 <b>UNIVERSITY OF SOUTH CAROLINA</b>	<b>INVITATION FOR BID</b>	Solicitation Number	<b>USC-IFB-2371-KS</b>
		Date Issued	<b>March 4<sup>th</sup>, 2013</b>
		Date Posted	<b>March 4<sup>th</sup>, 2013</b>
		Procurement Officer	<b>Kevin Sanders</b>
		Phone	<b>803.777.1015</b>
		E-Mail Address	<b>ksanders@mailbox.sc.edu</b>

DESCRIPTION: New Motor Coach

USING GOVERNMENT AGENCY: UNIVERSITY OF SOUTH CAROLINA

*The Term "Offer" Means Your "Bid" or "Proposal".*

SUBMIT OFFER BY: March 25<sup>th</sup>, 2013  
2:30pm

See "Deadline for Submission of Offer" provision

QUESTIONS MUST BE RECEIVED BY:  
March 13<sup>th</sup>, 2013 12:00 noon

See "Questions From Offerors" provision

NUMBER OF COPIES TO BE  
SUBMITTED: 1 original and 2 copies marked  
"COPY" (Original shall prevail)

**Offers must be submitted in a sealed package. Solicitation Number & Opening Date must appear on package exterior.**

SUBMIT YOUR SEALED OFFER TO EITHER OF THE FOLLOWING ADDRESSES:

<b>MAILING ADDRESS:</b>	<b>PHYSICAL ADDRESS:</b>
University of South Carolina – Purchasing Dept. 1600 Hampton St., Suite 606 Columbia, SC 29208	University of South Carolina – Purchasing Dept. 1600 Hampton St., Suite 606 Columbia, SC 29208

See "Submitting Your Offer" provision

<b>CONFERENCE TYPE:</b> N/A <b>DATE &amp; TIME:</b>  As appropriate, see "Conferences-Pre-Bid/Proposal" & "Site Visit" provisions	<b>LOCATION:</b>
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<b>AWARD &amp; AMENDMENTS</b>	Award will be posted at the Physical Address stated above on <b>March 26<sup>th</sup>, 2013</b> . The award, this solicitation, and any amendments will be posted at the following web address: <a href="http://purchasing.sc.edu">http://purchasing.sc.edu</a>
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You must submit a signed copy of this form with Your Offer. By submitting a bid or proposal, You agree to be bound by the terms of the Solicitation. You agree to hold Your Offer open for a minimum of thirty (30) calendar days after the Opening Date.

<b>NAME OF OFFEROR</b> <small>(Full legal name of business submitting the offer)</small>	<b>OFFEROR'S TYPE OF ENTITY:</b> <small>(Check one)</small> <input type="checkbox"/> Sole Proprietorship <input type="checkbox"/> Partnership <input type="checkbox"/> Corporate entity (not tax-exempt) <input type="checkbox"/> Tax –exempt corporate entity <input type="checkbox"/> Government entity (federal, state, or local) <input type="checkbox"/> Other _____ <small>(See "Signing Your Offer" provision.)</small>
<b>AUTHORIZED SIGNATURE</b>  <small>(Person signing must be authorized to submit binding offer to enter contract on behalf of Offeror named above.)</small>	
<b>TITLE</b> <small>(Business title of person signing above)</small>	
<b>PRINTED NAME</b> <small>(Printed name of person signing above)</small>	<b>DATE SIGNED</b>

Instructions regarding Offeror's name: Any award issued will be issued to, and the contract will be formed with, the entity identified as the offeror above. An offer may be submitted by only one legal entity. The entity named as the offeror must be a single and distinct legal entity. Do not use the name of a branch office or a division of a larger entity if the branch or division is not a separate legal entity, *i.e.*, a separate corporation, partnership, sole proprietorship, etc.

<b>STATE OF INCORPORATION</b>	<small>(If offeror is a corporation, identify the state of Incorporation.)</small>
<b>TAXPAYER IDENTIFICATION NO.</b>  <small>(See "Taxpayer Identification Number" provision)</small>	

**PAGE TWO**

**(Return Page Two with Your Offer)**

<p><b>HOME OFFICE ADDRESS</b> (Address for offeror's home office / principal place of business)</p>          	<p><b>NOTICE ADDRESS</b> (Address to which all procurement and contract related notices should be sent.) (See "Notice" clause)</p>          <p align="right">_____ Area Code -</p> <p align="right">Number - Extension                      Facsimile</p> <p align="right">_____ E-</p> <p>mail Address</p>
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<p><b>PAYMENT ADDRESS</b> (Address to which payments will be sent.) (See "Payment" clause)</p>          <p>_____ Payment Address same as Home Office Address</p> <p>_____ Payment Address same as Notice Address    <b>(check only one)</b></p>	<p><b>ORDER ADDRESS</b> (Address to which purchase orders will be sent) (See "Purchase Orders and "Contract Documents" clauses)</p>          <p>_____ Order Address same as Home Office Address</p> <p>_____ Order Address same as Notice Address    <b>(check only one)</b></p>
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**ACKNOWLEDGMENT OF AMENDMENTS**  
 Offerors acknowledges receipt of amendments by indicating amendment number and its date of issue. (See "Amendments to Solicitation" Provision)

Amendment No.	Amendment Issue Date	Amendment No.	Amendment Issue Date	Amendment No.	Amendment Issue Date	Amendment No.	Amendment Issue Date

<p><b>DISCOUNT FOR PROMPT PAYMENT</b>          (See "Discount for Prompt Payment" clause)</p>	<p>10 Calendar Days (%)</p>	<p>20 Calendar Days (%)</p>	<p>30 Calendar Days (%)</p>	<p>_____ Calendar Days (%)</p>
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**PREFERENCES - A NOTICE TO VENDORS (SEP. 2009):** On June 16, 2009, the South Carolina General Assembly rewrote the law governing preferences available to in-state vendors, vendors using in-state subcontractors, and vendors selling in-state or US end products. This law appears in Section 11-35-1524 of the South Carolina Code of Laws. A summary of the new preferences is available at [www.procurement.sc.gov/preferences](http://www.procurement.sc.gov/preferences). ***ALL THE PREFERENCES MUST BE CLAIMED AND ARE APPLIED BY LINE ITEM, REGARDLESS OF WHETHER AWARD IS MADE BY ITEM OR LOT. VENDORS ARE CAUTIONED TO CAREFULLY REVIEW THE STATUTE BEFORE CLAIMING ANY PREFERENCES. THE REQUIREMENTS TO QUALIFY HAVE CHANGED. IF YOU REQUEST A PREFERENCE, YOU ARE CERTIFYING THAT YOUR OFFER QUALIFIES FOR THE PREFERENCE YOU'VE CLAIMED. IMPROPERLY REQUESTING A PREFERENCE CAN HAVE SERIOUS CONSEQUENCES.*** [11-35-1524(E)(4)&(6)]

**PREFERENCES - ADDRESS AND PHONE OF IN-STATE OFFICE:** Please provide the address and phone number for your in-state office in the space provided below. An in-state office is necessary to claim either the Resident Vendor Preference (11-35-1524(C)(1)(i)&(ii)) or the Resident Contractor Preference (11-35-1524(C)(1)(iii)). Accordingly, you must provide this information to qualify for the preference. An in-state office is not required, but can be beneficial, if you are claiming the Resident Subcontractor Preference (11-35-1524(D)).

\_\_\_\_\_ In-State Office Address same as Home Office Address

\_\_\_\_\_ In-State Office Address same as Notice Address    (check only one)

## **Solicitation Outline**

- I. Scope of Solicitation
- II. Instructions to Offerors
  - A. General Instructions
  - B. Special Instructions
- III. Scope of Work / Specifications  
May be blank if Bidding Schedule / Cost Proposal attached
- IV. Information for Offerors to Submit
- V. Qualifications
- VI. Award Criteria
- VII. Terms and Conditions
  - A. General
  - B. Special
- VIII. Bidding Schedule / Cost Proposal
- IX. Attachments to Solicitation

### **I. Scope Of Solicitation**

ACQUIRE SUPPLIES / EQUIPMENT (JAN 2006): The purpose of this solicitation is to establish a source or sources of supply for the purchase of new supplies and/or equipment as listed.

It is the intent of the University of South Carolina to solicit bids from qualified sources of supply to furnish and deliver New Motor Coach to the Vehicle Management Department of the University of South Carolina Columbia campus in accordance with all requirements stated herein.

### **II. Instructions To Offerors - A. General Instructions**

DEFINITIONS (JANUARY 2006) EXCEPT AS OTHERWISE PROVIDED HEREIN, THE FOLLOWING DEFINITIONS ARE APPLICABLE TO ALL PARTS OF THE SOLICITATION.

AMENDMENT – means a document issued to supplement the original solicitation document.

BUYER – means the Procurement Officer.

CHANGE ORDER - means any written alteration in specifications, delivery point, rate of delivery, period of performance, price, quantity, or other provisions of any contract accomplished by mutual agreement of the parties to the contract.

CONTRACT - See clause entitled “Contract Documents & Order of Precedence.”

CONTRACT MODIFICATION – means a written order signed by the Procurement Officer, directing the contractor to make changes which the changes clause of the contract authorizes the Procurement Officer to order without the consent of the contractor.

CONTRACTOR - means the Offeror receiving an award as a result of this solicitation.

COVER PAGE – means the top page of the original solicitation on which the solicitation is identified by number. Offerors are cautioned that Amendments may modify information provided on the Cover Page.

OFFER – means the bid or proposal submitted in response this solicitation. The terms “Bid” and “Proposal” are used interchangeably with the term “Offer.”

OFFEROR – means the single legal entity submitting the offer. The term “Bidder” is used interchangeably with the term “Offeror.” See bidding provisions entitled “Signing Your Offer” and “Bid/Proposal As Offer To Contract.”

ORDERING ENTITY - Using Governmental Unit that has submitted a Purchase Order.

PAGE TWO – means the second page of the original solicitation, which is labeled Page Two.

PROCUREMENT OFFICER – means the person, or his successor, identified as such on the Cover Page.

YOU and YOUR – means Offeror.

SOLICITATION – means this document, including all its parts, attachments, and any Amendments.

STATE – means the Using Governmental Unit(s) identified on the Cover Page.

SUBCONTRACTOR – means any person having a contract to perform work or render service to Contractor as a part of the Contractor’s agreement arising from this solicitation.

USING GOVERNMENTAL UNIT – means the unit(s) of government identified as such on the Cover Page. If the Cover Page names a “Statewide Term Contract” as the Using Governmental Unit, the Solicitation seeks to establish a Term Contract [11-35-310(35)] open for use by all South Carolina Public Procurement Units [11-35-4610(5)].

WORK - means all labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor’s obligations under the Contract.

AMENDMENTS TO SOLICITATION (JANUARY 2006) (a) The Solicitation may be amended at any time prior to opening. All actual and prospective Offerors should monitor the following web site for the issuance of Amendments: <http://purchasing.sc.edu>. (b) Offerors shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date in the space provided for this purpose on Page Two, (3) by letter, or (4) by submitting a bid that indicates in some way that the bidder received the amendment. (c) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

AWARD NOTIFICATION (NOV 2007): Notice regarding any award or cancellation of award will be posted at the location specified on the Cover Page. If the contract resulting from this Solicitation has a total or potential value of fifty thousand dollars or more, such notice will be sent to all Offerors responding to the Solicitation. Should the contract resulting from this Solicitation have a total or potential value of one hundred thousand dollars or more, such notice will be sent to all Offerors responding to the Solicitation and any award will not be effective until the eleventh day after such notice is given. [02-2A010-1]

BID / PROPOSAL AS OFFER TO CONTRACT (JANUARY 2006) By submitting Your Bid or Proposal, You are offering to enter into a contract with the Using Governmental Unit(s). Without further action by either party, a binding contract shall result upon final award. Any award issued will be issued to, and the contract will be formed with, the entity identified as the Offeror on the Cover Page. An Offer may be submitted by only one legal entity; "joint bids" are not allowed.

BID ACCEPTANCE PERIOD (JANUARY 2006) In order to withdraw Your Offer after the minimum period specified on the Cover Page, You must notify the Procurement Officer in writing.

BID IN ENGLISH & DOLLARS (JANUARY 2006) Offers submitted in response to this solicitation shall be in the English language and in US dollars, unless otherwise permitted by the Solicitation.

CERTIFICATION REGARDING DEBARMENT AND OTHER RESPONSIBILITY MATTERS (JANUARY 2006)

(a)(1) By submitting an Offer, Offeror certifies, to the best of its knowledge and belief, that-

(i) Offeror and/or any of its Principals-

(A) Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any state or federal agency;

(B) Have not, within a three-year period preceding this offer, 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) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision.

(ii) Offeror has not, within a three-year period preceding this offer, had one or more contracts terminated for default by any public (Federal, state, or local) entity.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

(b) Offeror shall provide immediate written notice to the Procurement Officer if, at any time prior to contract award, Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) If Offeror is unable to certify the representations stated in paragraphs (a)(1), Offer must submit a written explanation regarding its inability to make the certification. The certification will be considered in connection with a review of the Offeror's responsibility. Failure of the Offeror to furnish additional information as requested by the Procurement Officer may render the Offeror nonresponsive.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly or in bad faith rendered an erroneous certification, in addition to other remedies available to the State, the Procurement Officer may terminate the contract resulting from this solicitation for default.

**CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (MAY 2008)**

GIVING FALSE, MISLEADING, OR INCOMPLETE INFORMATION ON THIS CERTIFICATION MAY RENDER YOU SUBJECT TO PROSECUTION UNDER SECTION 16-9-10 OF THE SOUTH CAROLINA CODE OF LAWS AND OTHER APPLICABLE LAWS.

(a) By submitting an offer, the offeror certifies that-

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to-

- (i) Those prices;
- (ii) The intention to submit an offer; or
- (iii) The methods or factors used to calculate the prices offered.

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory-

(1) Is the person in the offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to paragraphs (a)(1) through (a)(3) of this certification; or

(2)(i) Has been authorized, in writing, to act as agent for the offeror's principals in certifying that those principals have not participated, and will not participate in any action contrary to paragraphs (a)(1) through (a)(3) of this certification [As used in this subdivision (b)(2)(i), the term "principals" means the person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal];

(ii) As an authorized agent, does certify that the principals referenced in subdivision (b)(2)(i) of this certification have not participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this certification; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this certification.

