (2) inches of soft weather stripping. The doors, when closed, shall be effectively sealed and the hard surfaces of the doors shall be at least five (5) inches apart.

35.10 It shall be possible to open and close either passenger door when the bus loaded to GVWR is not knelt and parked with the tires touching an eight (8) inch-high curb on a street sloping toward the curb so that the street side wheels are five (5) inches higher than the right side wheels.

35.11 Closing door edge speed shall not exceed nineteen (19) inches per second. Power close rear doors shall be equipped with a sensitive edge or other obstruction sensing system such that if an obstruction is struck by a closing door edge, the doors will stop and/or reverse direction prior to imparting a ten (10) pound force on one (1) square inch of that obstruction. Whether or not the obstruction sensing system is present or functional, it shall be possible to withdraw a 1½-inch diameter cylinder from between

the center edges of a closed and locked door with an outward force not greater than thirty-five (35) pounds.

35.12 Door actuators shall be adjustable so that the door opening and closing speeds can be independently adjustable. Actuators and the complex door mechanism shall be concealed from passengers but shall be easily accessible for servicing. The door actuators shall be rebuildable.

35.13 In the event of an emergency, it shall be possible to open the doors by utilizing the door-control buttons above both the entrance and exit doors. In addition, the entrance door shall have a means on the exterior to open the door. The exit door emergency controls shall not be operable above three (3) mph.

36.0 LIGHTS AND REFLECTORS

36.1 All exterior and interior lights shall comply with the ADA requirements.

36.2 Exterior lights:

36.2.1 Lamps shall conform to FMVSS 108; Chapter 316, F.S.; Rule 14-90, F.A.C.; and SAE guidelines.

36.2.2 All exterior lights shall be twelve (12) volt negative ground, LED lamps designed to prevent entry and accumulation of moisture or dust, and each lamp shall be replaceable. Lights mounted on the engine compartment doors shall be limited to license plate illumination lamps. Lamps, lenses, and fixtures shall be interchangeable to the extent practicable. Visible and audible warning shall inform following vehicles or pedestrians of reverse operation.

36.2.3 Lamps at the front and rear passenger doorways shall comply with ADA requirements and shall activate only when the doors open. These lamps shall illuminate the street surface to a level of no less than one (1) foot-candle for a distance of three (3) feet outward from the outboard edge of the door threshold. The lights shall be positioned below the lower daylight opening of the windows and shall be shielded to protect passengers' eyes from glare.

36.2.4 Stop taillights shall be LED red combination lens approximately 4.25" X 5.25" in size, and horizontally mounted two (2) per side. An additional red stop lamp consisting of letters that spell "STOP," minimum four (4) inches, will be centered in the rear panel. An enhanced LED flashing stop lamp system will be installed consisting of four (4) amber lights (6.0 inches minimum) centered appropriately in the rear, two (2) above the rear window and two (2) below the rear window.

36.2.5 Backup lights shall be horizontally mounted, one (1) per side and with clear rectangular lens.

36.2.6 Directional signals shall be in compliance with FMVSS 108 and Subsection 316.234(2), F.S. Foot controlled directional switches shall be installed in a tapered steel left-hand foot box, one (1) each for the left and right directional lights.

36.2.7 Front directional lights shall be approximately 4" X 5", mounted horizontally one (1) on each side, with amber lights.

36.2.8 Side turn signals shall be provided at the front and rear.

36.2.9 Side marker and Interstate Commerce Commission marker lights shall be roof mounted, five (5) each amber front, and seven (7) each red rear.

36.2.10 Shall include hazard-warning feature as required by FMVSS 108, independent of the ignition switch.

36.3 Interior lights:

36.3.1 The interior lighting system shall provide a minimum fifteen (15) foot-candle illumination on a one (1) square foot plane at an angle of 45° from horizontal, centered thirty-three (33) inches above the floor and twenty-four (24) inches in front of the seat back at each seat position. Allowable average light level for the rear bench seats shall be seven (7) foot-candles. Floor surface in the aisles shall be a minimum of ten (10) foot-candles, vestibule area a minimum of four (4) foot-candles with the front doors open and a minimum of two (2) foot-candles with the front doors closed.

36.3.2 The light source shall be located to minimize windshield glare with distribution of the light focused primarily on the passengers' reading plane while casting sufficient light onto the advertising display. Fluorescent tubes shall be a maximum six (6) foot length, single-pin, T-12 type (with exception granted for extinguishing or dimming fixtures as noted below).

36.3.3 Lens material shall be white polycarbonate. Lenses shall be designed to effectively "mask" the fluorescent tube. Lens material shall not drip flaming onto seats if burned. Lenses shall be sealed to inhibit incursion of dust and insects yet are easily removable for service. If threaded fasteners are used, they must be held captive in the lens. Access panels shall be provided to allow servicing of components located behind light panels. The entire light fixture shall be hinged.

36.3.4 Individual ballast units shall be provided for each light fixture. Ballasts shall have a fireproof housing, minimum operating frequency of above audible range, reverse polarity protection, integrated circuit breaker/automatic thermal protection, and rebuildable.

36.3.5 When in the RUN and NITE/RUN mode, the first light module on each side of the coach shall automatically extinguish or dim when the front door is in the closed position and light when the door is opened. This shall be accomplished through use of ballast specifically designed to accomplish this function without diminished useful fluorescent tube life.

36.3.6 The light system shall be installed along the entire air conditioning duct.

36.3.7 The instrument panel and switch panel shall be indirectly lighted to prevent casting glare on the windshield.

36.3.8 The operator shall have a map light and a vestibule light. The dash lights shall be controlled via a rheostat to minimize glare.

36.3.9 Interior lighting, located ahead of the standee line, shall be controlled by the operator. The operator's work area shall be designed to minimize glare to the extent possible. Objects within and adjacent to this area shall be matte gray in color wherever possible to reduce the reflection of light onto the windshield. The use of polished metal and bright-colored surfaces within and adjacent to the operator's area shall be avoided. Such objects include dash panels, switches and controls, cowlings, windshield wipers and arms, barriers and modesty panels, fare stanchions, access panels and doors, fasteners, flooring, ventilation and heating ducting, window and door frames, and visors.

36.4 Service area lights:

Lights shall be provided in the engine compartment, where service may be required, to generally illuminate the area for night emergency repairs or adjustments. Lamp assemblies shall be provided in the engine compartment and shall be controlled automatically with the opening of the primary engine access door or by a switch located near the rear start controls in the engine compartment.

37.0 INSTRUMENTS AND GAUGES

37.1 All switches and controls necessary for the operation of the bus shall be conveniently located in the operator's area and shall provide for ease of operation. Switches and controls shall be essentially within the hand-reach envelope. Controls shall be located so that boarding passengers may not easily tamper with control settings. Accelerator and brake pedals shall be designed for ankle motion. Foot surfaces of the pedals shall be faced with wear-resistant, nonskid, replaceable material. Controls for engine operation shall be closely grouped within the operator's compartment. These controls shall include separate four (4) position master switch and ignition switch. The door control, kneel control, and master switch shall be in the most convenient operator locations. They shall be identifiable by shape, touch, and/or permanent markings. Turn signal controls, windshield wiper/washer controls, low/high-beam headlight control, and horn shall be mounted on a single stalk on the left side of the steering column. All panel-mounted switches and controls shall be marked with easily read identifiers and shall be replaceable, and the wiring at these controls shall be serviceable from the vestibule or the operator's seat. Switches, controls, and instruments shall be dust- and water-resistant.

37.2 The speedometer, air-pressure gauges, water-temperature gauge, fuel-pressure indicator, and certain indicator lights shall be located on the front cowl immediately ahead of the steering wheel. The steering wheel spokes or rim shall not obstruct the operator's vision of the instruments when the steering wheel is in the straight-ahead position. Illumination of the instruments shall be simultaneous with the marker lamps. Glare or reflection in the windshield, side window, or front door windows from the instruments, indicators, or other controls shall be minimized. Instruments and indicators shall be easily readable. Indicator lights immediately in front of the operator are identified in the following table:

Visual Indicator	Audible Alarm	Condition
Hazard	None	Four (4) Way Flashers Activated
High Beam	None	Headlamp High Beams Activated
Kneel	Buzzer	Suspension Kneeling System Activated
Left Turn Signal	None	Left Turn Signal Activated
Parking Brake	None	Parking Brake is Activated
Rear Door	None	Rear Passenger Door is not Closed and Locked
Right Turn Signal	None	Right Turn Signal Activated
Check Engine	None	An Engine Fault has Occurred
Wait to Start	None	Inlet Manifold is Heating
Low Fuel	None	Fuel Level is Low
Engine Stop	Buzzer	Priority Engine Fault Detected
Retarder Warning	None	Retarder is in Use
Ride Height Warning	None	Vehicle is in Knelt Position and not at Correct Ride Height
Stop Request	Chime	Passenger Stop Request has Been Activated
ABS	None	ABS System Malfunction
Alternator Fail	None	Loss of Alternator Output
Hot Engine	Buzzer	Excessive Engine Coolant Temperature
Low Air	Buzzer	Insufficient Air Pressure in Either Primary or Secondary

37.3 The instrument panel shall include an electronic speedometer indicating no more than eighty (80) mph. The speedometer shall be a rotating pointer type. The speedometer shall be equipped with an odometer with a capacity reading no less than 999,999 miles.