**CLARIFICATION (NOV 2007)** Pursuant to Section 11-35-1530(6), the Procurement Officer may elect to communicate with you after opening for the purpose of clarifying either your offer or the requirements of the solicitation. Such communications may be conducted only with offerors who have submitted an offer which obviously conforms in all material aspects to the solicitation. Clarification of an offer must be documented in writing and included with the offer. Clarifications may not be used to revise an offer or the solicitation. [Section 11-35-1530(6); R.19-445.2080] [02-2B055-1]

**CODE OF LAWS AVAILABLE (JAN 2006):** The South Carolina Code of Laws, including the Consolidated Procurement Code, is available at <http://www.scstatehouse.net/code/statmast.htm>. The South Carolina Regulations are available at: <http://www.scstatehouse.net/coderegs/statmast.htm>.

**COMPLETION OF FORMS / CORRECTION OF ERRORS (JAN 2006):** All prices and notations should be printed in ink or typewritten. Errors should be crossed out, corrections entered and initialed by the person signing the bid. Do not modify the solicitation document itself (including bid schedule). (Applicable only to offers submitted on paper.)

**DEADLINE FOR SUBMISSION OF OFFER (JANUARY 2006)** Any offer received after the Procurement Officer of the governmental body or his designee has declared that the time set for opening has arrived, shall be rejected unless the offer has been delivered to the designated purchasing office or the governmental bodies' mail room which services that purchasing office prior to the bid opening. [R.19-445.2070(H)]

**DISCLOSURE OF CONFLICTS OF INTEREST OR UNFAIR COMPETITIVE ADVANTAGE (MAY 2011):** You warrant and represent that your offer identifies and explains any unfair competitive advantage you may have in competing for the proposed contract and any actual or potential conflicts of interest that may arise from your participation in this competition or your receipt of an award. The two underlying principles are (a) preventing the existence of conflicting roles that might bias a

contractor's judgment, and (b) preventing an unfair competitive advantage. If you have an unfair competitive advantage or a conflict of interest, the state may withhold award. Before withholding award on these grounds, an offeror will be notified of the concerns and provided a reasonable opportunity to respond. Efforts to avoid or mitigate such concerns, including restrictions on future activities, may be considered.

**DRUG FREE WORK PLACE CERTIFICATION (JANUARY 2006)** By submitting an Offer, Contractor certifies that, if awarded a contract, Contractor will comply with all applicable provisions of The Drug-free Workplace Act, Title 44, Chapter 107 of the South Carolina Code of Laws, as amended.

**DUTY TO INQUIRE (JANUARY 2006)** Offeror, by submitting an Offer, represents that it has read and understands the Solicitation and that its Offer is made in compliance with the Solicitation. Offerors are expected to examine the Solicitation thoroughly and should request an explanation of any ambiguities, discrepancies, errors, omissions, or conflicting statements in the Solicitation. Failure to do so will be at the Offeror's risk. Offeror assumes responsibility for any patent ambiguity in the Solicitation that Offeror does not bring to the State's attention.

**ETHICS CERTIFICATE (May 2008):** By submitting an offer, the offeror certifies that the offeror has and will comply with, and has not, and will not, induce a person to violate Title 8, Chapter 13 of the South Carolina Code of Laws, as amended (ethics act). The following statutes require special attention: Section 8-13-700, regarding use of official position for financial gain; Section 8-13-705, regarding gifts to influence action of public official; Section 8-13-720, regarding offering money for advice or assistance of public official; Sections 8-13-755 and 8-13-760, regarding restrictions on employment by former public official; Section 8-13-775, prohibiting public official with economic interests from acting on contracts; Section 8-13-790, regarding recovery of kickbacks; Section 8-13-1150, regarding statements to be filed by consultants; and Section 8-13-1342, regarding restrictions on contributions by contractor to candidate who participated in awarding of contract. The state may rescind any contract and recover all amounts expended as a result of any action taken in violation of this provision. If contractor participates, directly or indirectly, in the evaluation or award of public contracts, including without limitation, change orders or task orders regarding a public contract, contractor shall, if required by law to file such a statement, provide the statement required by Section 8-13-1150 to the procurement officer at the same time the law requires the statement to be filed. [02-2A075-2]

#### **ILLEGAL IMMIGRATION CLAUSES (2008)**

Procurement Code Transactions: Non-Construction

**ILLEGAL IMMIGRATION (NOV. 2008):** (An overview is available at [www.procurement.sc.gov](http://www.procurement.sc.gov)) By signing your offer, you certify that you will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws and agree to provide to the State upon request any documentation required to establish either: (a) that Title 8, Chapter 14 is inapplicable to you and your subcontractors or sub-subcontractors; or (b) that you and your subcontractors or sub-subcontractors are in compliance with Title 8, Chapter 14. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony, and, upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." You agree to include in any contracts with your subcontractors language requiring your subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in their contracts with the sub-subcontractors language requiring the sub-subcontractors to comply with the applicable requirements of Title 8, Chapter 14. [07-7B097-1]

Procurement Code Transactions: Construction

By signing its bid or proposal, Contractor certifies that it will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws and agrees to provide to the State upon request any documentation required to establish either: (a) that Title 8, Chapter 14 is inapplicable both to Contractor and its subcontractors or sub-subcontractors; or (b) that Contractor and its subcontractors or sub-subcontractors are in compliance with Title 8, Chapter 14. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony, and, upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." Contractor agrees to include in any contracts with its subcontractors language requiring its subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in their contracts with the sub-subcontractors language requiring the sub-subcontractors to comply with the applicable requirements of Title 8, Chapter 14. (An overview is available at [www.procurement.sc.gov](http://www.procurement.sc.gov))

Other Transactions

By submitting an offer, Contractor certifies that it will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws (originally enacted as Section 3 of The South Carolina Illegal Immigration Reform Act, 2008 S.C. Act No. 280) and agrees to provide upon request any documentation required to establish either: (a) the applicability of Title 8, Chapter 14 to Contractor and any subcontractors or sub-subcontractors; or (b) the compliance with Title 8, Chapter 14 by Contractor and any subcontractor or sub-subcontractor. Pursuant to Section 8-14-60, "A person who knowingly makes or files any

false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony, and, upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." Contractor agrees to include in any contracts with its subcontractors language requiring the subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in any contracts with the sub-subcontractors language requiring the sub-subcontractor to comply with the applicable requirements of Title 8, Chapter 14.

**OMIT TAXES FROM PRICE (JANUARY 2006):** Do not include any sales or use taxes in Your price that the State may be required to pay.

**PROCUREMENT AGENT (AUG 2004)** Authorized Agent. All authority regarding the conduct of this procurement is vested solely with the responsible Procurement Officer. Unless specifically delegated in writing, the Procurement Officer is the only government official authorized to bind the government with regard to this procurement.

**PROTESTS (JUNE 2006)** Any prospective bidder, offeror, contractor, or subcontractor who is aggrieved in connection with the solicitation of a contract shall protest within fifteen days of the date of issuance of the applicable solicitation document at issue. Any actual bidder, offeror, contractor, or subcontractor who is aggrieved in connection with the intended award or award of a contract shall protest within ten days of the date notification of award is posted in accordance with this code. A protest shall be in writing, shall set forth the grounds of the protest and the relief requested with enough particularity to give notice of the issues to be decided, and must be received by the appropriate Chief Procurement Officer within the time provided. See clause entitled "Protest-CPO". [~ 11-35-4210]

**PUBLIC OPENING (JANUARY 2006)** Offers will be publicly opened at the date / time and at the location identified on the Cover Page, or last Amendment, whichever is applicable

**QUESTIONS FROM OFFERORS (JANUARY 2006):** (a) Any prospective offeror desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing. Questions must be received by the Procurement Officer no later than five (5) days prior to opening unless otherwise stated on the Cover Page. Label any communication regarding your questions with the name of the procurement officer, and the solicitation's title and number. Oral explanations or instructions will not be binding. Any information given a prospective offeror concerning a solicitation will be furnished promptly to all other prospective offerors as an Amendment to the solicitation, if that information is necessary for submitting offers or if the lack of it would be prejudicial to other prospective offerors. (b) The State seeks to permit maximum practicable competition. Offerors are urged to advise the Procurement Officer – as soon as possible – regarding any aspect of this procurement, including any aspect of the Solicitation that unnecessarily or inappropriately limits full and open competition.

**REJECTION/CANCELLATION (JAN 2004)** The State may cancel this solicitation in whole or in part. The State may reject any or all proposals in whole or in part. [SC Code Section 11-35-1710 & R.19-445.2065.]

**RESPONSIVENESS / IMPROPER OFFERS (JANUARY 2006)**

(a) Bid as Specified. Offers for supplies or services other than those specified will not be considered unless authorized by the Solicitation.

(b) Multiple Offers. Offerors may submit more than one Offer, provided that each Offer has significant differences other than price. Each separate Offer must satisfy all Solicitation requirements. If this solicitation is an Invitation for Bids, each separate offer must be submitted as a separate document. If this solicitation is a Request for Proposals, multiple offers may be submitted as one document, provided that you clearly differentiate between each offer and you submit a separate cost proposal for each offer, if applicable.

(c) Responsiveness. Any Offer which fails to conform to the material requirements of the Solicitation may be rejected as nonresponsive. Offers which impose conditions that modify material requirements of the Solicitation may be rejected. If a fixed price is required, an Offer will be rejected if the total possible cost to the State cannot be determined. Offerors will not be given an opportunity to correct any material nonconformity. Any deficiency resulting from a minor informality may be cured or waived at the sole discretion of the Procurement Officer. [R.19-445.2070 and Section 11-35-1520(13)]

(d) Price Reasonableness: Any offer may be rejected if the Procurement Officer determines in writing that it is unreasonable as to price. [R. 19-445.2070].

(e) Unbalanced Bidding. The State may reject an Offer as nonresponsive if the prices bid are materially unbalanced between line items or subline items. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the bid will result in the lowest overall cost to the State even though it may be the low evaluated bid, or if it is so unbalanced as to be tantamount to allowing an advance payment.

**RESTRICTIONS APPLICABLE TO OFFERORS (JANUARY 2006)** Violation of these restrictions may result in disqualification of your offer, suspension or debarment, and may constitute a violation of the state Ethics Act. (a) After issuance of the solicitation, ***you agree not to discuss this procurement activity in any way with the Using Governmental Unit or its employees, agents or officials.*** All communications must be solely with the Procurement Officer. This restriction may be lifted by express written permission from the Procurement Officer. This restriction expires once a contract has been formed. (b) Unless otherwise approved in writing by the Procurement Officer, ***you agree not to give anything to any Using Governmental Unit***

**SIGNING YOUR OFFER (JANUARY 2006)** Every Offer must be signed by an individual with actual authority to bind the Offeror. (a) If the Offeror is an individual, the Offer must be signed by that individual. If the Offeror is an individual doing business as a firm, the Offer must be submitted in the firm name, signed by the individual, and state that the individual is doing business as a firm. (b) If the Offeror is a partnership, the Offer must be submitted in the partnership name, followed by the words "by its Partner," and signed by a general partner. (c) If the Offeror is a corporation, the Offer must be submitted in the corporate name, followed by the signature and title of the person authorized to sign. (d) An Offer may be submitted by a joint venturer involving any combination of individuals, partnerships, or corporations. If the Offeror is a joint venture, the Offer must be submitted in the name of the Joint Venture and signed by every participant in the joint venture in the manner prescribed in paragraphs (a) through (c) above for each type of participant. (e) If an Offer is signed by an agent, other than as stated in subparagraphs (a) through (d) above, the Offer must state that it has been signed by an Agent. Upon request, Offeror must provide proof of the agent's authorization to bind the principal.

**STATE OFFICE CLOSINGS (JANUARY 2006)** If an emergency or unanticipated event interrupts normal government processes so that offers cannot be received at the government office designated for receipt of bids by the exact time specified in the solicitation, the time specified for receipt of offers will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal government processes resume. In lieu of an automatic extension, an Amendment may be issued to reschedule bid opening. If state offices are closed at the time a pre-bid or pre-proposal conference is scheduled, an Amendment will be issued to reschedule the conference. Useful information may be available at: [http://www.scemd.org/scgovweb/weather\\_alert.htm](http://www.scemd.org/scgovweb/weather_alert.htm).

**SUBMITTING CONFIDENTIAL INFORMATION (AUG 2002):** (An overview is available at [www.procurement.sc.gov](http://www.procurement.sc.gov)) For every document Offeror submits in response to or with regard to this solicitation or request, Offeror must separately mark with the word "CONFIDENTIAL" every page, or portion thereof, that Offeror contends contains information that is exempt from public disclosure because it is either (a) a trade secret as defined in Section 30-4-40(a)(1), or (b) privileged and confidential, as that phrase is used in Section 11-35-410. For every document Offeror submits in response to or with regard to this solicitation or request, Offeror must separately mark with the words "TRADE SECRET" every page, or portion thereof, that Offeror contends contains a trade secret as that term is defined by Section 39-8-20 of the Trade Secrets Act. For every document Offeror submits in response to or with regard to this solicitation or request, Offeror must separately mark with the word "PROTECTED" every page, or portion thereof, that Offeror contends is protected by Section 11-35-1810. All markings must be conspicuous; use color, bold, underlining, or some other method in order to conspicuously distinguish the mark from the other text. Do not mark your entire response (bid, proposal, quote, etc.) as confidential, trade secret, or protected! If your response, or any part thereof, is improperly marked as confidential or trade secret or protected, the State may, in its sole discretion, determine it nonresponsive. If only portions of a page are subject to some protection, do not mark the entire page. By submitting a response to this solicitation or request, Offeror (1) agrees to the public disclosure of every page of every document regarding this solicitation or request that was submitted at any time prior to entering into a contract (including, but not limited to, documents contained in a response, documents submitted to clarify a response, and documents submitted during negotiations), unless the page is conspicuously marked "TRADE SECRET" or "CONFIDENTIAL" or "PROTECTED", (2) agrees that any information not marked, as required by these bidding instructions, as a "Trade Secret" is not a trade secret as defined by the Trade Secrets Act, and (3) agrees that, notwithstanding any claims or markings otherwise, any prices, commissions, discounts, or other financial figures used to determine the award, as well as the final contract amount, are subject to public disclosure. In determining whether to release documents, the State will detrimentally rely on Offeror's marking of documents, as required by these bidding instructions, as being either "Confidential" or "Trade Secret" or "PROTECTED". By submitting a response, Offeror agrees to defend, indemnify and hold harmless the State of South Carolina, its officers and employees, from every claim, demand, loss, expense, cost, damage or injury, including attorney's fees, arising out of or resulting from the State withholding information that Offeror marked as "confidential" or "trade secret" or "PROTECTED". (All references to S.C. Code of Laws.)

**SUBMITTING YOUR OFFER OR MODIFICATION (JANUARY 2006)** (a) Offers and offer modifications shall be submitted in sealed envelopes or packages (unless submitted by electronic means) – (1) Addressed to the office specified in the Solicitation; and (2) Showing the time and date specified for opening, the solicitation number, and the name and address of the bidder. (b) If you are responding to more than one solicitation, each offer must be submitted in a different envelope or package. (c) Each Offeror must submit the number of copies indicated on the Cover Page. (d) Offerors using commercial carrier services shall ensure that the Offer is addressed and marked on the outermost envelope or wrapper as prescribed in paragraphs (a)(1) and (2) of this provision when delivered to the office specified in the Solicitation. (e) Facsimile or e-mail offers, modifications, or withdrawals, will not be considered unless authorized by the Solicitation. (f) Offers submitted by electronic commerce shall be considered only if the electronic commerce method was specifically stipulated or permitted by the solicitation.



**TAX CREDIT FOR SUBCONTRACTING WITH DISADVANTAGED SMALL BUSINESSES (JAN 2008):** Pursuant to Section 12-6-3350, a taxpayer having a contract with this State who subcontracts with a socially and economically disadvantaged small business is eligible for an income tax credit equal to four percent of the payments to that subcontractor for work pursuant to the contract. The subcontractor must be certified as a socially and economically disadvantaged small business as defined in Section 11-35-5010 and regulations pursuant to it. The credit is limited to a maximum of fifty thousand dollars annually. A taxpayer is eligible to claim the credit for ten consecutive taxable years beginning with the taxable year in which the first payment is made to the subcontractor that qualifies for the credit. After the above ten consecutive taxable years, the taxpayer is no longer eligible for the credit. A taxpayer claiming the credit shall maintain evidence of work performed for the contract by the subcontractor. The credit may be claimed on Form TC-2, "Minority Business Credit." A copy of the subcontractor's certificate from the Governor's Office of Small and Minority Business (OSMBA) is to be attached to the contractor's income tax return. Questions regarding the tax credit and how to file are to be referred to: SC Department of Revenue, Research and Review, Phone: (803) 898-5786, Fax: (803) 898-5888. Questions regarding subcontractor certification are to be referred to: Governor's Office of Small and Minority Business Assistance, Phone: (803) 734-0657, Fax: (803) 734-2498. [02-2A135-1]

**TAXPAYER IDENTIFICATION NUMBER (JANUARY 2006):** (a) If Offeror is owned or controlled by a common parent as defined in paragraph (b) of this provision, Offeror shall submit with its Offer the name and TIN of common parent.

(b) Definitions: "Common parent," as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member. "Taxpayer Identification Number (TIN)," as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(c) If Offeror does not have a TIN, Offeror shall indicate if either a TIN has been applied for or a TIN is not required. If a TIN is not required, indicate whether (i) Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States; (ii) Offeror is an agency or instrumentality of a state or local government; (iii) Offeror is an agency or instrumentality of a foreign government; or (iv) Offeror is an agency or instrumentality of the Federal Government.

**WITHDRAWAL OR CORRECTION OF OFFER (JANUARY 2006)** Offers may be withdrawn by written notice received at any time before the exact time set for opening. If the Solicitation authorizes facsimile offers, offers may be withdrawn via facsimile received at any time before the exact time set for opening. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for opening, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid. The withdrawal and correction of Offers is governed by S.C. Code Section 11-35-1520 and Regulation 19-445.2085.

## **II. Instructions To Offerors - B. Special Instructions**

### **SUBMISSION OF QUESTIONS**

**Mark envelopes on questions mailed:**

**QUESTIONS: USC-IFB-2371-KS**

**Title: New Motor Coach**

**Attn.: Kevin Sanders**

**QUESTIONS MAY BE E-MAILED TO: [ksanders@mailboc.sc.edu](mailto:ksanders@mailboc.sc.edu)**

**FAXED TO: 803-777-2032**

DESCRIPTIVE LITERATURE – LABELLING (JAN 2006): Include offeror's name on the cover of any specifications or descriptive literature submitted with your offer.

DESCRIPTIVE LITERATURE – REQUIRED (JAN 2006): Your offer must include manufacturer's latest literature showing complete product specifications.

DISCUSSIONS WITH BIDDERS (JAN 2006) After opening, the Procurement Officer may, in his sole discretion, initiate discussions with you to discuss your bid. Discussions are possible only if your bid is apparently responsive and only for the purpose of clarification to assure your full understanding of the solicitation's requirements. Any discussions will be documented in writing and shall be included with the bid.

PREFERENCES - A NOTICE TO VENDORS (SEP. 2009): On June 16, 2009, the South Carolina General Assembly rewrote the law governing preferences available to in-state vendors, vendors using in-state subcontractors, and vendors selling in-state or US end products. This law appears in Section 11-35-1524 of the South Carolina Code of Laws. A summary of the new preferences is available at [www.procurement.sc.gov/preferences](http://www.procurement.sc.gov/preferences). **ALL THE PREFERENCES MUST BE CLAIMED AND ARE APPLIED BY LINE ITEM, REGARDLESS OF WHETHER AWARD IS MADE BY ITEM OR LOT. VENDORS ARE CAUTIONED TO CAREFULLY REVIEW THE STATUTE BEFORE CLAIMING ANY PREFERENCES. THE REQUIREMENTS TO QUALIFY HAVE CHANGED. IF YOU REQUEST A PREFERENCE, YOU ARE CERTIFYING THAT YOUR OFFER QUALIFIES FOR THE PREFERENCE YOU'VE CLAIMED. IMPROPERLY REQUESTING A PREFERENCE CAN HAVE SERIOUS CONSEQUENCES.** [11-35-1524(E)(4)&(6)]

PREFERENCES - SC/US END-PRODUCT (SEP 2009): Section 11-35-1524 provides a preference to vendors offering South Carolina end-products or US end-products, if those products are made, manufactured, or grown in SC or the US, respectively. An end-product is the tangible project identified for acquisition in this solicitation, including all component parts in final form and ready for the use intended. The terms "made," "manufactured," and "grown" are defined by Section 11-35-1524(A). By signing your offer and checking the appropriate space(s) provided and identified on the bid schedule, you certify that the end-product(s) is either made, manufactured or grown in South Carolina, or other states of the United States, as applicable. Preference will be applied as required by law. Post award substitutions are prohibited. See "Substitutions Prohibited - End Product Preferences (Sep 2009)" provision.

PREFERENCES - RESIDENT VENDOR PREFERENCE (SEP 2009): To qualify for the RVP, you must maintain an office in this state. An office is a nonmobile place for the regular transaction of business or performance of a particular service which has been operated as such by the bidder for at least one year before the bid opening and during that year the place has been staffed for at least fifty weeks by at least two employees for at least thirty five hours a week each. In addition, you must either: (1) maintain at a location in South Carolina at the time of the bid an inventory of expendable items which are representative of the general type of commodities for which the award will be made and which have a minimum total value, based on the bid price, equal to the lesser of fifty thousand dollars [\$50,000] or the annual amount of the contract; or (2) be a manufacturer headquartered and having an annual payroll of at least one million dollars in South Carolina and the end product being sold is either made or processed from raw materials into a finished end product by that manufacturer or its affiliate (as defined in Section 1563 of the Internal Revenue Code).

#### **PROTEST - CPO - ITMO ADDRESS (JUNE 2006)**

Any protest must be addressed to the Chief Procurement Officer, Information Technology Management Office, and submitted in writing (a) by email to [protest-itmo@itmo.sc.gov](mailto:protest-itmo@itmo.sc.gov), (b) by facsimile at 803-737-0102, or (c) by post or delivery to 1201 Main Street, Suite 430, Columbia, SC 29201. [02-2B120-1]

UNIT PRICES REQUIRED (JAN 2006): Unit price to be shown for each item.

### III. Scope of Work / Specifications

DELIVERY / PERFORMANCE LOCATION – PURCHASE ORDER (JAN 2006): After award, all deliveries shall be made and all services provided to the location specified by the Using Governmental Unit in its purchase order.

Vehicle must meet or exceed the following specifications:

## Standards & Regulations Compliance

This Standard Coach Specification provides a general description of the basic Motor Coach the University is requesting.

The basic coach features described within this specification will be in compliance with, at the time of manufacture, the following Standards and Regulations:

### Code of Federal Regulations, (CFR), No. 49:

Part 325 - Compliance with Interstate Motor Carrier Noise Emission Standards

### Federal Motor Vehicle Safety Standards, (FMVSS), part 571 of CFR No. 49, (Code of Federal Regulations):

- 101 Controls and Displays.
- 102 Transmission shift lever sequence, starter interlock and transmission braking effect.
- 103 Windshield defrosting and defogging systems.
- 104 Windshield wiping and washing systems.
- 106 Brake hoses.
- 107 Reflecting surfaces.
- 108 Lights, reflective devices and associated equipment.
- 111 Rear view mirrors.
- 115 Vehicle identification number - basic requirements.
- 120 Tires selection and rims for motor vehicles other than passenger cars.
- 121 Air Brake systems.
- 124 Accelerator control systems.
- 125 Warning devices.
- 205 Glazing materials.
- 207 Seating systems
- 208 Occupant crash protection.
- 209 Seat belt assemblies.
- 210 Seat belt assembly anchorages.
- 217 Bus window retention and release.
- 302 Flammability of interior materials.

### Canadian Motor Vehicle Safety Standards, (CMVSS):

- 101 Controls and Displays.
- 102 Transmission shift lever sequence, starter interlock and transmission braking effect.
- 103 Windshield defrosting and defogging systems.
- 104 Windshield wiping and washing systems.
- 106 Brake hoses.
- 107 Reflecting surfaces.
- 108 Lights, reflective devices and associated equipment
- 108.1 Head lights
- 111 Rear view mirrors
- 115 Vehicle identification number - basic requirements.

- 120 Tires selection and rims for motor vehicles other than passenger cars.
- 121 Air Brake systems.
- 124 Accelerator control systems.
- 125 Warning devices.
- 203 Impact protection.
- 205 Glazing materials.
- 207 Seating systems
- 208 Occupant crash protection.
  - 209 Seat belt assemblies.
  - 210 Seat belt assembly anchorages.
  - 217 Bus window retention and release.
  - 302 Flammability of interior materials.
    - 1101 Emission device.
    - 1102 Crankcase emission.
    - 1103 Exhaust emissions.
    - 1104 Diesel opacity.
    - 1106 Noise.

**Federal Communications Commission:**

Part 15 - Radio Frequency Devices - Class B

**Food and Drug Administration, CFR No. 21:**

Part 1250 - Interstate Conveyance Sanitation, 1966 handbook.

**Federal Motor Carrier Safety Regulations, (FMCSR):**

**Subpart B, paragraph 393:**

- .9 Lights operable
- .11 Lighting devices and reflectors
- .19 (A) Requirements for turn signal systems
- .22 Combination of lighting devices and reflectors
- .23 Lighting devices to be electric
- .24 Requirements for head lights and auxiliary road lighting lights
- .25 Requirements for lights other than head lights
- .26 Requirements for reflectors
- .27 Wiring specifications
- .28 Wiring to be protected
- .29 Grounds
- .30 Battery installation
- .33 Wiring installation

**Subpart C, paragraph 393:**

- .40 Required brake systems
- .41 Park brake system
- .42 Brakes required on all wheels
- .44 Front brake lines, protection
- .45 Brake tubing and hose, adequacy
- .46 Brake tubing and hose connections
- .47 Brake lining
- .48 Brakes to be operative
- .49 Single valve to open all brakes
- .50 Reservoirs required
- .51 Warning devices and gauges
- .52 Brake performance
- .53 (B&C) Automatic brake adjusters and brake adjustment indicators

**Subpart D, paragraph 393:**

- .60 Glazing and specified openings
- .61 (B-2 & C-2) Window construction
- .62 Window obstructions
- .63 (B) Windows, markings

**Subpart E, paragraph 393:**

- .65 All fuel systems
- .67 Liquid fuel tanks
- .69 Liquefied petroleum gas systems

**Subpart G, paragraph 393:**

- .75 Tires
- .77 Heaters
- .78 Windshield wipers
- .79 Defrosting systems
- .80 Rear vision mirrors
- .81 Horn
- .82 Speedometer
- .83 Exhaust systems
- .84 Floors
- .86 Rear end protection
- .88 Television receivers
- .89 Buses, drive shaft protection
- .90 Buses, standee line or bar
- .91 Buses, aisle seats prohibited
- .92 Buses, marked emergency doors
- .93 Seats, seat belt assemblies and seat belt assembly anchorage□
- .94 Vehicle interior noise levels

- If, for whatever reason, descriptions within this document conflict with the applicable Standard or Regulation, the Standard or Regulation shall take precedence.
- Only the basic features of those coaches delivered after the effective date are described in this document.

## **DIMENSIONS**

### **NOTES:**

***The following notes are applicable where indicated, all dimensions provided are nominal:***

- I** Includes front and rear energy-absorbing bumpers.
- II** Excludes fenders, splash guards, mirrors and side turn lights.
- III** Dimensions are based on coach in a normal operating position using 315/80R22.5 tubeless tires.
- IV** Track dimensions are based on using aluminium wheels.
- V** Departure angles take into account installed ferry skids.
- VI** Dimension is based on a door to doorframe measurement, above the door hinge cover.

VII Vehicle weight could vary from coach to coach, depending on equipment specified.

VIII Includes a full complement of fuel, oil, water and all other applicable fluids.