37.4 The instrument panel shall also include air brake reservoir pressure gauges. The instrument panel and wiring shall be easily accessible for service from the operator's seat or top of the panel. Wiring shall have sufficient length and be routed to permit service without stretching or chafing the wires.

38.0 ON-BOARD DIAGNOSTICS

The bus shall be equipped with an on-board diagnostic system that will indicate conditions that require immediate action by the operator to avoid an unsafe condition or prevent further damage to the bus. This diagnostic system shall have visual and audible indicators. All indicators shall have a method of momentarily testing the operation of the lamp.

39.0 WINDSHIELD WIPERS/WASHER

39.1 Two (2) speed heavy-duty electric wipers shall be provided, one (1) each side with single control.

39.2 Wiper arms shall be parallelogram type bottom mounted. The fastener that secures the wiper arm to the drive mechanism shall be corrosion resistant. Wiper blades shall be approximately 27.5 inches each in length. Blades are to be self parking. Windshield wiper motors and mechanisms shall be easily accessible for repairs or service from outside the bus, and shall be removable as complete units. The wiper blade shall not lift from the windshield surface at highway speeds. Intermittent wiper system shall be variable speed control allowing timed intermittent windshield cleaning in light rain and/or fog.

39.3 The windshield washer system shall deposit washing fluid on the windshield and, when used with the wipers, shall evenly wet the wiped area.

39.4 The washer shall be an electric pump with a minimum two (2) gallon washer reservoir supplying nozzles located on the wiper-wet arms and shall be easily filled from an access panel outside the bus. All reservoir lines, pumps, and fittings shall be corrosion resistant. The reservoir itself will be translucent so as to easily determine the fluid level.

40.0 SEATS, PASSENGER

40.1 The passenger seating arrangement in the bus shall be such that seating capacity is maximized and in compliance to the following requirements. The procuring agency recognizes that ramp location, foot room, hip-to-knee room, doorway type and width, seat construction, floor-level type, seat-spacing requirements, etc., ultimately affect seating capacity and layout.

40.2 Passenger seats shall be Freedman Citi-Seats, or approved equal.

40.3 All aisle seats shall have top grab rails. Grab rails must be padded and securely attached to a welded seat-frame structure. The grab rails must meet White Book test requirements.

40.4 The manufacturer shall include with his bid package, a dimensional layout of the seating arrangement, with two (2) wheelchair forward facing positions, that the bidder proposes to supply. A choice of upholstery material and color will be provided with the bid.

41.0 SEAT, DRIVER

The driver’s seat shall be USSC 9001 ALX air-operated seat, or approved equal. A strong storage "fish net" bag will be added to the back of the driver's seat and be large enough for driver items; i.e., lunch, clipboard, etc, to be stored in a secure manner and to prevent loose objects from potentially endangering driver or passengers.

42.0 MIRRORS

42.1 Two (2) exterior rearview side mounted B & R Manufacturing, corrosion resistant mirrors, or approved equal, shall be provided, one (1) at the driver's left side and one (1) opposite on the right side. They shall have a minimum of sixty (60) square inches of reflective area. They shall be mounted out of the driver's normal driving line of vision to prevent "blind spots." The right-hand exterior mirror shall be mounted so that the lowermost point is eighty (80) inches above the ground. The operator shall be able to adjust both the driver and curbside mirrors remotely while seated in the driving position. The controls for remote positioning of the mirrors shall be a single switch per mirror located on the side console.

42.2 Mirrors shall be provided for the operator to observe passengers throughout the bus without leaving his seat and without shoulder movement. With a full standee-load, including standees in the vestibule, the operator shall be able to observe passengers in the front/entrance and rear/exit areas, anywhere in the aisle, and in the rear seats. Inside mirrors shall not be in the line of sight to the right outside mirror. Interior mirrors shall include a 4" X 16" rectangular mirror mounted to the windshield header.

42.3 All mirror mountings shall be sufficiently rigid to prevent viewing distortion due to vibration. The areas where mirror mountings are attached shall be reinforced to preclude cracking or rusting. Exterior mirror mounts shall permit moving out of position (swing-out style) to prevent mirror damage from automatic bus washers.

43.0 PASSENGER ASSISTS

43.1 Passenger assists shall be convenient in location, shape, and size.

43.2 Passenger assists shall be designed to minimize catching or snagging of clothes or personal items, and shall be capable of passing the National Highway Transportation Safety Act Drawstring Test.

43.3 Any joints in the assist structure shall be underneath supporting brackets and securely clamped to prevent passengers from moving or twisting the assists. Passenger assists shall be designed to minimize glare in the operator's area to the extent possible. Assists shall withstand a force of 300 pounds applied over a twelve (12) inch linear dimension in any direction normal to the assist without permanent visible deformation. All passenger assist components, including brackets, clamps, screw heads, and other fasteners used on the passenger assists, shall be designed to eliminate pinching, snagging, and cutting hazards and free from burrs or rough edges.

43.4 Front doors, or the entry area, shall be fitted with ADA-compliant assists. Assists shall be as far outward as practicable, but shall be located no further inboard than six (6) inches from the outside edge of the entrance step and shall be easily grasped by a 5th-percentile female boarding from street level. Door assists shall be functionally continuous with the horizontal front passenger assist, and the vertical assist and the assists on the wheel housing or on the front modesty panel.

43.5 Passenger assists in the form of full-grip, vertical stanchions, or handholds shall be provided for the safety of standees and for ingress/egress. Passenger assists shall be convenient in location, shape, and size for both the 95th-percentile male and the 5th-

percentile female standee. Starting from the entrance door and moving anywhere in the bus and out the exit door, a vertical assist shall be provided either as the vertical portion of seat back assist or as a separate item so that a 5th-percentile female passenger may easily move from one (1) assist to another using one (1) hand and the other without losing support. Excluding those mounted on the seats and doors, the assists shall have a cross-sectional diameter between 1¼ and 1½ inches or shall provide an equivalent gripping surface with no corner radii less than ¼ inch. Fitting ells, tees, flanges, and bolts shall be stainless steel. Ceiling grab-rail support brackets shall be stainless steel or anodized-cast aluminum. All passenger assists shall permit a full handgrip with no less than 1½ inches of knuckle clearance around the assist. An impact resulting in a one (1) foot intrusion shall not produce sharp edges, loose rails, or other potentially dangerous conditions associated with a lack of structural integrity of the assist. All areas of the passenger assists that are handled by passengers, including functional components used as passenger assists, shall be of anodized aluminum or stainless steel. Door-mounted passenger assists shall be of anodized aluminum, stainless steel, or powder-coated metal. Connecting tees and angles may be powder-coated metal castings. The assists shall be located no farther inboard than six (6) inches from the outside edge of the rear doorway.

43.6 Except forward of the standee line and at the rear door, a continuous, full-grip, overhead assist shall be provided. This assist shall be convenient to standees anywhere in the bus and shall be located over the center of the aisle seating position of the transverse seats. The assist shall be no less than seventy (70) inches above the floor. Ceiling grab rails shall terminate into vertical stanchions or turn up into the ceiling. No exposed ends will be accepted. Overhead assists shall simultaneously support 150 pounds on any twelve (12) inch length. No more than five (5) percent of the full-grip feature shall be lost due to assist supports.

43.7 Unless passenger seating is provided on top of the wheel housing, passenger assists shall be mounted around the exposed sides of the wheel housings, which shall also be designed to prevent passengers from sitting on wheel housings. Such passenger assists shall also effectively retain items, such as bags and luggage, placed on top of wheel housing.