<b>LENGTH</b>	<b>ft./in</b>	<b>m</b>
Over body	45'	13.71
Over bumpers <sup>I</sup>	45' 7"	13.89

<b>WIDTH <sup>II</sup></b>	<b>in</b>	<b>mm</b>
Overall - body, front	92.00	2,337
- body, rear	102.00	2,591

<b>HEIGHT <sup>III</sup></b>	<b>in</b>	<b>mm</b>
Overall: - over roof hatches	140.75	3,575
- over roof	139.50	3,543

<b>WHEEL-BASE</b>	<b>in</b>	<b>mm</b>
Center front axle to center drive axle	315.00	8,000
Center drive axle to center trailing axle	49.00	1,245

<b>OVERHANG</b>	<b>in</b>	<b>mm</b>
Front body (over bumper)	78.25	1,988
Rear body (over bumper)	150.25	3,816

<b>TRACK <sup>IV</sup></b>	<b>in</b>	<b>mm</b>
Front	84.9	2,156
Driving (center of duals)	75.4	1,915
Trailing	84.9	2,156

<b>TURNING RADIUS <sup>III</sup></b>	<b>ft</b>	<b>m</b>
Front body (with bumper)	47'	14.3
Steering wheel turns, lock-to-lock		5.7 turns

<b>BUMPER CLEARANCE <sup>III</sup></b>	<b>in</b>	<b>mm</b>
Ground to center line: - front (apex)	14.00	356
- rear	18.00	457.20

<b>GROUND CLEARANCE <sup>III</sup></b>	<b>in</b>	<b>mm</b>
Ground to body at center	12.14	308.36

Approach angle	9.5 degrees
Departure angle – centred (non-steering at departure point)	8.0 degrees
Departure angle – At the rear outer corners (If the coach is turning left or right at the departure point)	6.0 degrees
Break-over angle	8.8 degrees

<b>ENTRANCE STEP HEIGHT <sup>III</sup></b>	<b>in</b>	<b>mm</b>
Ground to first step: - coach in normal operating position	16.00	406.40
- with coach in kneeled position	11.25	285.75

<b>FLOOR HEIGHT FROM GROUND (at axle) <sup>III</sup></b>	<b>In</b>	<b>mm</b>
Main floor (rear of theatre rows)	59.00	1,498.60
	<b>in</b>	<b>mm</b>

### **HEADROOM**

Aisle to ceiling	- Front (entrance at front of first seat)	84.25	2,139.95
	- Rear	78.25	1,987.55
Floor to parcel rack	- Front (at rear of first seat)	63.00	1,600.20
	- Front ( at front of first seat)	66.00	1,676.40
	- Rear	60.00	1,524.00

<b>PASSENGER, SIDE WINDOW ELEVATION</b>	<b>in</b>	<b>mm</b>
Floor surface to glass line main floor area: - Top	68.50	1,739.90
- Bottom	32.70	830.58

<b>ENTRANCE DOOR</b>	<b>in</b>	<b>mm</b>
Clear opening width <sup>VI</sup>	28.75	762.00
Height of clear opening	89.50	2,273.30

<b>EMERGENCY ESCAPE ROOF HATCHES</b>	<b>in</b>	<b>mm</b>
Length of opening, each	22.75	578.00
Width of opening, each	22.75	578.00
<b>Total Clear Opening Area (for each)</b>	518.00 in <sup>2</sup>	3342.00 cm <sup>2</sup>

<b>AISLE</b>	<b>in</b>	<b>mm</b>
Length of aisle ramp	96.00	2,438.00
Minimum width between seats	14.00	355.60

<b>VEHICLE WEIGHT <sup>VII</sup></b>	<b>lbs</b>	<b>kg</b>
Net basic <sup>VIII</sup>	35,500	16,102
Payload capacity	18,500	8,392

Gross vehicle weight

54,000

24,494



# CAPACITIES

<b>BAGGAGE COMPARTMENT VOLUME (under floor)</b>	<b>ft<sup>3</sup></b>	<b>m<sup>3</sup></b>
Front	184.00	5.21
Center	146.00	4.13
Rear	100.00	2.83
Special wheelchair lift compartment <sup>IX</sup>	15.00	0.43
<b>Total Volume <sup>X</sup></b>	<b>445.00</b>	<b>12.60</b>

<b>LAVATORY TANK CAPACITY</b>	<b>US gal</b>	<b>L</b>
Primary holding tank	16.00	60.56
Secondary holding tank	20.00	75.70
<b>Total Volume</b>	<b>36.00</b>	<b>136.26</b>
Fresh water tank	10.00	37.85

<b>PARCEL RACK COMPARTMENT VOLUME <sup>XI</sup></b>	<b>ft<sup>3</sup></b>	<b>m<sup>3</sup></b>
Roadside	81.30	2.30
Curbside :	68.70	1.95
<b>Total Volume <sup>XI</sup></b>	<b>150.00</b>	<b>4.25</b>

<b>AIR SYSTEM RESERVOIR CAPACITY</b>	<b>in<sup>3</sup></b>	<b>cm<sup>3</sup></b>
Supply reservoir	2,050	33,600
Front service reservoir	2,050	33,600
Rear service reservoir	2,050	33,600
Parking brake release reservoir	1,200	19,668
Accessories reservoir	2,050	33,594
Front Suspension dual reservoir	1,280	20,975
<b>Total Volume</b>	<b>10,680</b>	<b>175,037</b>

<b>COOLING SYSTEM CAPACITY</b>	<b>US gal</b>	<b>L</b>
Engine coolant reservoir	25	94.63

<b>FUEL TANK CAPACITIES</b>	<b>US gal</b>	<b>L</b>
Main tank capacity – Total volume	221	836
	210	795

a) *Useable volume*  
 – 95% of total volume

<b>STEERING SYSTEM CAPACITY</b>	<b>US Qts</b>	<b>L</b>
Power steering fluid reservoir capacity	7.5	7.1

## TRANSMISSION FLUID CAPACITY<sup>xii</sup>

	2. l	3.
Allison Gen IV B500 Automatic Transmission w/o Retarder	12.8	41.1

## HVAC COMPRESSOR

in <sup>3</sup>	L
39.4	0.65

## REFRIGERANT CAPACITY

	lbs	kg
R134a – AC System with Receiver Tank	22.5	10.2

# AXLES

## Front Axle

The Meritor Series FH 941KX6 front axle or approved equal, rated at 16,500 lbs gross axle capacity, will feature:

- Drop center forged I-beam
- Nodular cast iron hubs
- Straight king pins
- Low-friction king pin bushings
- “Unitized” wheel bearings
- Heavy-duty, serviceable tie rod ends
- *Autophoretic*-painted tie rod ball joint and tube threads
- Hub pilot wheel mounting
- 51° lock turn angle with correct Ackerman geometry for wheel base
- Adjustable caster set at a positive 3°
- Integral jacking pads

## Drive Axle

The Meritor Series RC23162NFKF59, full-floating type or approved equal, with a gross axle capacity of 23,000 lbs, will feature:

- Pressed steel housing
- Magnetic drain plug and magnets installed in the bottom of the housing
- Nodular cast iron hubs
- Hub pilot mounted outer and inner wheels
- Pre-set wheel bearings
- *Meritor’s Quiet-Ride*® gear for reduced noise level
- Lubricant fill provision in the hub
- Unitized Teflon high temperature wheel bearing oil seals
- Non-replaceable integral load tubes
- Integral jacking pads

A single reduction differential will be available in 3.73:1 ratio with the basic Allison B500 transmission without retarder.

The differential ring and pinion gears will be mounted on tapered roller bearings, and the ring gear will be bolted to the differential case.

## Trailing Axle

The Meritor Series MC 16003NSNK6 or approved equal, with a gross axle capacity of 16,500 lbs, will feature:

- Non-steerable tag axle with built-in support structure
- Nodular cast iron hubs
- “Unitized” wheel bearings
- Hub pilot wheel mounting
- Caster set at a positive 3°
- Integral jacking pads

# BODY

## Construction

The body is of a semi-monocoque construction, using three cross-sections. The exterior shell framework will be made of T304 stainless steel square and rectangular tubing, sheet, and plate or approved equal. The tubing will measure:

- 1.00 x 2.00 x .093 inches (25.40 x 50.80 x 2.11 mm)
- 1.57 x 1.97 x 0.06 inches (40.00 x 50.00 x 1.50 mm)
- 1.97 x 1.97 x 0.06 inches (50.00 x 50.00 x 1.50 mm)
- 1.97 x 1.97 x 0.08 inches (50.00 x 50.00 x 2.00 mm)
- 1.97 x 2.95 x 0.08 inches (50.00 x 75.00 x 2.00 mm)
- 1.97 x 2.95 x 0.12 inches (50.00 x 75.00 x 3.00 mm)

Major suspension-bearing members will be made of high-strength low-alloy (HSLA), corrosion-resistant steel.

## Exterior Body Panels

The exterior body panels will be a mix of high-tensile pre-primed aluminum, high tensile paintable powder-coated extruded aluminum (drip moldings), and molded composite panels.

### *Exterior body panels will feature:*

- Dissimilar metallic roof panel-to-frame joints filled with urethane adhesive
- Composite fixed panels attached with urethane and methacrylate adhesives and stainless steel structural rivets
- Composite removable panels attached with corrosion resistant fasteners
- Suspension and bogie structures coated with an epoxy paint
- No exposed panel fasteners
- Dissimilar metals separated by mastic or Mylar tape

## Frame

**Substructure** - two welded HSLA steel structures will form the coach under-structure at the front and drive axle locations. They will form the base for the air suspension. Those at the rear will also connect to the engine/transmission cradle rails extending rearward.

## Towing Provision

### *Provision for towing will be as follows:*

- Tow eyes will be installed at the front of the coach, nominal 2 inches (51 mm) in diameter, under the spare tire compartment trusses..
- At the rear of the coach, there will be tow eyes, nominal 1.5 inches (38.1 mm) in diameter, on the engine rails.

When the coach is towed, air will be provided to the coach air system through connections in the front roadside service compartment under the front junction box. It will be easy to operate the service brakes from the towing vehicle.

## Exterior Panels

### **Front Roof Cap and Body Panel**

The front roof cap will be a one-piece glass fiber reinforced plastic panel extending from the coach B-post to the top of the front bumper. It will include molded recessed housings for the headlamp turn signal and clearance lamp assemblies, identification and clearance lights.

### **Front Exterior Transom Panels**

The areas above the entrance door and driver's window will be painted black.

## **Rear Roof Cap and Body Panel**

The rear roof cap will be a one-piece glass fiber reinforced plastic panel extending from the rear most passenger side sashes and the rear of the roof panel to the top of the rear bumper. It will include molded recessed housings for the marker, clearance, turn and backup tail lights. The rear roof cap will also house side windows for the lavatory and the rear cross-seat.

## **Main Roof Panel**

The panel will be single sheet, 0.04-inch (1.016-mm), high tensile primed and painted aluminum installed with high strength structural rivets and urethane structural adhesive or approved equal.

## **Side Panels**

The one-piece panel below the side windows and above the floor line will be made of glass fiber reinforced plastic, bonded with adhesive, and mechanically retained within stainless steel channels.

All panels below the floor line that will be exposed to possible corrosion, including baggage door panels will be made of fiber reinforced plastic.

## **Exterior Moldings**

High-tensile, extruded aluminum drip moldings will extend along both sides of the entire coach above the window line, with a deep drainage trough molded through the front and rear roof caps. The drip moldings will be powder-coated and paintable.

## **Bumpers**

### **Rear bumper**

The energy-absorbing, molded, paintable, fiber-reinforced plastic rear bumper will be a nominal 19.5 inches in height. The center portion will be removable for engine access and removal.

Paintable molded corner bumperettes will be mounted at the rear corners of the coach.

### **Front bumper**

The three-piece, energy-absorbing front bumper will be nominally 23.88 inches in height. It will be made of molded, paintable, fiber-reinforced plastic. The center section will be hinged at the bottom for access to the spare tire. Two recessed areas in the bumper will be provided as provisions for fog lights, as well as provision for two license plates at the center. The bumper release lever will be at the top of the front roadside service compartment.

## **Wheel Housing**

Stainless steel wheel housings will be provided below the floor line.

## **Fender Extension**

Removable one-piece, molded, paintable, resilient polymer fender extensions, fastened with corrosion-resistant retainers, will be installed at the front and rear wheel housings.

## **Splash Guards**

Rubber splashguards, nominally 19 inches (483 mm) wide, will be provided for all wheels.

## **Baggage Compartments and Doors**

There will be three full-width under-floor baggage compartments, offering a nominal capacity of 430.00 ft<sup>3</sup>, between the front and rear axles. The front and rear compartment bulkheads will be stainless steel. The

floors are of aluminum corrugated panels. The compartment is illuminated by a switch on the right hand dash.

Compartment doors will be sealed pantograph vertical-lift types. They will have independent road- and curbside electric and manual keyed locking systems. Each door will:

- Have flush-mounted, hinged latch handles with integral FoMoCo keyed-alike locks or approved equal which can override the dash-controlled electric door locks
- Have stainless steel latch bars
- Be counter-balanced with two springs
- Have an automatic safety hold-open device which is released by lifting the latch handle
- Have a door-mounted, radiused-corner, full-circumference bulb seal
- Have nominal door sizes of 68 x 41 inches for the four large doors (two on each side) and 48 x 41 inches for the two rear-most doors (one on each side)
- Have a replaceable aluminum exterior panel bonded to an aluminum frame

The two smaller doors and four larger doors will be interchangeable. Rubber bumpers will prevent the doors from striking the coach body when opened.

### **Spare Compartment**

Additional baggage can be stored in the special wheel-chair lift compartment on the curbside of the coach, to the rear of the trailing axle, if available.

### **Service Doors**

#### **Spare Tire Access Door**

The spare tire will be accessible through the front center bumper which will be held open by an over-center latching link. The front center bumper will be hinged at the bottom, and counter-balanced by a plated coil spring. The release handle will be accessible through the left front service door.

#### **Front Roadside Service Door**

The asymmetric door, hinged at the forward edge with stainless steel, will be nominally 35.38 x 56.88 inches at the extreme positions. It will be a two-piece, (inner and outer), composite sandwich panel assembly located below the driver's window on the roadside of the coach. The door will be held closed by two latches operated by an interior actuator.

***This door will provide access to these components:***

- Parking brake emergency air tank charging valve
- Steering components
- Windshield washer reservoir
- Horns
- Front junction box
- Spare tire compartment access door release

#### **Condenser Compartment Door**

This door is located on the road side of the coach, between the no. 3 baggage compartment and the rear wheel housing, the condenser compartment door will feature:

- Front four bar link stainless steel hinged door of fiberglass construction opened by a release latch in the roadside fuel pocket
- Single latch
- Fiberglass-reinforced plastic over an aluminum frame construction, nominally 54.55 x 45.25 inches Integral keyed-alike, lockable fuel filler access door

This door will provide access to the fixed (45°-angle) condenser, fans, filter/dryer and other air conditioning components.

### **Rear Curbside Service Door**

This door will be located at the rear curbside of the coach and will open into the engine compartment. It will measure a nominal 23.88 x 45.13 inches at the extreme positions, tapered upwards towards the rear. It will be a front four-bar link stainless steel hinged door of fiberglass construction.

The door latch will be activated by a paddle-type handle with an integral FoMoCo keyed-alike lock or approved equal, and held closed by two latches operated by a central actuator. A built-in air-cooling vent for alternators is located above the handle.

#### ***This door will provide access to:***

- Air conditioning compressor,
- Lavatory dump valves,
- Right rear tail lights,
- Rear engine compartment door release,
- Engine Manual DPF Regen Switch.

### **Rear Engine Compartment Door**

This door is located at the rear of the coach, above the bumper, providing access to the engine compartment. It will be made of fiberglass reinforced plastic over an aluminum frame, nominally 80.63 wide x 41.88 inches high at the extreme positions and tapered from top to bottom with a bottom width of 79.88. A release lever accessible through the rear curbside service door will activate it. It will be operated by, and held open by gas springs, and it will be four-bar link top-hinged. The exterior of the door will include a recessed pocket capable of housing two licence plates.

#### ***This door will provide access to:***

- Rear junction box
- Air cleaner and air cleaner filter minder
- Power steering reservoir
- Engine and transmission oil dip sticks
- Surge tank sight gauge
- Fan drive belt gear box and gear box oil level sight gauge
- Alternator drive belts
- Air conditioning compressor drive belt and oil level sight gauge
- Auxiliary heater (Optional Installation)
- Radiator door release

### **Radiator-Access Door**

The radiator access door is located below the floor line at the rear roadside of the coach, between the rear wheel housing and the rear bumper. It will be made of fiberglass reinforced plastic over an aluminum frame, and will measure a nominal 65.38 x 45.13 inches at the extreme positions. It will be tapered outwards from bottom to top and to front, and will be front-hinged. The door will be held closed by a spring-loaded latch, and operated by a lever located on the roadside of the rear engine compartment.

This door will provide access to the engine compartment, as well as the radiator and charge air cooler, which will be mounted side by side.

### **Filler Door and Fuel Tank Access**

The diesel fuel and DEF tanks will be accessed and removed through a removable access panel located between the battery door and rear fender. There will be two diesel filler doors, one in the condenser compartment door on the roadside of the coach and one in the fuel tank access panel on the curbside of the coach. Both filler doors, made of aluminum, will be forward-hinged and locking. There will also be a separate DEF filling door of aluminum construction that is forward hinging and lockable.

### **Battery Compartment Access Door**

This door will be a nominal 45.25 x 29.25 inches, will be sealed, pantograph, made of fiberglass reinforced plastic. The door is of the vertical lift type. It will be on the curbside of the coach, between the no. 3 baggage compartment and the fuel tank access panel. The door will have these features:

- Two latches, to hold door closed,
- One gas spring to hold door open,
- Battery disconnect switch with LOCKOUT/ TAGOUT feature for maintenance purposes,
- Small integral, stainless steel hinged, fiberglass access panel with keyed-alike lock offering access to the battery main disconnect switch,
- Release latch located by the battery main disconnect switch access panel,

This door will provide access to the batteries, main disconnect switch, battery equalizer, ignition bypass switch, fuse box with spare fuses. The HVAC filter access panel is located at the rear of the compartment.

## **Entrance Door**

An electrically controlled, air-operated, power sedan-style door with keyed lock will be located forward of the right front wheel.

The air operated latch assembly and air cylinder will be accessible through an ABS panel in the passenger modesty panel. The entrance door operating air cylinder and damper will be accessible through the front spare tire compartment. The entrance door control module will be accessible through a second access panel in the passenger modesty panel closer to the vestibule area.

The asymmetric door will have a nominal clear opening width of 28.75 inches from the entrance step up to a height of 34.25 inches. A nominal clear opening of 30.25 inches will continue for the balance of the vertical plane until the door opening begins to slope rearward. The clear door opening height will be a nominal 89.50 inches.

A drip rail will be located above entrance door opening.

### ***The Entrance Door will feature:***

- Mainly composite construction
- Color-coordinated cut pile fabric covered panels, one between the main and secondary windows and one for the kick panel in the lower portion
- Stainless steel lower and upper hinge pins which pivot inside spherical bearings
- Double-glazed glass window in upper section of door
- Molded self skinned polyurethane foam over steel tube diagonal grab rail of 1.5 inches in diameter with a 1.5 inch knuckle clearance
- Dark gray acrylic window in lower section of door
- Momentary switch providing door control for the driver, located in the right hand switch panel
- Automatic air lock (main and upper door locks) with an air dump valve located at the right-hand side of the steering column under the dash. The air lock will be automatically activated by a proximity sensor near the main locking mechanism
- Remote external touch-type door control with raised "Open/Closed" symbol touch pads beside the entrance door.

## **License Plate Holders**

License plate holders will be provided as follows:

- One recessed, lighted housing, with bolts and nylon nuts for up to two license plates, will be provided at the rear of the coach in the rear engine compartment door.

## **Exterior Mirrors**

Two electrically operated and heated remote controlled exterior rear view mirrors will be mounted at each front windshield outer post.

Mirrors will be capable of folding against the coach, and will be attached to the coach so as to minimize vibration and loss of adjustment.



### ***The mirrors will feature:***

- Nominal distance of 72 inches from the ground with coach in normal operating position
- Plate glass, nominal 8 x 12.25 inches in size with a separate trapezoid convex mirror, mounted just above, measuring a nominal 4.25 x 6 inches at the extreme width and height positions of each mirror
- Paintable plastic mirror covers with mirror arms and brackets made of aluminum with a paintable powder-coated black finish
- Individual remote controls for the plate glass and convex mirrors; controls are located in the left hand driver's console

## **Exterior Painting and Lettering**

### **Exterior Painting**

DuPont Imron Elite SS high gloss two component polyurethane enamel – White – N5793EA or approved equal will be applied on all exterior paintable areas of the coach.

***NOTE: Aluminum wheels and hub covers will not be painted.***

The roof area will be painted white only. Dark color bands shall not extend above the roof drip molding.

### **Legal Lettering**

Coach (fleet) numbers, can be supplied and installed at required locations.

### **“Reserved for Driver” Decal**

A “Reserved for Driver” decal will be applied to the parcel rack handrail to reserve the first parcel rack compartment on the roadside for storing the driver's personal belongings.

## **Insulation**

### **Thermal**

*The following thermal insulation will be integrated into the coach construction:*

- 1.75-inch polyisocyanurate roof panels
- 1.75-inch polyisocyanurate sidewall panels
- Insulated front frame below the windshield using foamed-in-place polyurethane insulation, nominal 1.75 inches thick
- 1-inch polystyrene foam blocks under the center tunnel

### **Acoustical**

*The following acoustical insulation will be integrated into the coach construction:*

- Barrier/absorber composite foam acoustic material, 1.44 to 2.00 inches thick, strategically placed to target attenuation and minimize sound pressure levels throughout the coach
- Acoustical damping material bonded to the interior side of the wheel housings.
- Blanket of 0.5-inch thick silver Mylar-faced absorption foam material which will line the engine compartment between the engine compartment and the passenger cabin to optimize the overall attenuation

## **Floor**

The floor will be composed of 0.5-inch plywood panels attached to the under-frame with urethane adhesive and rivets.

The floor will be flat throughout except for an 8-foot long ramp in the aisle section at the front. The ramp will be stepped a nominal 6 inches, and will extend past the first two rows of passenger seats. See the diagram below.

The floor will be covered with RCA TR-766 grey-colored, non-slip 0.10-inch thick rubber with butt cut welded type joints. A contrasting white standee line will be provided in the aisle at the front of the coach to comply with Department of Transportation (DOT) guidelines.

A contrasting white triangular zone in the aisle at the front of the coach, a 3-inch white nosing stripe on the edge of each step, and a violation decal above the entrance door will be provided as required by the Department of Transportation (DOT).

## **Stepwell**

The 30-inch curved stepwell or approved equal will be made of fiberglass and will include:

- Five steps of not more than nominal 7.44 inches in height,
- Heated air supplied by the driver's HVAC system,
- Two 15-candlepower lights: one in the ceiling above the door and one in the lower portion of the door below the second window,
- One continuous recessed grab rail running diagonally along each side of the entrance. The rails will be a nominal 1.5 inches in diameter, and will be made of molded self-skinned polyurethane foam over steel tubing, with 1.75-inch knuckle clearances. There will be an integral grab handle at the top of the rail on the dash side of the stepwell,
- RCA TR-766 grey-colored, ribbed, non-slip, step treads with a contrasting 3-inch white nosing.

## **Interior Panels**

*Interior panelling will be provided. It will include:*

### **Construction**

- Sculpted, ABS plastic molded panels, at the rear interior enclosure panel around the rear cross-seat, and in the entrance area: over the driver's window and entrance door, driver's area, and below the left-hand console
- Stainless steel risers on the floor at the sides of the sloping aisle
- Body posts, in a dark neutral color, between the windshields
- ABS molded post caps between sashes
- Color-coordinated, painted return air grills at each step up in the floor of the theatre rows (first two rows of passenger seats at front)

### **Covering**

- Removable aluminum panels in the main ceiling area covered in cut pile or flat woven fabric
- Color-coordinated cut or loop pile material on the sidewall below the windows
- Color-coordinated cut pile or flat woven fabric panels on the bottom of the parcel racks
- Loop pile material matching the sidewall fabric on the logo panel at the rear of the coach
- Neutral color-coordinated PVC snap-in molding over seat side wall track between seats
- Neutral color-coordinated Santoprene snap-in molding over the stainless steel floor tracking between seat pedestals

## **Passenger Modesty Panel**

The curved passenger modesty panel will be a nominal 33.75 inches in height from the floor of the first passenger theatre row to the top of the panel guard rail. It will feature

- One-piece guard rail with integral grab handle, nominal 1.50 inches in diameter with a 1.75 inch knuckle clearance. The guardrail will be made of molded self-skinned polyurethane, in a neutral finish. It will be positioned at the top of the panel with a grab handle on the aisle side.
- Large ABS access-panel with quick-disconnect fasteners on the stepwell side of the panel, covered with a solid background color-coordinated cut-pile fabric, for the entrance door-operating control valves.
- Recessed, diagonally situated, grab-rail made of molded self-skinned polyurethane over steel tubing on the stepwell side of the panel.
- Recessed, color-coordinated cut or loop pile fabric-covered panel on the passenger side of the modesty panel. The fabric will match the fabric chosen for the sidewall fabric.

- Inner and outer panels will be molded in a neutral-colored ABS plastic attached to a tubular steel frame.
- Small ABS access panel with quick-disconnect fasteners for the entrance door wedge and air cylinder on the stepwell side of the panel by the entrance.

### **Driver's Modesty Panel**

The curved driver's modesty panel will be a nominal 33.75 inches in height from the floor of the first passenger theatre row to the top of the panel hand rail. It will feature

- Neutral-colored, molded ABS panel attached to a tubular steel frame
- One-piece guard rail on top of the panel.
- Color-coordinated cut-pile fabric covering the driver's side of the panel
- Two speakers mounted on the driver's side of the panel, for the driver
- Molded, self-skinned polyurethane guard rail in a dark neutral color between the driver's seat and the center aisle
- Recessed, color-coordinated, cut or loop pile fabric-covered panel on the passenger side of the driver's modesty panel. The fabric will match the fabric chosen for the sidewall panel
- Additional microphone jack and holder for the PA system situated to the right of the driver

### **Parcel Racks**

Open parcel racks with integral luggage retention cords extend over all two-passenger seats with the exception of the two-passenger seat immediately forward of the lavatory. The parcel rack units will be made of composite shell. The parcel racks will feature:

- Nominal storage space of 150.00 ft<sup>3</sup>,
- Passenger service panels with individual adjustable gaspers for forced air ventilation and reading lights,
- Seat reservation markers above each passenger seat row indicating seat order from right to left,
- Parcel rack blowers located at midway length of rear and curbside compartments. Parcel rack divider panels will separate the blowers from passenger racks on each side. The blower compartments will have locking parcel rack doors.
- Color-coordinated fabric on bottom of parcel racks,
- Integral panels, mounted at the ceiling and above the side passenger windows, housing the speakers,
- Integral handrail made of vinyl-covered fiberglass, which will extend the full length of both parcel racks edges along the aisle side.

### **Driver's Seat**

The driver's seat shall be a Recaro Ergo Metro or approved equal. The driver's seat shall be adjustable and shall have up to 9.05 inches of fore and aft adjustment. The seat back and cushion shall be adjustable. The seat shall have cushion depth adjustment, height adjustment (5.5 inches maximum), seat back adjustment, rear cushion adjustment and lumbar adjustment so that operators ranging in size from the 98th percentile male to the 5th percentile female may operate the coach. The suspension control shall be ergonomically designed so that the operator can adjust the seat without looking. The suspension height adjustment and lumbar switches shall be operated with a rocker switch, no rotating knobs are acceptable. The seat suspension shall be capable of dampening varying frequencies that are transmitted through the vehicle caused by varying road conditions. The seat shall be cushioned by a dual shock absorber design. One shock shall be adjustable to allow the operator to control the ride settings. A rubber bumper is required to prevent bottoming out of the seat. A rubber boot shall be provided to cover the suspension to eliminate the potential for pinching. All air lines are to be 0.25 inch (6 mm) diameter and have a quick disconnect at the back of the seat. The suspension shall have a minimum of 15 degrees of seat cushion tilt (rake adjustment). The rake adjustment shall be dual-sided and be accomplished without leaving the seat. The seat cushion shall adjust from 18-20 inches (457 – 508 mm) for varying size drivers. Double locking seat tracks with stainless steel bearings shall be provided. The seat tracks shall be located below the seat cushion and above the pneumatic suspension to enhance track durability and

improve rearward travel. The seat shall come equipped with an air track release and a manual center release. All controls are to be on the right-hand side of the seat.

The seat shall be equipped with manual dual recliner gears. The seat back shall be adjustable with dual sided hand controls and include a 24.5 degree recline stop. Recline stop is to prevent the seat from interfering with the driver's barrier. The seat back shall be infinitely adjustable from 90 to 114.5 degrees. The seat back shall come with a full protective plastic back shell.

The back structure shall be constructed of steel and include a one piece stamped steel shell. The seat back shall be ergonomically designed and adjustable to provide exactly the right support to match the S-shaped curve of the operators back. The seat back foam shall be fully supported, no wires or spring support is to be provided. Solid steel bolster adjustment supports are required to provide strong lateral supports. Lateral supports will help hold the driver in place and reduce muscle fatigue while driving.

The seat cushion shall be adjustable in length and rake to accommodate operators of various heights. The seat cushion shall have a two inch extension for taller operators. To accommodate shorter operators, the front of the seat cushion shall rake down and retract.

A three cell air lumbar with right hand controls shall be provided for lower back support. Each air bag shall be individually controlled. Switch design and layout shall be positioned so that the operator can adjust without looking. A four way adjustable headrest with six position vertical adjustment shall be provided. The seat shall be provided with a two point 72 inch seat belt that is stored in plastic anti-cinch automatic retractors mounted on the left side of the seat. The seat belt buckle shall be located on the right hand side of the seat for easy access.