43.8 Sturdy divider panels constructed of durable, unpainted, corrosion-resistant material complimenting the interior trim shall be provided at the rear of both step wells. Modesty panels may be installed at the sides of longitudinal seats when the required armrests are integral. These dividers shall be mounted on the sidewall and shall project toward the aisle no farther than passenger knee projection in longitudinal seats or the aisle side of the transverse seats. Modesty panels shall extend no higher than the lower daylight opening of the side windows and those forward of transverse seats shall extend downward to a level between 1½ inches and one (1) inch above the floor. Panels forward of longitudinal seats shall extend to below the level of the seat cushion. Dividers positioned at the doorways shall provide no less than a 2½-inch clearance between the modesty panel and the opened door to protect passengers from being pinched. The modesty panel and its mounting shall withstand a static force of 250 pounds applied to a four (4) inch by four (4) inch area in the center of the panel without permanent visible deformation. Front modesty panels shall be provided for each side of the coach.

43.9 A driver barrier shall be provided made of clear plexiglas. The barrier shall minimize glare and reflections in the windshield directly in front of the barrier from interior lighting during night operation. This barrier shall allow for the safe, sturdy mounting of a route schedules holder and/or an information display.

44.0 PASSENGER COMPARTMENT HVAC

44.1 The heating, ventilation and air conditioning (HVAC) climate-control system shall be Thermo King LRT1, or approved equal, roof-mounted, fully ducted unit with an air conditioning system capacity of 95,000 Btu/hr. and a heating system capacity of 116,000 Btu/hr. equipped with an IntelligAIRE computerized control system.

44.2 The compressor shall be a Model X430, or approved equal, utilizing Type R-134a refrigerant.

44.3 The cooling mode of the interior climate-control system shall introduce air into the bus at or near the ceiling height at a minimum rate of twenty-five (25) cfm per passenger based on the standard configuration bus carrying a number of passengers equal to 150 percent of the seated load. Airflow shall be evenly distributed throughout the bus with air velocity not exceeding 100 feet per minute on any passenger. The ventilating mode shall provide air at a minimum flow rate of twenty (20) cfm per passenger.

44.4 Airflow may be reduced to fifteen (15) cfm per passenger (150 percent of seated load) when operating in the heating mode. The fans shall not activate until the heating element has warmed sufficiently to ensure at least 70° F air outlet temperature. The heating air outlet temperature shall not exceed 120° F under any normal operating conditions.

45.0 OPERATOR'S AREA HVAC

45.1 The driver's area Bergstrom interior climate-control system shall deliver at least 100 cfm of air to the operator's area when operating in the ventilating and cooling modes. Adjustable nozzles shall permit variable distribution or shutdown of the airflow.

45.2 Airflow in the heating mode shall be reduced proportionally to the reduction of airflow into the passenger area. The windshield defroster unit shall have the capability of diverting heated air to the operator's feet and legs. The defroster or interior climate control system shall maintain visibility through the operator's side window.

46.0 HVAC CONTROLS AND TEMPERATURE UNIFORMITY

46.1 The air conditioning portion of the HVAC system shall be capable of reducing the passenger compartment temperature from 110° to 90° F in less than twenty (20) minutes after engine start-up. Engine temperature shall remain within the normal operating range at the time of start-up of the cool-down test, and the engine speed shall be limited to the fast-idle speed of the engine. During the cool-down period, the refrigerant pressure shall not exceed safe high-side pressures and the condenser discharge air temperature, measured six (6) inches from the surface of the coil, shall be less than 45° F above the condenser inlet air temperature. There shall be no passengers on board, and the doors and windows shall be closed.

46.2 The climate-control system shall be fully automatic and control the interior average temperature to within ±2° F of specified temperature control set point. The climate-control system shall have the provision to allow the driver to adjust the temperature control set point at a minimum of between 68° and 72° F. From then on, all interior climate-control system requirements shall be attained automatically, unless re-adjusted by driver.

46.3 The operator shall have full control over the defroster and operator's heater. The operator shall be able to adjust the temperature in his/her area through air distribution and fans. The interior climate-control system shall switch automatically to the ventilating mode if the refrigerant compressor or condenser fan fails.

47.0 AIR FLOW/FILTRATION

47.1 The cooling mode of the interior climate-control system shall introduce air into the bus at or near the ceiling height at a minimum rate of twenty-five (25) cfm per passenger based on the standard configuration bus carrying a number of passengers equal to 150 percent of the seated load. This air shall be composed of no less than twenty (20) percent outside air. Airflow shall be evenly distributed throughout the bus with air velocity not exceeding 100 feet per minute on any passenger. The ventilating mode shall provide outside air at a minimum flow rate of twenty (20) cfm per passenger.

47.2 Airflow may be reduced to fifteen (15) cfm per passenger (150 percent of seated load) when operating in the heating mode. Heated air introduced into the bus shall contain no less than twenty (20) percent outside air. The fans shall not activate until the heating element has warmed sufficiently to assure at least 70° F air outlet temperature. The heating air outlet temperature shall not exceed 100° F under any normal operating conditions. Outside airflow may be cut off during initial warm-up, provided no manual manipulation is required.

47.3 Air shall be filtered before discharge into the passenger compartment. The filter shall meet the ANSI/ASHRAE 52.1 requirement. All filters shall be easily accessible for replacement and or cleaning.

48.0 ROOF VENTS

One (1) Transpec, or approved equal, ventilator shall be provided in the roof of the bus approximately over the rear axle. The ventilator shall be easily opened and closed manually by a 50th percentile female. When open with the bus in motion, this ventilator shall provide fresh air inside the bus. The ventilator shall cover an opening area no less than 425 square inches and shall be capable of being positioned as a scoop with either the leading or trailing edge open no less than four (4) inches or with all four (4) edges raised simultaneously to a height of no less than 3½ inches. An escape hatch shall be incorporated into the roof ventilator. Roof ventilator(s) shall be sealed to prevent entry of water when closed.

49.0 EXTERIOR FINISH

49.1 All exterior surfaces shall be smooth and free of wrinkles and dents. Exterior painted surfaces shall be properly prepared as required by the paint system supplier, prior to application of paint to ensure a proper bond between the basic surface and successive

coats of original paint for the service life of the bus. Drilled holes and cutouts in exterior surfaces shall be made prior to cleaning, priming, and painting to prevent corrosion. The bus shall be completely painted prior to installation of exterior lights, mirrors, and other items, which are applied to the exterior of the bus.

49.2 BASF or approved equal paint shall be applied smoothly and evenly with the finished surface free of dirt and the following other imperfections:

49.2.1 Blisters or bubbles appearing in the topcoat film.

49.2.2 Chips, scratches, or gouges of the surface finish.

49.2.3 Cracks in the paint film.

49.2.4 Craters where paint failed to cover due to surface contamination.

49.2.5 Over spray.

49.2.6 Peeling.

49.2.7 Runs or sags from excessive flow and failure to adhere uniformly to the surface.

49.2.8 Chemical stains and water spots.

49.3 To the degree consistent with industry standards for commercial vehicle finishes, painted surfaces shall have gloss and orange peel shall be minimized. All exterior finished surfaces shall be impervious to diesel fuel, gasoline, and commercial cleaning agents. Finished surfaces shall resist damage by controlled applications of commonly used graffiti-removing chemicals. Colors and paint schemes shall be specified by procuring agency.

49.4 <u>The paint scheme and/or high-quality reflective vinyl colors, design, and lettering shall be prior approved by PCPT staff and completed prior to delivery of buses.</u>

49.5 Signs/decals/appliqués shall be provided in compliance with DOT and ADA requirements.

50.0 <u>ACCESSIBILITY SYSTEM</u>

50.1 General:

The design and construction of the bus shall be in accordance with all requirements defined in 49 C.F.R. Part 38, Subpart B: ADA Accessibility Specifications for Transportation Vehicles - Buses, Vans, and Systems. Space and body structural provisions shall be provided at the front door of the bus to accommodate the wheelchair loading system.

50.2 Loading system:

50.2.1 An automatically controlled, power-operated ramp system compliant to requirements defined in 49 C.F.R. Part 38, Subpart B, § 38.23.c, shall provide ingress and egress

quickly, safely, and comfortably, both in forward and rearward directions for a passenger in a wheelchair from a level street or curb. The wheelchair loading system shall be located at the front door.

50.2.2 When the system is not in use, the passageway shall appear normal. In the stored position of the ramp, no tripping hazards shall be presented and any resulting gaps shall be minimized. The controls shall be simple to operate with no complex phasing operations required, and the loading system operation shall be under the surveillance and complete control of the operator. The bus shall be prevented from moving during the loading or unloading cycle by a throttle and brake interlock system. The wheelchair loading system shall not present a hazard, nor inconvenience any passenger. The loading system shall be inhibited from retracting or folding when a passenger is on the ramp/platform. A passenger departing or boarding via the ramp shall be able to easily obtain support by grasping the passenger assist located on the doors or other assists provided for this purpose. The platform shall be designed to protect the ramp from damage and persons on the sidewalk from injury during the extension/retraction or lowering/raising phases of operation. The loading platform shall be covered with a replaceable or renewable, nonskid material and shall be fitted with devices to prevent the wheelchair from rolling off the sides during loading or unloading. Deployment or storage of the ramp shall require no more than fifteen (15) seconds. A manual override system shall permit unloading a wheelchair and storing the device in the event of a primary power failure.

50.3 Wheelchair accommodations:

50.3.1 The retractor wheelchair-securement system shall limit the movement of an occupied wheelchair to two (2) inches or less in any direction under normal vehicle operation.

50.3.2 Two (2) forward-facing locations, as close to the wheelchair loading system as practical, shall provide parking space and securement system compliance with ADA requirements for a passenger in a wheelchair.

50.3.3 The retractor wheelchair securement shall comply with the following requirements: SAE J2249, Wheelchair Tie-down and Occupant Restraint Systems for Use in Motor Vehicles (thirty [30] mph/twenty [20] G impact test criteria); 49 C.F.R. Part 38, Americans with Disabilities Act (ADA); CSA Z605, Mobility Aid Securement and Occupant Restraint Systems for Motor Vehicles (thirty [30] mph/twenty [20] G impact test criteria); ISO 10542 (proposed), Wheelchair Tie-down and Occupant Restraint Systems for Use in Motor Vehicles (thirty [30] mph/twenty [20] G impact test criteria).

50.3.4 The retractors shall be heavy duty with heat-treated and plated components with a minimum of twenty-four (24) ratchet teeth in a metal housing. The retractor kit shall include a minimum of four (4) retractors with pivot points for securing the wheelchair.

50.3.5 The wheelchair securement system shall be equipped with Sure-Lok Solo System, or approved equal.

50.4 Interior circulation:

Maneuvering room inside the bus shall accommodate easy travel for a passenger in a wheelchair from the loading device through the bus to the designated parking area, and

back out. No portion of the wheelchair or its occupant shall protrude into the normal aisle of the bus when parked in the designated parking space(s). As a guide, no width dimension should be less than 34.2 inches. Areas requiring 90° turns of wheelchairs should have a clearance arc dimension no less than forty-five (45) inches and in the parking area where 180° turns are expected, space should be clear in a full sixty (60) inch-diameter circle. A vertical clearance of twelve (12) inches above the floor surface should be provided on the outside of turning areas for the wheelchair footrest.

50.5 Passenger information:

50.5.1 ADA priority seating signs as required shall be provided to identify the seats designated for passengers with disabilities.

50.5.2 Requirements for a public information system in accordance with ADA regulations shall be provided.

50.5.3 Requirements for exterior destination signs in accordance with ADA regulations shall be provided.

51.0 TOWING

Towing devices shall be provided on each end of the bus. Towing devices shall accommodate flat-bedding or flat-towing. The rear towing devices shall permit towing of the bus for a short distance, such as in cases of an emergency, to allow access to provisions for front towing of bus.

52.0 JACKING

It shall be possible to safely jack up the bus at curb weight, with a common bottle or floor jack with or without special adapter, when a tire or dual set is completely flat and the bus is on a level, hard surface, without crawling under any portion of the bus. Jacking from a single point shall permit raising the bus sufficiently high to remove and reinstall a wheel and tire assembly. Jacking pads located on the lower structure near the wheels shall permit easy and safe jacking with the flat tire or dual set on a six (6) inch high run up block not wider than a single tire. The bus shall withstand such jacking at any one (1) or any combination of wheel locations without permanent deformation or damage. Jacking points shall be defined and illustrated in the Operator's Manual accompanying each bus.

53.0 HOISTING

The rear axle and the lower structure cross tube, aft of the front suspension, shall accommodate the lifting pads of a two (2) post hoist system. Jacking plates will support the bus on jack stands independent of the hoist.

54.0 SAFETY EQUIPMENT

54.1 The manufacturer shall equip each bus with the following. These items will be securely mounted in an easily accessible location for quick access by the driver.

54.1.1 One (1) first-aid kit, OSHA approved, sixteen (16) unit minimum size.

54.1.2 One (1) fire extinguisher, five (5) pound rechargeable, dry chemical or carbon dioxide having an ABC rating, fully charged, and bearing the label of Underwriter's Laboratory.

54.1.3 Three (3) warning triangles, reflective, collapsible-type, stored in secure container.

55.0 MISCELLANEOUS

55.1 Bicycle rack, Sportsworks Model DL3 Trilogy, Part 100546, or an approved equal, will be installed with the appropriate manufactured mounting brackets to ensure proper and secure mounting.

55.2 Provisions shall be made to install a passenger stop request system consisting of a pull cord running the length of the coach on both sides, a chime re-settable by the front door opening and a lighted "Stop Requested" sign mounted in the front facing the passenger area. Separate signaling systems shall be used for the wheelchair positions when so equipped. The passenger signal system shall comply with C.F.R., Part 38, ADA.

55.3 A decal showing the bus height, length, and width will be affixed in a position that can be easily viewed by the driver from a seated position in the driver's seat.

55.4 A public address system, Mobilepage, or approved equal, shall be installed on each bus. The system shall have a minimum of six (6) internal speakers spaced and installed to provide balanced audio throughout the bus. The system shall also have one (1) waterproof external speaker installed in close proximity to the front entrance door to allow waiting passengers to hear destination announcements made by the driver. The internal speakers and the external speaker shall have separate volume controls.

55.5 ***Digital, programmable reader securely attached behind and above the driver for passenger notes and information. Must be able to be clearly read from the farthest rear seat. System must be activated when bus is started. Applicable software shall be provided. Training will be conducted to ensure a sufficient level of proficiency on programming, data transfer, and uploading***

55.6 Overhead standard advertising brackets on each side of bus interior above passenger windows will be provided.

55.7 The vendor will install the schedule/information display, other document/flyer holders, manual farebox, counter, and passenger information signs as supplied by the PCPT.

55.8 The vendor will install the schedule/information display holders/units, manual or electronic farebox, passenger counter, security camera, and other signage or accessories as supplied by the PCPT.

56.0 MOBILE RADIO ACCOMMODATION

56.1 The radio mounting area will have a minimum clear area of 14" X 22" and four (4) inches depth for installation, removal, and servicing of the radio unit. The power wiring requirements will be the same as for the radio compartment. Must be easily accessible, in the proximity of the driver's area, but not in the passenger's area.

56.2 A No. 8 red lead from the battery disconnect switch will run to the compartment to provide power for the radio transmitter. There will be a forty (40) amp fuse or circuit breaker in the red lead located as close as possible to the disconnect switch. A No. 8 black lead to the chassis ground or a solid vehicle ground point within twenty-four (24) inches of the compartment will be provided.

56.3 There will be a solid mounting point for the control head and microphone located within the reach of the driver. A cable patch of adequate size, two (2) inches diameter minimum, from the control head mounting point to the radio compartment point will be integrated into the vehicle design. This precludes difficult and often unsightly modification as a result of radio installation.

56.4 An antenna and coax-mounting compartment will be placed half way between the centerline and the driver side of the vehicle. The compartment will contain a "ground plate" with minimum dimensions of two (2) inches in diameter. A coax cable path will allow routing to the radio compartment. A 4" X 4" access door or panel will be installed below the antenna mount to allow access to the underside of the mount from the vehicle interior.

57.0 MANUALS REQUIRED

57.1 One (1) complete set of manuals shall be provided with each bus. The specific manuals listed below must be provided:

57.1.1 Operator's Manual.

57.1.2 Engine Maintenance Manual.

57.1.3 Transmission Maintenance Manual.

57.1.4 Air Conditioner Maintenance Manual.

57.1.5 Heater Maintenance Manual.

57.1.6 Pneumatic System Maintenance Manual.

57.1.7 Complete as-built electrical schematics.

57.1.8 Body Maintenance Manual.

57.1.9 Engine parts list.

57.1.10 Transmission parts list.

57.1.11 Air conditioner parts list.

57.1.12 Chassis maintenance.

57.1.13 Chassis parts list.

57.1.14 Drive train parts list.

57.1.15 Radio Parts and Maintenance Manual,

57.1.16 All warranty documentation.

57.2 Any other drawings, schematics, and other necessary prints of the unit are to be provided. All information necessary to perform maintenance and trouble shooting of this unit shall be provided.

SUPPLEMENT 1

SUPPLEMENTAL BID REQUIREMENTS

1.0 WARRANTIES

1.1 The bidder must describe his/her complete policy on warranty provisions covering all equipment, items, components, and/or performance of service included in the specifications, both on labor and material along with a method of adjustment.