## **Passenger Seats**

**Amaya® Model Generational Plus deluxe recliner passenger seats or approved equal, will be provided featuring:**

- Steel frames with gray powder-coated center-T-pedestals,
- Cushions mounted on individual steel frames with steel mesh suspension,
- Full lumbar support in the seat backs,
- Four position mechanical reclining mechanism, with up to 5 inches of recline capability, for all two-passenger seats with the exception of the seats immediately forward of the lavatory which are not reclinable,
- Individualized cushion, back and head-rest areas on the rear cross-seats fixed in a 3-inch (76 mm) recline,
- Nominal 43.20-inch (1,097.28 mm) seat height from floor with headrest in lowered position,
- Molded polyurethane cushions, backrests and headrests,
- Fully upholstered removable cushion, back and headrest covers,
- Thermoplastic reinforced back panels upholstered in a color-coordinated carpet,
- Adjustable headrests,
- Aisle end trim of light or dark gray epoxy-coated aluminum casting, depending on arm rest choice,
- Stationary wall side armrests and fold-down aisle side armrests covered with soft plastic sleeves,
- Retracting aluminum footrests.

## **Seating Arrangements**

The standard seating arrangement will have a capacity of 56 passengers. Seating will consist of fourteen forward-facing two-passenger seats on the curbside, fourteen forward-facing two passenger seats on the roadside of the coach, and a similar reclining two-passenger rear cross-seat.

## Windows/Sashes

Single-glazed passenger windows will be installed on all passenger windows, with the exception of the #1 trapezoidal window.

Uniformly tinted heat-absorbing laminated glass will screen sunlight while insulating against heat transfer. This will ensure clear vision at all times. Double-glazed windows will utilize laminated and tempered glass panes, will be hermetically sealed and will comply with all applicable safety regulations.

Transmittance and heat absorption of the windows will be:

- Light Transmittance 24%
- Solar Transmittance 24%
- Heat Absorption 76%

The windows will feature:

- Bonded glass windows in the no. 1 position on each side of the coach fixed in position,
- Six emergency escape windows: no. 3 through no. 5 on each side may be pushed out for emergency escape by lifting the release bar at the lower edge which disengages two safety latches per window. Over-center cams will provide a snug fit when window is closed to place. Emergency instructions will be attached to the release bars at appropriate seat locations,
- Interchangeable windows in the nos. 3, 4, and 5 positions

## Windshield

A large, two-piece, curved windshield will be provided at the front of the coach sloping front to back a nominal 17°. The windshield will have these features:

- AS-1 laminated safety type glass, installed in the body opening with a black zipper rubber molding
- Interchangeable left and right windshields with non-interchangeable masks at the bottom of each
- Abrasion-resistant coating on both surfaces of the 0.25-inch (6.35-mm) AS-5 laminated opaque black acrylic valance immediately below the windshield

## Driver's Window

A fixed full-vision double glazed driver's window, framed in black powder-coated aluminum, will be provided and will include a diagonally sliding section in the lower rear corner. Glass will be double-glazed AS-2 laminated heat-absorbing safety-type.

## Entrance Door Windows

Two windows will be installed in the entrance door

- One double-glazed trapezoid-shaped AS-2 laminated heat-absorbing safety glass window in the upper section of the door.
- One 0.5-inch (12.7 mm) dark gray hard-coated cell-cast acrylic window in the lower section of the door

## Windshield Wipers

There will be two heavy-duty, self-parking, electrically operated wet-type windshield wiper assemblies, one for each windshield.

The wiping arc will be nominally 3.38 ft (1.03m). The total swept area for each blade will be nominally 8.41 ft<sup>2</sup> (0.78 m<sup>2</sup>). The total arc for both blades will be nominally 6.76 ft (2.06 m).

### ***The windshield wipers will feature:***

- Synchronous intermittent, or two-speed-constant wiper speed as dictated by control adjustment
- Rotary controls integrated into the turn signal smart stick located on the tilt-steering column
- Removable wiper motor which can be accessed from the exterior of the coach through the black acrylic valance below the windshield

- Pantograph wet-type wiper arms with 31.89-inch (810.00 mm) flexible wiper blades in a holder.

## **Windshield Washers**

Electrically-operated windshield washers will be provided and include the following features:

- Push-to-activate control integrated into the turn signal smart stick
- Polyethylene, 4 US gallon capacity reservoir in the left front service compartment
- Two outlet nozzles attached to wet-type wiper arms
- System which self-purges after each washing cycle

## **Blinds**

Roll-down vinyl sunscreens with an upper nylon mesh will be held in place by guide rods located at each end.

Pulling down on the blind handles will lower the manually operated window sunscreens. Pulling the release cords will raise the sunscreen blinds.

***The blinds will be located as follows:***

- One power blind at the right windshield
- One manual blind at the left windshield
- One manual driver's side window blind

## **Interior Rear View Mirror**

An adjustable convex interior rear view mirror, nominally 6 x 9 inches (152 x 229 mm), will be mounted on the windshield center post.

## **Emergency Escape Roof Hatches**

Two, low profile, roof-mounted escape hatches will be provided, located near the front and rear of the coach. The nominal outside dimension to the edges of the installation flange will be 27.60 x 27.60 inches (701.00 x 701.00 mm) with a nominal clear hatch opening of 22.75 x 22.75 inches (578.00 x 578.00 mm). The hatches are easily opened by rotating the red latch knob and then pushing it which will release the hatch. Pushing the hatch outward and forward completely opens it.

## **Destination Sign**

Provision, including harness and rivnuts for mounting, will be made for a removable destination sign to be mounted to the upper left-hand windshield.

## **Center Aisle Locker**

A continuously hinged center aisle locker (if available) containing a large volume waste container will be located between the lavatory and the two-passenger rear cross-seat.

## **Safety Equipment & Tools**

Standard safety equipment shall meet or exceed Department of Transportation (DOT) regulations at time of manufacture, and consist of the following:

- One 5.0 lb. (2.3 kg) dry chemical fire extinguisher in a storage bracket under the no. 2 curbside seat,
- A 36-unit first aid kit mounted in the no. 2 roadside parcel rack compartment. Rubber gloves and a resuscitator will be included with the 36-unit first aid kit,
- Three Fusee road flares and three collapsible reflector triangles in containers located in a storage shelf located in the upper front curbside of the no. 1 baggage compartment.

## **Amerex Fire Suppression System**

An Amerex<sup>®</sup> modular vehicle fire suppression and overheat warning system, or approved equal, will be provided to detect and extinguish fires in the engine compartment. The system will be electrically controlled.

A 25-lb. (11-kg) dry-chemical extinguisher cylinder will be installed in the no. 3 baggage compartment. Two thermostats and four extinguisher nozzles will be installed in the engine compartment. If the thermostats detect excessive heat, the cylinder will discharge dry-chemical extinguisher through the nozzles. A switch on the left-hand switch panel will trigger the extinguisher. A control panel above the driver will monitor the system. Normally a green LED indicating "System OK" will be illuminated on the front of the monitor. When a fire is detected a red LED and buzzer on the control panel will warn the driver.

The fire suppression system will be powered by the coach's electrical system, but an internal rechargeable back-up battery will be provided in case the coach's electrical system is interrupted.

### **SmartWave™ Tire Pressure & Temperature Monitoring System**

A SmartWave tire pressure/temperature monitoring system will be provided. Sensors mounted in the tire and rim assemblies continually transmit data which is captured and analyzed by the J1939 receiver module, mounted in the front axle area.

The receiver transmits the data to the dash display gauge to signal a pressure or temperature alert or system fault.

### **Tools**

The following standard tools will be provided:

- 12-ton hydraulic jack in the spare tire compartment,
- Wheel lug wrench in the spare tire compartment,
- Wooden run-up block (nominal 3.5 inches high) in the spare tire compartment

## **BRAKES**

### **Brake Air System**

The dual circuit brake system will be serviced by three reservoirs: one supply, one primary (rear service), and one secondary (front service). Each circuit will be isolated and constantly monitored by individual front and rear brake air-pressure gauges located in the driver's instrument panel. A telltale light and audible alarm in the driver's instrumentation will warn of low air pressure. A fourth isolated reservoir will provide air when necessary for the momentary release of the parking brake spring from the driver's position.

### **Brakes**

Brake components shall be approved and certified in accordance with all applicable requirements of FMVSS-121.

***Meritor air-operated, EX225 disk brakes, or approved equal,*** will be provided on the front, drive, and trailing wheels. The brakes will have these features:

- MGM tamper-proof, spring-type brake chambers on the drive wheels,
- MGM brake chambers on the front wheels,
- TSE brake chambers on the tag axle,
- WABCO six-channel Antilock Braking System (ABS), with integral speed sensing and individual wheel control at the front, drive and trailing wheels.
- A telltale light in the driver's instrument panel will indicate any ABS malfunction. A switch in the driver's instrumentation will activate the malfunction blink codes.

### **Service Brake Controls**

The brake application valve will be Bendix type E-10P.

### **Electronic Stability Control (ESC)**

ESC (Electronic Stability Control) is integrated with the ABS braking system to provide improved vehicle stability. Sensors within the ESC system monitor coach yaw movement and rotation, steering angle and brake application pressure to maintain coach directional stability. In critical driving situations such as rapid lane changes and cornering on slippery surfaces, which could result in loss of directional control, the brakes are applied selectively to individual wheels on the front and rear axles to bring the coach back to its intended direction.

The Electronic Control Unit (ECU) containing directional sensors is located in baggage compartment no. 3. A steering angle sensor is located in the steering column. These systems feed information that interacts with the ABS system providing directional and braking control.

The ATC tell tale is located in the driver's instrumentation and control center in the right hand tell tale cluster.

### **Tell Tale Function**

At engine start-up, the ESC/ATC and ABS tell tale icons illuminate briefly. After the ABS tell tale icon extinguishes, the ESC/ATC icon is illuminated for approximately one second and then extinguishes.

When ESC/ATC is active, the tell tale icon will illuminate steady. When ESC/ATC function is not required, the icon extinguishes.

When the Mud/Snow feature is activated, the ESC/ATC icon blinks continuously. When disengaged, the ESC/ATC icon extinguishes.

If either or both the ESC/ATC and ABS tell tale icons are illuminated during normal driving conditions, a fault exists and should be diagnosed and remedied.

### **Automatic Traction Control (ATC)**

Automatic Traction Control (ATC) will improve traction when coaches are on slippery surfaces by reducing drive wheel over-spin.

If a drive wheel starts to spin, ATC will apply air pressure to brake the wheel. This will transfer engine power to the wheels with better traction.

If all drive wheels spin, ATC will reduce engine power to provide improved traction.

ATC automatically switches ON and OFF as required by road conditions. Drivers will not have to select this feature. If drive wheels spin during acceleration, the ATC tell tale will come on, indicating ATC is active. It will go out when the drive wheels stop spinning and traction control is regained.

### **ATC Mud/Snow Feature**

ATC includes a deep snow and mud feature. This function increases available traction on extra soft surfaces like snow, mud, or gravel by slightly increasing the permissible wheel spin.

The deep snow and mud feature is not automatic. A switch located in the left hand switch panel turns this function ON and OFF. While this feature is selected, the ESC/ ATC tell tale blinks continuously. Once the feature is no longer required, the switch turns the deep snow and mud feature off and the tell tale extinguishes.

### **Parking Brake**

A spring-type parking brake system, or approved equal, will be provided, in compliance with FMVSS-121, and will have these features:

- Dual-type, drive axle brake chambers with both service and parking brake functions,
- Manual activation by operating the push-pull valve located to the left of the driver,
- Automatic activation when the air pressure in the reservoir drops to nominal level of 40 psi (275.8 kPa),
- Provision for service and emergency connections for towing purposes stored in the spare tire compartment,
- Momentary emergency release valve in the left-hand console switch panel.

Once applied, parking brakes will be mechanically locked and will not be affected by reduced air pressure if there is air loss in the parking brake system.

Integral cage bolts will be provided for mechanical caging of parking brakes.

### **Engine Brake**

An engine brake will be provided. This system converts engine compression to a braking force to effectively slow the engine and provide additional braking power that will significantly increase brake service life.

Touch pad engine brake control switches are located on the right side of the steering wheel four spoke cover. The control pod symbols are LED backlit for easy identification under low light conditions.

## **AIR SYSTEM**

### **Air Compressor**



The air compressor shall be a Cummins engine-mounted and driven compressor. The compressor shall be able to charge the air system brake reservoir from 0 psi to the governor cutoff pressure of 125 psi.±2 psi (862 kPa ± 14 kPa) in less than 3 minutes while not exceeding the engines rated speed. The air compressor shall be set to cut in at 105 psi (724 kPa).

### **Air Reservoirs**

The main system will use five air reservoirs, each equipped with a manual draincock for servicing, with a total nominal capacity of 10,680 in<sup>3</sup> (175,037 cm<sup>3</sup>) as follows:

- One supply (wet) reservoir, nominal 2,050 in<sup>3</sup> (33,600 cm<sup>3</sup>) capacity
- One front service reservoir (dry), nominal 2,050 in<sup>3</sup> (33,600 cm<sup>3</sup>) capacity
- One rear service reservoir (dry), nominal 2,050 in<sup>3</sup> (33,600 cm<sup>3</sup>) capacity
- One emergency release reservoir, nominal 1,200 in<sup>3</sup> (19,668 cm<sup>3</sup>) capacity, used only for emergency release as required
- One accessory air reservoir with a nominal capacity of 2050 in<sup>3</sup> (33,600 cm<sup>3</sup>)
- One suspension air reservoir with a nominal capacity of 1,280 in<sup>3</sup> (20,975 cm<sup>3</sup>)

The parking brake system will be fed by both front and rear service reservoirs through a two-way check valve. When service air is not available, an isolated emergency release reservoir will release the parking brake springs by means of a momentary valve.

### **Gauges & Warning Indicators**

Individual gauges will be provided in the front instrument panel to monitor the front and rear service brake reservoirs. A LOW-pressure telltale light and audible alarm will accompany each gauge. When the pressure is under 70 psi, the telltale lights and audible alarm will be activated. When the pressure is out of range, the telltale lights will flash. A third telltale light, SUPPLY AIR LOW, will be provided in the right-hand telltale cluster of the right-hand control panel.

### **Pressure Protection Valve**

A pressure-protection valve will be provided between the supply air system and the suspension/accessory air system components. The valve will remain closed until air pressure in the supply (wet) reservoir exceeds nominal 80 psi (551 kPa).

### **External Air**

Quick disconnect couplings in the front roadside service compartment and the rear curbside engine compartment will allow filling the coach air system from an external source.