1.2 The bidder shall describe the extended warranty options applicable to the proposal and available to the purchaser. The bidder shall provide a separate price quote on the bid proposal form for each of these options. The bid price for the extended warranty will **NOT** be considered in determining the successful bidder.

2.0 DELIVERY

Delivery shall be completed within 180 days after the bid award. Hours of delivery shall be mutually agreed between the successful bidder and the purchaser. The successful bidder shall assume all cost and responsibility incident to said delivery to:

Pasco County Government Center
D&E Maintenance Garage
7530 Little Road
New Port Richey, Florida 34654

3.0 PARTS AND MANUALS

Any special and necessary tools, equipment, and programs will be listed and proposed with this system. The cost of each item will also be identified.

4.0 FEDERAL TRANSIT ADMINISTRATION BID PROTEST POLICY

All bidders associated with this procurement are hereby advised that the current FTA bid protest policy is stated in FTA Circular 4220.1D. A copy of this policy will be provided upon request.

5.0 DEBARMENT/SUSPENSION

The bidder must certify that its organization meets the criteria listed in the attached certification regarding debarment, suspension, and other responsibility matters.

6.0 DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

This procurement is subject to the provisions of 49 C.F.R. Section 23.67. Accordingly, the bidder must certify that its organization satisfies/will comply with the requirements listed in the attached applicable certification regarding Disadvantaged Business Enterprise program.

7.0 RESTRICTIONS ON LOBBYING

Compliance with P.L. 101-121, Section 319, Restrictions on Lobbying, is required for recipients of federal funds and shall, in turn, be imposed on those potential successful bidders as a provision to this bid solicitation. The bidder must certify that its organization satisfies/will comply with the requirements listed in the attached applicable certification regarding restrictions on lobbying.

8.0 BUY AMERICA PROVISIONS

8.1 This procurement is subject to the FTA Buy America Requirements in 49 C.F.R. Part 661. The attached Buy America Certificates must be completed and submitted with the bid. A bid that does not include the certificates will be considered nonresponsive. The bidder may seek a waiver to this provision if grounds for the waiver exist.

8.2 General Buy America Requirements for rolling stock include:

8.2.1 The cost of components that are produced in the United States must exceed sixty (60) percent of the cost of all components.

8.2.2 Fifty (50) percent of the cost of a component's subcomponents must be of United States origin.

8.2.3 Final assembly must take place in the United States.

9.0 PREAWARD AND POST-DELIVERY AUDIT REQUIREMENTS

9.1 This procurement is subject to the FTA preaward and post-delivery audit requirements as required in C.F.R. Part 663. Required certificates, per attached formats and documentation as listed below, must be completed and submitted with the bid. A bid that does not include the required certificates and documentation will be considered nonresponsive.

9.2 Preaward requirements:

9.2.1 The bidder will complete and submit a Preaward Purchaser's Requirements Certification, per attached format.

9.2.2 The bidder will complete and submit a manufacturer's Federal Motor Vehicle Safety Certification, per attached format.

9.3 The bidder will ensure documentation is provided by the proposed manufacturer that lists:

9.3.1 Component and subcomponent parts of the rolling stock to be purchased, identified by the manufacturer of the parts, their country of origin and costs; and

9.3.2 The location of the final assembly point for the rolling stock, including a description of the activities that will take place at the final assembly point, and the cost of final assembly.

10.0 NEW BUS TESTING CERTIFICATION

Bids submitted under this solicitation will be required to comply with the FTA regulations pertinent to new vehicle testing requirements (49 C.F.R. 655). New models and modified vehicles as defined by the regulation shall be certified to have been tested in accordance with the applicable regulations. Bidders not certifying compliance with this requirement may be considered nonresponsive. Bidders will be required to submit test results as accomplished on a model comparable to the unit(s) delivered under this solicitation as a part of their "Bid Package."

11.0 BID DOCUMENTS REQUIRED

The documents listed below must be signed and attached to the bid package:

11.1 Bid Proposal.

11.2 "Statement of No Bid" (if applicable).

11.3 Debarment/suspension certification.

11.4 Disadvantaged business enterprise certification.

11.5 Certification of restrictions on lobbying.

11.6 Buy America certification.

11.7 Applicable preaward/post-Award certifications.

11.8 New bus testing certification.

SUPPLEMENTAL BID FORMS/CERTIFICATIONS FOLLOW

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS – PRIMARY COVERED TRANSACTIONS

(Preaward Certification - Must be completed by all bidders/proposers to be responsive)

The bidder, _____, certifies to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statement, or receiving stolen property;

3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in Paragraph 2 of this certification; and

4. Have not within a three-year period preceding this proposal had one or more public transaction (Federal, State or local) terminated for cause or default.

Where the primary participant/bidder is unable to certify to any of the statements in this certification, such participant shall attach an explanation to this proposal.

THE PRIMARY PARTICIPANT/BIDDER _____, CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND UNDERSTANDS THAT THE PROVISIONS OF 31 U.S.C. § 3801 ET SEQ. ARE APPLICABLE THERETO.

_____ _____
Signature of Authorized Organization Representative Date

_____ _____
Printed/Typed Name and Title - Authorized Official Witness Signature

_____
Organization/Company Name

DISADVANTAGED BUSINESS ENTERPRISE CERTIFICATION

(Preaward Certification - Must be completed by all bidders/proposers to be responsive)

It is the policy of the United States Department of Transportation, the Florida Department of Transportation, and the Pasco County Board of County Commissioners that disadvantaged business enterprises as defined in 49 C.F.R. Part 23 shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal funds under this agreement.

The bidder hereby certifies that it will comply with the requirements of 49 C.F.R. Part 23.

_____ _____

Signature of Authorized Organization Representative Date

_____

Witness Signature

_____

Printed/Typed Name and Title - Authorized Official

_____

Organization/Company Name

CERTIFICATION OF
RESTRICTIONS ON LOBBYING

(Preaward Certification - Must be completed by all bidders/proposers to be responsive)

I, _____
(Name and Title of Authorized Officer)

hereby certify on behalf of _____ that:
(Name of Organization)

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan or cooperative agreement, the undersigned shall complete and submit a Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3. The undersigned shall require that the language of this certification is a material representation of fact upon with reliance is placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000.00 and not more than $100,000.00 for each such failure.

_____ _____
Signature of Authorized Organization Representative Date

BUY AMERICA CERTIFICATION

(Preaward Certification - Must be completed by all bidders/proposers to be responsive)

The bidder will certify one of the following applicable statements:

The bidder hereby certifies that it will comply with the requirements of Section 165(a) or (b)(3) of the Surface Transportation Assistance Act of 1982, as amended, and the regulations of 49 C.F.R. 661.11.

_____ _____

Signature of Authorized Organization Representative Date

_____

Printed/Typed Name and Title - Authorized Official

_____

Organization/Company

The bidder hereby certifies that it cannot comply with the requirements of section 165(b)(3) of the Surface Transportation Assistance Act of 1982, as amended, but may qualify for an exception to the requirement consistent with section 165(b)(2) or (b)(4) of the Surface Transportation Assistance Act, as amended, and regulations in 49 C.F.R. 661.7.

_____ _____

Signature of Authorized Organization Representative Date

_____

Printed/Typed Name and Title - Authorized Official

_____

Organization/Company

General Requirements for Manufactured and Steel Products:

1. Manufactured Products:

    a. All of the manufacturing processes for the product must take place in the United States.

    b. All items or materials used in the product must be of United States origin.

2. Steel:

    a. All steel manufacturing processes must take place in the United States, except metallurgical processes involving refinement of steel additives.

    b. The steel requirements apply to all steel items including, but not limited to, structural steel, running rail, and contact.

PREAWARD PURCHASER'S REQUIREMENTS CERTIFICATION

(Preaward Certification - Must be completed by all bidders/proposers to be responsive)

In accordance with 49 C.F.R., Part 663, Section 663.27, _____, certifies that:
(Proposed Manufacturer)

1. The rolling stock, which the recipient is contracting for, is the same product as described in the purchaser's solicitation specification; and

2. The proposed manufacturer is a responsible manufacturer with the capability to produce a vehicle that meets the recipient's specification set forth in the recipient's solicitation.

3. Documentation that substantiates Items 1 and 2 of this Certification will be provided upon request from the Purchaser or the Federal Transit Administration.

_____ _____
Signature of Authorized Organization Representative Date

_____
Printed/Typed Name and Title - Authorized Official

_____
Organization/Company

CERTIFICATION OF COMPLIANCE WITH OR INAPPLICABILITY OF FEDERAL MOTOR VEHICLE SAFETY STANDARDS

(Preaward Certification - Must be completed by all bidders/proposers to be responsive)

The bidder will certify one of the following applicable statements:

The _____, certifies that the rolling stock, for which
(Proposed Manufacturer)
the purchaser has specified in Bid Number _____, is subject to the Federal Motor Vehicle Safety Standards issued by the National Highway Traffic Safety Administration in Part 571 of this title and complies with relevant Federal Motor Vehicle Safety Standards.

_____ _____
Signature of Authorized Organization Representative Date

_____
Printed/Typed Name and Title - Authorized Official

_____
Organization/Company

The _____, certifies that the rolling stock, for which
(Proposed Manufacturer)
the purchaser has specified in Bid Number _____, is not subject to the Federal Motor Vehicle Safety Standards issued by the National Highway Traffic Safety Administration in Part 571 of this title.

_____ _____
Signature of Authorized Organization Representative Date

_____
Printed/Typed Name and Title - Authorized Official

_____
Organization/Company

NEW BUS TESTING CERTIFICATION

(Preaward Certification - Must be completed by all bidders/proposers to be responsive)

The bidder will certify one of the following applicable statements:

The _____ certifies that the following two conditions, in compliance with the requirements of Section 317 of the Surface Transportation and Uniform Relocation Assistance Act of 1987, as amended, and 49 C.F.R. Part 665, will have been met before final acceptance of bus(es) to be purchased or leased as specified in Bid No. _____.

1. A model of the bus has been tested at the bus testing facility at Altoona, Pennsylvania; and

2. The purchaser has received a copy of the Test Report prepared by the bus testing facility at Altoona, Pennsylvania, on the bus model.

_____ _____
Signature of Authorized Organization Representative Date

_____ _____
Printed/Typed Name and Title -- Authorized Official Organization/Company

The _____ certifies that the bus(es) to be purchased or leased as specified in Bid No. _____ does not qualify as a new bus model. A new bus model is defined in Section 317 of the Surface Transportation and Uniform Relocation Assistance Act of 1987, as amended, and 49 C.F.R. Part 665, as a bus model which:

1. Has not been used in mass transportation service in the United States before October 1, 1988; or

2. Has been used in such service but which after September 30, 1988, is being produced with a change of major components or significant structural modifications.

_____ _____
Signature of Authorized Organization Representative Date

_____ _____
Printed/Typed Name and Title - Authorized Official Organization/Company

PREAWARD BUY AMERICA CERTIFICATION

The _____ certifies that the rolling stock to be purchased meets the requirements of Section 165(a) or (b)(3) of the Surface Transportation Assistance Act of 1982, as amended, after having reviewed itself or through an audit prepared by someone other than the manufacturer or its agent documentation provided by the manufacturer which lists:

1. Component and subcomponent parts of the rolling stock to be purchased identified by manufacturer of the parts, their country of origin and costs; and

2. The location of the final assembly point for the rolling stock, including a description of the activities that will take place at the final assembly point, and the cost of final assembly.

_____ _____

Signature of Authorized Organization Representative Date

_____

Printed/Typed Name and Title - Authorized Official

_____

Organization/Company

PREAWARD PURCHASER'S REQUIREMENTS CERTIFICATION

In accordance with 49 C.F.R. Part 663, Section 663.27, _____ (Recipient), certifies that:

1. The rolling stock, to be purchased, _____ (Description) _____ (Number),

   from _____ (Manufacturer), is the same product as described in the purchaser's solicitation specification; and

2. The proposed manufacturer is a responsible manufacturer with the capability to produce a vehicle that meets the recipient's specification set forth in the recipient's solicitation.

_____ _____
Signature of Authorized Organization Representative Date

_____
Printed/Typed Name and Title - Authorized Official

_____
Organization/Company

SUPPLEMENT 2

NOTICE OF CONTRACTUAL REQUIREMENTS

1.0 WARRANTIES

1.1 The successful bidder shall assume responsibility for warranty of materials, components, accessories, and/or performance of service proposed whether the same are made by the bidder or purchased in final form from any outside source.

1.2 The warranty on vehicles shall include the following at a minimum:

1.2.1 The successful bidder shall warrant each vehicle, including all equipment and accessories, to be used from defects in design, material, and workmanship for the manufacturer's standard warranty period after each is accepted by the purchaser.

1.2.2 The successful bidder shall warrant the air conditioning unit and all related components for the manufacturer's standard warranty period after each vehicle is accepted by the purchaser.

1.2.3 The successful bidder shall warrant the vehicle against corrosion and/or rust for the manufacturer's standard warranty period after each vehicle is accepted by the purchaser.

1.3 The successful bidder shall furnish to the purchaser, within thirty (30) days after receipt of notification of the bid award, the name, address, telephone number, and contact person of the agency or agencies authorized to perform warranty work on the installation, equipment, items, components, and/or performance of service included in the specifications. The successful bidder shall make every effort to locate an agency or agencies as near as possible to the purchaser. The distance should not exceed twenty-five (25) miles. If distance exceeds this mileage, the bidder must address the response time.

1.4 Payment to the authorized warranty agency or agencies for warranty work performed shall be the responsibility of the successful bidder.

1.5 The warranty will begin upon the date of acceptance and concurrent odometer/ hubometer reading.

2.0 DELIVERY AND ACCEPTANCE

2.1 The successful bidder shall be responsible for delivering vehicles that are properly serviced, clean, and in first-class operating condition. Predelivery service, at a minimum, shall include the following:

2.1.1 Complete lubrication of chassis, engine, and operating mechanisms with the manufacturer's recommended grades of lubricants.

2.1.2 Complete check all fluid levels to ensure proper fill.

2.1.3 Adjustment of the engine for proper operating condition.

2.1.4 Inflation of tires to proper pressure, alignment of front end, and proper balancing all wheels.

2.1.5 Check to ensure proper operation of all accessories, gauges, lights, and mechanical and hydraulic features.

2.1.6 Alignment of headlights.

2.1.7 Cleaning of the vehicle and removal of all unnecessary stickers.

2.2 The successful bidder shall provide a qualified representative for orientation on the operation, maintenance, and safety of the vehicle(s)/equipment as outlined in the technical specifications. This orientation is to be coordinated through the offices of Pasco County Public Transportation Division and Fleet Management Department.

2.3 Receipt of the units on the common carrier manifest by the purchaser will constitute delivery. Further, since a common carrier is an independent concern, any delay in delivery resulting from the common carrier's operations, accident, or mechanical failures en route will be considered a cause beyond the control of the successful bidder, provided the purchased vehicle(s)/equipment were delivered to the said carrier in ample time for delivery within normal operating conditions.

2.4 In case delivery of the completed units under this contract shall be necessarily delayed due to weather, strike, injunctions, government controls, or by reason of any cause or circumstances beyond control of the successful bidder, the time for completion of delivery shall be extended by the number of days to be determined in each instance in writing and by mutual agreement between the parties.

2.5 Delivery of the vehicles/equipment by the successful bidder does not constitute acceptance by the purchaser. Equipment shall be considered "accepted" upon inspection by the purchaser and an authorized signature of receipt on the applicable purchase order.

3.0 LIQUIDATED DAMAGES

In the event of an unauthorized delay or interruption in the completion of the delivery and acceptance of the system, excluding authorized extensions, the purchaser shall assess as liquidating damages, One Hundred and 00/100 Dollars ($100.00) per day.

4.0 PARTS AND MANUALS

4.1 A supply of replacement parts for the vehicles/equipment specified must be guaranteed by the successful bidder for a ten (10) year period from the date of purchase.

4.2 The successful bidder shall provide:

4.2.1 Two (2) complete wiring diagram per the total bid.

4.2.2 Two (2) current Maintenance and Repair Manuals per the total bid.

4.2.3 One (1) Vehicle Operator's Manual per vehicle.

4.2.4 One (1) Lift/Securement Operator's Manual per vehicle.

4.2.5 One (1) each of any other applicable information necessary for the proper maintenance and operation of each unit.

4.3 All supplied manuals, wiring diagrams, and applicable information shall incorporate the features ordered on each unit covered by this procurement.

5.0 PREAWARD AND POST-DELIVERY AUDIT REQUIREMENTS

5.1 This procurement is subject to the Federal Transit Administration preaward and post-delivery audit requirements as required in C.F.R., Part 663. Required certificates, per the attached formats, and documentation, as listed below, must be completed and submitted with the bid. A bid that does not include the required certificates and documentation will be considered nonresponsive.

5.2 Post-delivery requirements:

5.2.1 The successful bidder will complete and submit a Manufacturer's Federal Motor Vehicle Safety Certification, per attached format.

5.2.2 The successful bidder will ensure documentation is provided by the manufacturer that lists:

5.2.2.1 Component and subcomponent parts of the rolling stock to be purchased, identified by the manufacturer of the parts, their country of origin, and costs; and

5.2.2.2 The location of the final assembly point for the rolling stock, including a description of the activities that will take place at the final assembly point and the cost of final assembly.