### **Internal Air supply**

An air connection is provided inside the right rear service door to use air from the coach air system for maintenance purposes.

### **Air Dryer**

A Haldex air dryer with a heater element and a pressure safety valve set will be provided. The pressure safety valve will be set at 150 psi (1,034 kPa).

### **Air-Line Tubing**

All 0.375-inch (9.525 mm) or larger nylon air line tubing, conforms to SAE Standard J844-Type 3B. Tubing will be color-coded as follows:

- Green - primary (rear) brakes and supply
- Red - secondary (front) brakes
- Brown - parking brakes
- White, Black - accessories
- Orange - fuel system
- Blue - suspension
- Yellow - governor

### **Provision for Towing Connections**

Provision for towing connections will be provided at the front of the coach, accessible through the spare tire compartment. When the coach is being towed, it will provide air to the coach air system and facilitate service brake operation from the towing vehicle.

## **ENGINE COOLING SYSTEM**

### **Radiator/Charge Air Cooler (CAC)**

The diesel engine will use a radiator and charge air cooler (CAC-heat exchanger) system with the CAC mounted on top of the radiator. The engine radiator/CAC heat exchanger unit is mounted on the road-side at the rear of the coach behind a louvered grill door. A latch release handle is located in the extreme left hand corner of the engine compartment. Pulling this latch releases the radiator/CAC access door.

The Radiator/CAC has these features:

- Corten structural steel frame construction with stainless steel frame supports,
- Aluminum tubing and fins, radiator construction with 10 fins per inch,
- Three mode fan clutch for the radiator, controlled through the engine Electronic Control Module (ECM),
- Low positions in the water-based cooling system equipped with brass draincocks,
- Mikalor, constant torque, hose clamps.

### **Fan Clutch**

The Linnig fan clutch has three operating modes and is electromagnetically activated by a 24 V signal from the engine ECU. The Linnig clutch has three operating settings: OFF, Slip and ON.

### **Surge Tank**

The radiator surge tank will be mounted above the radiator at the rear of the coach behind the rear cross-seat.

#### ***Coolant Surge Tank***

The Surge Tank will have these features:

- Heavy duty steel construction,
- Sight glass in the tank, visible from the rear engine compartment, to check the coolant level,
- Spring-loaded pressurized radiator cap rated at 15 psi (0.72 kPa).

Coolant will be added to the system through filler accessible through the rear engine service door.

### **Alarms**

The engine monitoring devices will be incorporated into the engine's electronic controls to warn the driver of a fire in engine compartment and to stop the engine.

## **ELECTRICAL SYSTEM**

### **Starting Motor**

A Mitsubishi 24-volt starter motor, or approved equal, will be provided. It is a heavy duty, lighter design providing increased starting output using "Soft-Start" technology. This allows the pinion gear to fully engage the ring gear before the starter begins to crank the engine. Planetary gear reduction technology rotates the armature at a higher rpm, creating greater starting torque.

The Mitsubishi 105P70 24-volt starter motor will also have solid-link solenoid designed to eliminate contact sticking, integrated magnetic switch, sealed heavy duty ball bearings and Long-life brushes.

### **Dual Alternator System**

Two 24-volt, 140 amp (total of 280 amp) Leece Neville self-rectifying alternators, or approved equal, will be provided. These will be brushless, air-cooled and will have an integral voltage regulator. The alternators will be bracket mounted on the engine at the rear curbside of the coach.

## **Horn**

Two dual note horn systems with separate controls will be provided. One system will be electrically activated by a control in the steering wheel hub, while the other will be air-operated and electrically activated by a control integral to the turn signal smart stick.

## **Back-up Alarm**

An ECCO smart alarm variable tone back-up warning will be connected to the reverse gear circuit and mounted in the engine compartment. It will provide warning of reverse coach movement.

## **Entertainment System**

Actia ACT 500 (DVD,SVCD,VCD/CD MP3) radio MIC player with USB input & ACT 501 (Coach DVD/SVCD/VCD/CD/MP3 player with USB), or approved equal, with the following:

Backup DVD player or toggle between players

USB Input can play audio or video also toggle between players

Future integration of steering or dash controls

Separate power supply's to each player

Integrated power amplifier reducing parcel rack space and reduced harnesses and connectors

DVD audio only mode, allows LCD monitors to be shut off and play audio mode reducing power consumption

## **Speaker System**

This system will include 2 speakers mounted in the driver's modesty panel behind the driver's seat, and 15 five-inch (127 mm) coaxial speakers mounted in the parcel rack housings above the side-passenger windows on each side of the coach: 8 on the roadside and 7 on the curbside of the coach.

## **Public Address System**

A PA system integral to the audio/video control module will be provided which includes the following:

- 10-foot (3,048 mm) coiled microphone cable and an ON-OFF controlled microphone mounted on the right hand driver's side of the driver's modesty panel,
- Additional input jack on the left-hand driver's side of the driver's modesty panel,
- Additional microphone holder clip mounted on the .window frame at the roadside of the windshield.

## **Provisions for a CB Antenna**

Provisions only will be made for a CB or mobile radio antenna and lead-in accessed through openings in the front curbside parcel rack ceiling extrusion which will serve as the conduit for the cabling.

## **Provisions for a Cellular Phone Antenna**

Provisions only will be made, for a cellular phone antenna and lead-ins accessed through openings in the roadside parcel rack ceiling extrusion, near the front roof hatch, which will serve as the conduit for cabling.

## **Cruise Control**

Cruise control will be a driver-controlled, automatic speed control system. Coach speeds can be set between the low limit speed (determined by drive axle ratio) and top speed (Determined by the engine governor-controlled speed setting). Individual touchpad controls - CANCEL, ON, OFF, SET, RES (Resume) are located on the left hand side of the steering wheel four spoke cover. Control pods are LED backlit for visibility in low light situations.

## **Driver/Passenger Interior Lighting**

24-volt interior lighting, with the exception of night lighting, which will be 12 volts, will be provided.

### **Entrance Stepwell**

Illumination will be provided by a LED light assembly mounted in a ceiling fixture above the stepwell. A light housing will also be mounted on the lower interior section of the entrance door below the second window.

The area will be automatically illuminated whenever the Master Power switch is in the ON position, the entrance door is open and the stepwell light circuit switch, located on the driver's right hand switch panel, is in the ON position.

### **Driver's Light**

A LED light assembly will be located in a ceiling fixture above the driver's area. It will be controlled by a switch on the right-hand switch panel.

## Driver's Instrumentation and Control Center

UV illumination of the gauge cluster and back-lit LED illumination of the telltales will be regulated by a sliding PWM (Pulse Width Modulated) control on the right-hand switch panel which is powered through the headlight switch.

## Overhead Lighting

### Soft Start “Smart” Fluorescent Ballasts

The fluorescent lights have a “soft start” feature that provides soft, “progressive on” lighting at start-up. The ballasts are also equipped with “smart ballasts” ground-fault protection that will automatically shut down the ballast if a problem is detected. A red LED in the ballast illuminates to signal a problem. Restart the fluorescent ballasts by recycling the master power switch located in the battery compartment OFF/ON. Upon initial start up/restart, the ballast performs a self-test where the lights illuminate for a few seconds and then shut off.

### Switch Controls

A three-position rocker switch in the right hand switch panel of the instrument panel will control two levels of interior illumination as follows:

- In the center OFF position, all lights will be off,
- In the bottom AISLE position, half the overhead aisle fluorescent lights above the parcel racks will be ON, with lit and unlit tubes alternating on both sides of the aisle,
- In the top ALL position, all sixteen of the overhead aisle fluorescent lights will be illuminated.

### Reading Lights

Light will be provided by individually controlled 9-watt lights mounted in a fixed position in the parcel rack passenger service modules,

**NOTE: These lights are powered only when the master power switch is positioned ON.**

A switch in the right-hand switch panel at the driver’s position will control power to the individual locations. A test feature is incorporated in the switch. See *Section 11 – “Driver’s Instrumentation and Control Center” “Right Hand Switch Panel”* heading for the switch location.

## Night Lighting

Seven 4-candlepower, 12-volt, blue lights will be mounted under the left-hand aisle side seats.

A 12 volt DC LED blue light will be located on each side of the aisle at the rear of the coach mounted in the fluorescent light housings. One will be directly above the lavatory door.

The night-lights will turn on with the marker lights.

## Lavatory Lighting

Lavatory illumination will be provided by a combination of light fixtures.

A dome light will be installed in the center of the ceiling, containing one 3-candlepower LED lamp (12-volt night-light) and one 32-candlepower bulb (24-volt). The 12-volt bulb will light whenever the marker lights are activated. The 24-volt bulb will light whenever the washroom door is closed and locked.

A 12-volt night-light will be installed above the lavatory mirror.

Whenever the **engine run** circuit or **in station** mode is energized, four 1-candlepower lights will illuminate the washroom occupied sign on the center aisle locker: two red (occupied) and two green (vacant).

A 12-volt night-light above the lavatory mirror will be illuminated.

**External Lighting**

***The following 24-volt exterior compartment lighting will be provided:***

**Baggage Compartments**

Switches located at the driver's RH panel will turn on three 15-candlepower bulbs each. There will be one bulb within each baggage compartment (six bulbs in total).

**Engine Compartment**

Three 15-candlepower lights will illuminate when the engine compartment door is opened.

**Exterior Lighting**

The following 12-volt exterior lighting will be provided:

**Headlights**

Four halogen projection headlights will be installed as dual units, two on each side of the front of the coach. Inner lights will be high beams with HIGH/LOW control in the smart stick turn signal lever.

Daytime running lights will be automatically illuminated when the engine is running and the parking brake is released. Headlights will be controlled by a three-position rotary control, OFF- MARKER-HEADLIGHTS, located in the driver's right hand switch panel.

**Stop lights**

***The following red stop lights will be located at the rear of the coach:***

- Two 32-candlepower LED stop lights, nominal 4.0 inches (101.6 mm) diameter, will be located in the corner tail light assembly just below the belt line.
- One high and horizontally-mounted LED stop light, nominal 2.0 x 37.5 inches (50.8 x 952.5 mm), will be located just below the drip molding line and over the fleet numbers location. A red acrylic lens will cover this stop light installation.

**Clearance/Turn Signal Lights**

Ten 32-candlepower amber lights will be provided as follows:

- Two corner lights will be located in combination assemblies outboard of the headlights at the front, visible from the front and sides. The combination assemblies will include two bulbs, and serve a dual purpose as clearance/turn signal lights.
- Two rear amber LED turn signal lights, nominal 4.0 inches (101.6 mm) in diameter will be located, one on each side, in the tail light assemblies, above the stop lights, just below the belt line.
- Six side marker/turn signal LED lights will be provided just below the belt line, three installed on each side: one above and rearward of the front wheel well, one at the top of the no. 3 baggage door, and one on the side body panel above and between the drive/TAG axles.

The smart stick turn signal lever will control the left and right signals. All directional lights will flash when the hazard warning switch, located in the driver's right-hand switch panel, is positioned ON. Appropriate Telltale lights will be located in the driver's area instrument panel.

**Backup lights**

Two 32-candlepower LED lights with clear lenses, nominal 4.0 inches (101.6 mm) diameter, will be enabled by the transmission reverse signal. They will be mounted, one each, in the corner tail light assemblies at the rear of the coach, below the stoplights, just below the belt line.

**License Plates**

Two 4-candlepower LED lights will be provided to illuminate the rear license plate in a recessed housing in the center of the coach. They will be on the marker and tail light circuit.

**Cornering Lights**

Two 12-candlepower incandescent lights (each containing two 6-candlepower bulbs) will be located, one on each side, to the rear of the front wheel housing below the directional light. The cornering lights will turn on with the directional lights.

## **Clearance/Marker Lights**

These lights are controlled by a rotary switch at the driver's right hand switch panel, activated with the headlights on.

## **Rear Locations**

Seven red Clearance/Marker lights are located in the upper rear roof area. Five are located in the rear upper roof cap. Two are located in the rear roof side corners.

## **Front Locations**

Five amber clearance/marker lights are located in the upper front roof area. Three are located in the front upper roof cap covered by an amber acrylic lens. Two are located in the front roof side corners.

## **Reflectors**

Six reflectors shall comply with Department of Transportation (DOT) safety regulations at time of manufacture. They will be located as follows:

- Two amber reflectors in recessed pockets at the corners of the front bumper,
- Two round red reflectors, one in each tail light unit, between the upper turn signal light and the stop light unit,
- Two red reflectors at the side corners of the of the rear bumper.

## **Batteries**

The two commercial SAE 8D, 12-volt, multi-plate, deep-cycled batteries will feature

- 450 minutes reserve rating at 80° F (27° C) at 25 amp
- Polypropylene cover, rubber housing, and carrying handles
- 1,350 amp cold cranking rating at 0°F (-18°C)
- Die-stamped date of manufacture
- Battery disconnect switch, disconnecting both the 12- and 24-volt electrical circuits from the batteries except for the engine ECU, transmission ECU, and auxiliary heater, located in the electrical compartment, accessible through the switch access door integral to the electrical compartment door
- Battery compartment made of corrosion-resistant polyethylene
- Batteries mounted side-by-side in a compartment, sealed and vented to exterior, located in the battery compartment on the curbside of the coach
- Size 4/0 color-coded cables (red - 24 V, black - Ground, blue - 12 V) used in the connection. The coach electrical system will be the negative ground

## **Battery Equalizer**

An 80-amp, short circuit proof, Surepower<sup>®</sup> battery equalizer, or approved equal, will equalize battery voltage and improve battery performance.

## **Multiplexing system**

All circuits will be protected from short circuits by the Solid State Relay (SRM) modules. Normal operation will resume once a fault is removed, and the run signal is cycled from ON to OFF and then back to ON.

Each module output will be rated at 6 amps with multiple outputs used for loads greater than 6 amps.

## **Operating logic**

These modules will control the combining and sequencing of signals that operate the internal solid state relays. The communication data link shall be in accordance with SAE J1939 at the time of manufacture.

## **Diagnostics**

These modules will detect and report a variety of module and relay level faults, if they occur, by the module-mounted LED telltale. They will indicate

- No power or fault condition - extinguished LED
- Fault condition - flashing LED
- Normal active status - steady LED



## Circuit Breakers

All circuits will be protected by the following devices:

### Self-resetting circuit breakers

These circuit breakers, located in the battery compartment, will provide overload and short circuit protection for the main HVAC blower, condenser fans, and driver's evaporator blowers. There will be three manual reset circuit breakers for the driver's blowers under the curbside headlights and two self-resetting circuit breakers for the parcel rack blowers in the fuse box.