6.0 CIVIL RIGHTS REQUIREMENTS OF SUCCESSFUL BIDDERS

6.1 Compliance with regulations:

The successful bidder shall comply with the regulations relative to nondiscrimination in Federally assisted programs of the United States Department of Transportation (hereinafter, "DOT") Title 49, C.F.R., Part 19 as they may be amended from time to time (hereinafter referred to as the regulations), which are incorporated by reference and made a part of this contract.

6.2 Nondiscrimination:

In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. 2000.d; Section 303 of the Age Discrimination Act of 1975, as amended; 42 U.S.C. 6102; Section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. 12132; and Federal Transit Law at 49 U.S.C. 5332, the successful bidder, with regard to the work performed by it during the contract, shall not discriminate based on race, color, creed, sex, age, disability, or national origin against any employee or applicant for employment or in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The successful bidder shall not participate either directly or indirectly in the discrimination prohibited by the regulations, including employment practices.

6.3 Equal employment opportunity:

In connection with the execution of this contract, the successful bidder shall not discriminate against any employee or application for employment because of race, religion, color, sex, or national origin. The successful bidder shall take affirmative action to ensure that applicants are employed and that employees are treated during their employment, without regard to their race, religion, color, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

6.4 Age:

In accordance with Section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. Subsection 623, and Federal transit law at 49 U.S.C. Section 5332, the successful bidder agrees to refrain from discrimination against present and prospective employees from reason of age. In addition, the successful bidder agrees to comply with any implementing requirements FTA may issue.

6.5 Disabilities

In accordance with Section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. Section 12112, the successful bidder agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R., Part 1630, pertaining to employment of persons with disabilities. In addition, the successful bidder agrees to comply with any implementing requirements FTA may issue.

6.6 Solicitation language:

Solicitations from subcontracts, including procurement of materials and equipment in all solicitations, either by competitive bidding or negotiation, made by the successful bidder for work to be performed under the proposed contract, including procurement of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the successful bidder of the obligations relative to nondiscrimination on the grounds of race, color, creed, sex, religion, age, disability, or national origin.

6.7 Access to records, information, and reports:

Upon request, the successful bidder agrees to permit, and require its subrecipients to permit, the Secretary of Transportation, the Comptroller General of the United States, and, if appropriate the State or their authorized representatives to inspect all project work, materials, payrolls, and other data, and to audit the books, records, and accounts of the successful bidder and its subrecipients pertaining to this project.

6.8 Sanctions for noncompliance:

In the event of the successful bidder's noncompliance with the nondiscrimination provisions of the contract, the purchaser shall impose such contract sanctions as it may determine to be appropriate including, but not limited to:

6.8.1 Withholding payments to the successful bidder until compliance, and/or

6.8.2 Cancellation, termination, or suspension of the contract, in whole or in part.

7.0 INTEREST OF PUBLIC OFFICIALS

7.1 Neither the Pasco County Board of County Commissioners nor its successful bidder(s) or their subcontractors shall enter into any contract, subcontract, or arrangement in connection with this procurement, in which any member, officer, or employee of the Board, during their tenure or for two (2) years thereafter, has any interest, direct or indirect. If any such present or former member, officer, or employee involuntarily acquires or had acquired prior to the beginning of this tenure any such interest, and if such interest is immediately disclosed to the Board, the Board with prior approval of the U.S. Department of Transportation, may waive the prohibition contained in this subsection provided that any such present member, officer or employee shall not participate in any action by the Board relating to such contract, subcontract, or arrangement.

7.2 The Board shall insert in all contracts entered into in connection with this procurement, and shall require its successful bidders to insert in each of their subcontracts, the following provision:

> "No member, officer, or employee of the (name of agency or locality) during their tenure or for two (2) years thereafter shall have any interest, direct or indirect, in this contract or the proceeds thereof."

7.3 The provisions of this subsection shall not be applicable to any agreement between the Board and its fiscal depositories, or to any agreement for utility services the rates for which are fixed or controlled by a governmental agency.

7.4 No member or delegate to the congress of the United States shall be admitted to any share or part of the agreement or any benefit arising therefrom.

8.0 ENERGY CONSERVATION

The successful bidder agrees to comply with the mandatory standards and policies relating energy efficiency that are contained in the State energy conservation plan

issued in compliance with the Energy Policy and Conservation Act, 42 U.S.C. Section 6321, et seq.

9.0 RECYCLED PRODUCTS

The successful bidder agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. Section 6962) including, but not limited to, the regulatory provisions of 40 C.F.R., Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 C.F.R., Part 247.

10.0 CLEAN WATER REQUIREMENTS (Applicable to Purchases over One Hundred Thousand and 00/100 Dollars [$100,000.00])

The successful bidder agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251, et seq. The successful bidder agrees to report each violation to the purchaser and understands and agrees that the purchaser will, in turn, report each violation as required to ensure notification to the FTA and the appropriate EPA Regional Office. The successful bidder also agrees to include these requirements in each subcontract exceeding One Hundred Thousand and 00/100 Dollars ($100,000.00) financed in whole or in part with Federal assistance provided by the FTA.

11.0 CLEAN AIR REQUIREMENTS (Applicable to Purchases over One Hundred Thousand and 00/100 Dollars [$100,000.00])

The successful bidder agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. Subsection 7401, et seq. The successful bidder agrees to report each violation to the purchaser and understands and agrees that the purchaser will, in turn, report each violation as required to assure notification to the FTA and the appropriate EPA Regional Office. The successful bidder also agrees to include these requirements in each subcontract exceeding One Hundred Thousand and 00/100 Dollars ($100,000.00) financed in whole or in part with Federal assistance provided by the FTA.

12.0 NO GOVERNMENT OBLIGATION TO THIRD PARTIES

12.1 The purchaser and successful bidder acknowledge and agree that, notwithstanding any concurrence by the Federal government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal government, the Federal government is not a party to this contract and shall not be subject to any obligations or liabilities to the purchaser, successful bidder, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract. The successful bidder agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by the FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

13.0 PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTS

13.1 The successful bidder acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801, et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R., Part 31, apply to its actions pertaining to this project. Upon execution of the associated purchase order, the successful bidder certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the FTA-assisted project for which this contract work is being performed. In addition to other penalties that may be applicable, the successful bidder further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the successful bidder to the extent the Federal governments deems appropriate.

13.2 The successful bidder also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement submission, or certification to the Federal government pertaining to this project that is financed in whole or in part with Federal assistance originally awarded by the FTA under the authority of 49 U.S.C., § 5307, the government reserves the right to impose the penalties of 18 U.S.C., § 1001, and 49 U.S.C., § 5307(n)(1) on the successful bidder, to the extent the Federal government deems appropriate.

13.3 The successful bidder agrees to include the above two (2) clauses in each subcontract financed in whole or in part with Federal assistance provided by the FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provision.

14.0 FEDERAL MOTOR VEHICLE SAFETY STANDARDS (FMVSS)

14.1 All vehicles/equipment covered by these specifications shall be in compliance with the applicable FMVSS established by the Department of Transportation and with all the requirements of the laws of the State of Florida as to lighting equipment and all warning and safety devices.

14.2 In the event there are changes in the FMVSS between the date of bid and the date of manufacture, any new requirements applicable at time of manufacture will be considered separately and the price for the same determined by mutual agreement. In granting this, the successful bidder is not relieved of the responsibility of providing the purchaser with all available information relative to the engineering structure and design change so affected, and the impact (if any) these changes may have on the durable-useful life and attractive appearance of the vehicle to be provided per these specifications.

15.0 INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION REQUIREMENTS

The preceding provisions include, in part, certain standard terms and conditions required by the DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by the DOT, as set forth in FTA Circular 4220.1.D, dated May 1, 1995, are hereby incorporated by reference. Anything

to the contrary herein notwithstanding, all FTA-mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this agreement. The successful bidder shall not perform any act, fail to perform any act, or refuse to comply with any purchaser requests that would cause the purchaser to be in violation of the FTA terms and conditions.

16.0 TERMINATION (Applicable to Contracts exceeding Ten Thousand and 00/100 Dollars [$10,000.00])

16.1 If the successful bidder or any principal or partner is adjudged bankrupt or insolvent, if the successful bidder or any principal or partner makes a general assignment for the benefit of its creditors, if a trustee or receiver is appointed for the successful bidder or principal or partner or for any of its property, if the successful bidder or partner files a petition to take advantage of any debtor's act or reorganize under the bankruptcy or similar laws, the County may, without prejudice to any other right or remedy, and after having given the successful bidder fourteen (14) days' written notice, terminate the services of the successful bidder.

16.2 In the event the successful bidder disregards the authority of the County or violates the provisions of this agreement or otherwise fails to comply with any provisions of this agreement, or if the delivery or quality of the products is unsatisfactory, the County may serve written notice thereof upon the successful bidder, and if the successful bidder fails within a period of ten (10) calendar days thereafter to correct such failure, the County may terminate this agreement upon written notice to the successful bidder. Upon such termination, the successful bidder shall immediately cease its performance of this agreement and shall deliver to the County all products previously ordered by the County, unless the said order has been cancelled by the County.

16.3 The County may reserve the right to terminate this agreement, in whole or in part, for its convenience. Such termination shall be effective seven (7) calendar days after transmission of written notice of the same to the successful bidder by U.S. certified mail, return receipt requested. In the event of such termination for convenience, the successful bidder shall be entitled to recover that portion of any due and outstanding unpaid balance through the date of termination, together with reasonable expenses incurred in complying with the notice of termination. The successful bidder shall not be entitled to any other or further recovery including, but not limited to, anticipated fees or profits on deliveries not required to be performed.

16.4 If, after notice of termination of this agreement as provided for in Section 16.1 or 16.2 above, it is determined for any reason that the successful bidder was not in default, or that its default was excusable, or that the County was not otherwise entitled to the remedy against the successful bidder provided for in Section 16.1 or 16.2, then the notice of termination given pursuant to Section 16.1 or 16.2 shall be deemed to be the notice of termination for convenience provided for in Section 16.3. and the successful bidder shall be the same as and limited to those afforded the successful bidder under Section 16.3.

16.5 Should the County find it necessary to terminate this agreement for the reasons stated in Section 16.1 or 16.2, the cost of termination and any additional costs incurred in completing or correcting the successful bidder's work shall be borne by the successful bidder. Should withheld payments be insufficient to cover the said costs, then the

successful bidder shall immediately pay the County, upon demand, an amount equal to such additional costs.

17.0 BREACHES AND DISPUTE RESOLUTION

17.1 Disputes:

Disputes arising in the performance of this contract that are not resolved by agreement of the parties shall be decided in writing by the authorized representative of the purchaser. This decision shall be final and conclusive, unless within ten (10) days from the date of receipt of its copy, the successful bidder mails or otherwise furnishes a written appeal to the purchaser. In connection with any such appeal, the successful bidder shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the purchaser shall be binding upon the successful bidder, and the successful bidder shall abide by the decision.

17.2 Performance during dispute:

Unless otherwise directed by the purchaser, the successful bidder shall continue performance under this contract while matters in dispute are being resolved.

17.3 Claims for damages:

Should either party to the contract suffer injury or damage to person or property because of any act or omission of the party or of any of their employees, agents, or others for whose acts they are legally liable, a claim for damages therefore shall be made in writing to such other party within a reasonable time after the first observance of such injury of damage.

17.4 Rights and remedies:

The duties and obligations imposed by the contract documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights, and remedies otherwise imposed or available by law.

18.0 FEDERAL CHANGES

Successful bidder shall at all times comply with all applicable FTA regulations, policies, procedures, and directives, including without limitation those listed directly or by reference in the most current agreement between the purchaser and the FTA, as they may be amended or promulgated from time to time during the term of this contract. Successful bidder's failure to so comply shall constitute a material breach of this contract.

19.0 U.S. DEPARTMENT OF TRANSPORTATION FUNDING

Any contract resulting from a bid submitted is subject to financial reimbursement by the U.S. Department of Transportation.

20.0 FUTURE PURCHASES UNDER THIS CONTRACT

20.1 The purchaser will be allowed to purchase this vehicle as long as current production-year chassis are still available from the manufacturer or suppliers, under the same terms and conditions stated in this initial purchasing agreement.

20.2 Pasco County will have an option for the purchasing agreement for four (4) succeeding chassis production years. Any optional purchasing agreements shall be subject to the same pricing, terms, and conditions of the original purchasing agreement. However, a chassis model price increase will be allowed when a model year change is specific to the automotive or bus industry. The contractor shall provide a certification from the manufacturer to justify the chassis model price increase. The price may be adjusted only in the same amount as the price increase to the contractor. The contractor must submit the request and all necessary documentation to the Purchasing Director.

21.0 TITLE, VEHICLE REQUIREMENTS

21.1 All vehicles shall be titled to the purchaser.

21.2 The successful bidder shall be responsible to provide the purchaser with proof of ownership (MSO, etc.), certified proof of GVW, or any other such documentation as may be required for the purchaser to apply for title and purchase a license tag. These papers, along with a check in the applicable amount for each vehicle, made payable to the Pasco County Board of County Commissioners, shall be forwarded to:

Clerk of the Circuit Court
Attention Jennie Haynes
705 East Live Oak Drive
Dade City, FL 33525

SUPPLEMENTAL CONTRACT
FORMS/CERTIFICATIONS FOLLOW

CERTIFICATION OF COMPLIANCE WITH OR INAPPLICABILITY OF FEDERAL MOTOR VEHICLE SAFETY STANDARDS

(Post-Award Certification - Must be completed/provided by the successful bidder upon delivery)

The successful bidder will certify one of the following applicable statements:

The _____, certifies that the rolling stock, for which
(Manufacturer)
the purchaser has specified in Bid No. _____, is subject to the Federal Motor Vehicle Safety Standards issued by the National Highway Traffic Safety Administration in Part 571 of this title and complies with relevant Federal Motor Vehicle Safety Standards.

_____ _____
Signature of Authorized Organization Representative Date

_____
Printed/Typed Name and Title - Authorized Official

_____
Organization/Company

The _____, certifies that the rolling stock, for which
(Manufacturer)
the purchaser has specified in Bid No. _____, is not subject to the Federal Motor Vehicle Safety Standards issued by the National Highway Traffic Safety Administration in Part 571 of this title.

_____ _____
Signature of Authorized Organization Representative Date

_____
Printed/Typed Name and Title - Authorized Official

_____
Organization/Company

POST DELIVERY BUY AMERICA CERTIFICATION

The _____ certifies that the rolling stock received meets the requirements of Section 165(a) or (b)(3) of the Surface Transportation Assistance Act of 1982, as amended, after having reviewed itself or through an audit prepared by someone other than the manufacturer or its agent documentation provided by the manufacturer which lists:

1. Component and subcomponent parts of the rolling stock identified by manufacturer of the parts, their country of origin and costs; and

2. The location of the final assembly point for the rolling stock, including a description of the activities that took place at the final assembly point, and the cost of final assembly.

_____ _____

Signature of Authorized Organization Representative Date

_____

Printed/Typed Name and Title - Authorized Official

_____

Organization/Company

POST DELIVERY PURCHASER'S REQUIREMENTS CERTIFICATION

(For Procurement of Ten (10) or Fewer Buses, or Any Number of Primary Manufacturer Standard Production and Unmodified Vans)

The _____ certifies that after visually
(Organization/Agency)
inspecting and road testing the _____,
(Number and Type of Vehicles)
these vehicles meet the contract specifications.

_____ _____
Signature of Authorized Organization Representative Date

_____
Printed/Typed Name and Title - Authorized Official

_____
Organization/Company

END OF SPECIFICATIONS

BID FORM

Business Name: _____

Item No.	Quantity	Description	Unit Price	Total
1.	2 Each to 10 Each	Heavy-Duty Transit Buses, 30', per Specifications	_____	_____
2.	2 Each to 10 Each	Heavy-Duty Transit Buses, 35', per Specifications	_____	_____

Manufacturer: _____ Warranty: _____

Model: _____ Delivery: _____ Calendar Days After Receipt of Order

"We offer to sell/provide Pasco County, Florida, the above item(s) and/or service(s) at the price(s) stated, in accordance with the terms and conditions contained herein. In addition, the item(s) and/or service(s) offered above meet all specifications contained herein or attached, unless otherwise stipulated by exception. This offer to sell/provide is firm for ninety (90) days."

_____
(Signature of Bidder—Ink)

_____
(Printed Name and Title)

_____
(Business Name)

Receipt of Addendum No. _____ through No. _____ is acknowledged.

Business Name: _____

Doing Business as (if Applicable): _____

Division of (if Applicable): _____ Fed ID No.: _____

Business Organization:

☐ Corporation:

☐ Partnership: ☐ General ☐ Limited

☐ Limited Liability Company (LLC):

State Registered In: _____ Year: _____

☐ Sole Proprietorship: Owner: _____

☐ Other: _____

Telephone: _____

Facsimile: _____

Address: _____

_____

_____

Date: _____, _____