Manually-resetting circuit breakers are enclosed in the ABS- material box in the #1 baggage compartment for 12- and 24-volt solid state modules.

### Fuses

provided for the clock, auxiliary heater, engine ECU, transmission ECU, SRM modules, door sensors, and HVAC controllers will be located in the battery compartment fuse box.

### Wiring

All wiring will be properly grouped, color-coded (8-gauge or smaller), and number-coded for identification. All supports will be non-conductive, and precautions will be taken to minimize damage from heat, water, solvents, or chafing. The battery cables will conform to specification requirements of SAE standard J1127, Type SGX, or SGR. All other wiring harnesses between major electrical components and terminations will have double electrical insulation, maintained as close to the terminal as practical, and meet specification requirements of SAE recommended practice J1128, Type GXL.

The requirement for double insulation will be met by wrapping harnesses with plastic electrical tape or by sheathing all wires and harnesses with non-conductive flexible conduit, loom, or braid. At points where wiring penetrates the metal structure, suitable elastomeric material will be used. There will be spare wires in the main harnesses for additional circuits with wires dead-ended at the following points:

- Front junction box, left of the driver's position,
- Electrical compartment,
- Rear junction box,
- Engine compartment.

## DRIVER'S INSTRUMENTS and CONTROL CENTER

All driver's instrumentation and controls will be contained in the left and right-hand switch panels, the instrument panel, and the left-hand console switch panel. These are contained in the contoured surround, ergonomically designed driver's control center.







The basic gauge configuration will be in U.S.A. Imperial measurement.

The control center will be of composite construction, hooded by a self-skinning polyurethane foam panel. The left-hand console switch panel will be fabricated from ABS.

### Tell-Tale Indicator Clusters

LH and RH Tell-Tale indicator cluster groups are located directly above the gauge cluster in the Instrument Panel. Some tell-tales have a buzzer or chime. The tell-tales light briefly at engine start-up as a LED test.

<b>Condition</b>	<b>Tell-Tale Light</b>	<b>Tell-Tale Color</b>	<b>Audible Alarm</b>
Left directional signal, ON		Green	Click
A message is being broadcast to the	<b>CHECK MESSAGE</b>	Yellow	None

odometer display. Check for data			
Parking brake applied		Red	None
Indicates a failure of a Emission system component on DDC engines only	<b>MIL</b>	Red	None
One or both alternators are not functioning	<b>NOT GEN</b>	Red	None
Flashes when a Rear Axle Steering Fault (RAS) occurs. Solid when a Electronically Controlled Air Suspension (ECAS) fault occurs.	<b>RIDE FAULT (Not Used)</b>	Red	None
Tag axle unloaded	<b>TAG UNLOAD</b>	Red	Buzzer
Diesel Particulate Filter (DPF) lights when "Regeneration" is required.		Yellow	None
High Exhaust Temperature (HET) lights when the coach is moving under 5 mph (8 kph) and exhaust outlet temperature is higher than the established level.		Yellow	None
Jacobs brake activated	<b>ENGINE BRAKE</b>	Yellow	None
Transmission retarder activated (optional)	<b>RTRDR APPLIED</b>	Yellow	None
Check transmission and move coach to a safe location and turn OFF ignition		Yellow	None
Check engine (Engine Fault – refer to engine manufacturer's manual)		Yellow	None
Engine powering down or stopped		Red	None

**HVAC Display and Control Module** - allows the driver to monitor HVAC faults and indicators as well as monitor and control the interior climate. Individual diagnostics and controls for the driver's area and passenger area will be provided. The display module will include an alpha numeric illuminated display and the following control switches:





1. Driver's Fan (defrost) Control
2. Driver's Heat Control
3. Parcel Rack Ventilation Switch – 3 Position – OFF-LOW-HIGH
4. Auxiliary Heater Switch (Optional)
5. Control Panel Module

**Left-hand Switch Panel** - There will be two rows of LED-illuminated rocker-type switches and controls, back-lit with replaceable LED lights and marked as to function, in the lower left-hand switch panel:

1. Tag axle unload, OFF-ON (Optional)
2. SmartWave™ Dual LED display Location
3. Mud/snow Automatic Traction Control (ATC), OFF-ON
4. ABS code, OFF-ON
5. Fast Idle, OFF-ON
6. Engine override, OFF-ON, (momentary)
7. Master Power Switch – Top position – ON Bottom position – OFF

8. Engine Start Switch – Top position – START (momentary)

**Parking Brake Valve Release** - (PUSH to release, PULL to apply) will be located under the left-hand side of the dash.  
**Right-Hand Tell-Tale Cluster** - will be located top right of the gauges in the instrument cluster with two rows of telltale lights and audible alarms indicating the following conditions:

<b>Condition</b>	<b>Tell-Tale Light</b>	<b>Tell-Tale Color</b>	<b>Audible Alarm</b>
Headlight high beam, ON		Blue	None
Entrance door open	<b>ENT DOOR</b>	Yellow	None
Flashes when “High Rise” is selected with the optional Rear Rise switch	<b>HIGH RIDE (Not Used)</b>	Red	Buzzer
Cruise control activated	<b>CRUISE ENABLED</b>	Green	None
Service brakes applied	<b>STOP LIGHTS</b>	Yellow	None
Baggage bay, engine bay lights are on or a service door is open or not latched	<b>SERVICE LIGHTS</b>	Yellow	None
Auxiliary heater is ON and operational	<b>AUX HEATER</b>	Yellow	None
Right directional signal, ON		Green	Click
Supply pressure drops below 65 psi	<b>SUPPLY AIR LOW</b>	Red	Buzzer
Fire in the engine compartment	<b>FIRE ALARM</b>	Red	None
Coach is kneeling or recovering	<b>KNEEL</b>	Red	Buzzer
Passenger presses the stop button	<b>STOP REQUEST</b>	Yellow	None
Passenger in wheelchair is pressing the stop button (optional)	<b>WCL STOP REQUEST</b>	Blue	None
Wheelchair lift activated (optional)	<b>W/C INTERLOCK</b>	Red	None
ESC (Electronic Stability Control / ATC (Automatic Traction Control) System active or fault condition.		Yellow	None
Anti-lock Braking system malfunction		Yellow	None

**Right-hand Switch Panel** - Two rows of illuminated switches and controls, identified for function and back lit with replaceable LED lights, will be located to the right of the Instrument Panel gauge cluster.

### Instrument Panel

UV back lit, located between the left and right switch panels, the instrument panel will contain illuminated telltale symbols (displayed in two separate LH and RH clusters) and a cluster of 10 gauges. The basic gauge configuration will be in U.S.A. Imperial measurement.

During daytime operation, the gauges will appear in a white and red dial with white numbering and an orange needle. During nighttime operation, the gauges will be UV- illuminated from the front and will appear in an orange and red dial with orange red readings and an orange needle.

**Gauge Cluster - 10 gauges, appropriately identified with white symbols or decals, will be provided in the instrument panel as follows:**

1. **Voltmeter** - One 1.88-inch (47.75 mm) nominal diameter reading 18 to 36 volts

2. **Engine oil pressure gauge** - One 1.88-inch (47.75 mm) nominal diameter
3. **Engine coolant temperature gauge** - One electric 1.88-inch (47.75 mm) nominal diameter reading 100° to 250° Fahrenheit
4. **Electronic tachometer** - One 3.5-inch (88.9 mm) nominal diameter reading 0 to 3,000 rpm
5. **Electronic speedometer** - One 3.5-inch (88.9 mm) nominal diameter recording speed from the transmission ECU, calibrated in both miles and kilometers reading 0 to 80 mph (0 to 120 km/h)
6. **Front brake air pressure gauge** - One 1.88-inch (47.75 mm) nominal diameter reading 50 to 150 psi  
**Rear brake air pressure gauge** - One 1.88-inch (47.75 mm) nominal diameter reading 50 to 150 psi
7. **Fuel level gauge** - One electric 1.88-inch (47.75 mm) nominal diameter with symbols indicating empty, half full, and full levels
8. **SmartWave™ Display** - One 1.88-inch (47.75 mm) nominal diameter with message screen, warning light and left, right and center control buttons. Provides real-time data on tire pressure and temperature from all wheel/tire positions.
9. **Blank**

**The following gauges contain LED's, two with audible alarms as indicated, that combine with the gauge reading to warn of a critical operating condition:**

<b>Gauge Warning</b>	<b>LED Condition</b>	<b>LED Color</b>	<b>Audible Alarm</b>	
1. Voltmeter	<b>LOW</b>	Voltage low	red	none
2. Engine Oil Pressure	<b>LOW</b>	Engine oil low	red	none
3. Engine Coolant Temp.	<b>HOT</b>	Engine coolant temperature hot	red	none
6. Front Brake Air Pressure	<b>LOW</b>	Front brake air pressure low	red	buzzer
7. Rear Brake Air Pressure	<b>LOW</b>	Rear brake air pressure low	red	buzzer
8. Fuel Level	<b>LOW</b>	Fuel level low	red	none

### **Engine Compartment Instrumentation**

The following controls will be located in the upper left-hand area of the engine compartment:

- Service light switch, ON-OFF
- Cooling fan clutch test switch, TEST-AUTO
- Electric fuel priming pump switch, ON-OFF (momentary)
- Starter switch, Front Enable-Off-Rear Crank (maintained/momentary)
- Engine Enable switch, Engine Enable-Engine Off

If the Engine Start Switch is pushed ON while the Engine Enable switch is OFF, a buzzer will sound to indicate that the engine Electronic Control Module is not powered and the engine cannot receive a signal to start.

No gauges will be located in the engine compartment.

## **ENGINE**

The engine and transmission will be off-set T-drive mounted at the rear of the coach on a cradle attached to dual support rails sloping upwards a nominal 1 degree from front to back. Engine rail mounts will make it easier to remove the power plant.

**The engine will be accessible through these access points:**

- Rear engine compartment door,
- Rear curbside service door,
- Floor access panel in front of the rear cross-seat,
- Radiator door (behind cooling package),
- Underside of the engine compartment.

## Power plant

The Cummins ISX 11.9 Liter engine, or approved equal, will be four-cycle, six-cylinder, turbo-charged. The air induction system will be air-to-air charge cooled for maximum efficiency and power. The engine will have built-in diagnostics to ensure that all components are operating properly. If a system component fails, the operator will be alerted to the condition via a dashboard mounted "Check Engine" and/or "Stop Engine" light.

### **Cummins ISX 11.9 Liter Specifications:**

- **Displacement** – 11.9 Liter (728 cu. In.)
- **Cylinders** – 6
- **Engine Power Rating** – 425 HP (317 kW) **Maximum Torque Curve** – 1450 lb-ft (1968 Nm) at 1,200 rpm
- **Operating range** – 700 rpm to 2100 rpm

### **Engine Features:**

- *Self-tensioning belt drive system for reduced maintenance and increased belt life.*
- *Mid-stop cylinder liner minimizes oil consumption and increases durability.*
- *Articulated piston design featuring forged-steel crown and aluminum skirt allows for higher top ring position, optimized fuel efficiency.*
- *Thoroughly tested and proven durable, the ISX meets the latest 2010 emissions requirements*
- *Cummins C Brake™ by Jacobs® turns the energy-producing engine into an energy-absorbing compressor, extending service brakes and tire life.*

### **Operating Features:**

- *The patented Variable Geometry Turbocharger (VG Turbo), with only one moving part in the exhaust stream, constantly adjusts to deliver the precise amount of air for optimal performance at every rpm, resulting in improved throttle response.*
- *The ISX engine is designed to deliver outstanding performance in the 700-2100 rpm range with up to 1450 lb-ft of torque for automatic transmissions.*
- *Exceptional power-to-weight ratio, with the lowest total cost of operation.*

### **Electronic Features:**

The electronic hardware and software on the ISX use a common architecture with all the latest diagnostics, maintenance monitoring and engine protection features with customer selectable shutdown.

**Idle Control** – Environmentally friendly feature manages idling time and improves fuel economy.

**Starter Lockout** – Provides additional engine/starter protection.

**Engine Protection** – Regulates rpm to reduce the risk of progressive damage when a severe fault code is logged.

### **Exhaust System**

A stainless steel exhaust system shall be provided. It shall include the DPF (Diesel Particulate Filter), designed to reduce particulate emissions. The DPF accumulates soot and residual engine oil, which are the product of combustion. A telltale light illuminates when the DPF needs cleaning. A "regeneration" switch activates an internal element within the DPF that burns off the trapped soot and engine oil ash. The exhaust system will also utilize Selective Catalytic Reduction (SCR) technology to comply with 2010 EPA emission requirements for NOx. The SCR system requires the use of Diesel Exhaust Fluid (DEF) in conjunction with low sulphur diesel.

# FUEL SYSTEM

## Fuel Tank, Filler and Filters

A polyethylene fuel tank installation will be located between the condenser compartment and the battery compartment at the coach centerline. The fuel tank will have a total volume of 196-US gallons (741 liters) with a useable 95% capacity of 186 US gallons (704 liters).

***The fuel tank system will include the following:***

- Brass fuel tank drain plug at the bottom of the tank,
- Anti-spill device and whistle, to indicate when the tank is filled to capacity,
- Remote-controlled electric fuel priming pump, with check valve, located in the fuel tank compartment,
- Left and right-side of coach access for refueling,
- Check valve in the fuel supply line to prevent air from entering the fuel line,
- Anti-siphoning feature.

## Diesel Exhaust Fluid Tank

In conjunction with the EPA 2010 engine, Diesel Exhaust Fluid (DEF) shall be utilized to help reduce NOx emissions. A 15 gallon DEF tank shall be located in the same compartment as the main fuel tank. A separate external fill access door shall be provided on the curbside of the coach. The tank shall be heated during cold weather operation by engine coolant, and delivery lines shall be insulated and electrically heated. A DEF level indicator shall also be located in the instrument panel.

## Fuel Pro<sup>®</sup> Fuel Filter

A Fuel Pro<sup>™</sup> filter and water separator, or approved equal, will be located at the right side of the engine on the engine-mounting rail. The Fuel Pro<sup>™</sup> filter will extend the filter change intervals, and will feature a clear cover for instant visual indication of filter life, the fuel condition and flow.

The filter assembly is accessed through a removable panel at the back of the wheelchair lift storage compartment.

## Accelerator Pedal

An electronic accelerator pedal will be provided for the driver. The accelerator pedal's electronic throttle will be an integral part of the engine's electronic control system.

The accelerator pedal will consist of an electronic throttle assembly with mounting and a foot pedal with a rubber tread. The pedal assembly will be attached to the brake pedal mounting plate with machine screws.

***The throttle will have these features:***

- Spring-returned roller actuator mechanism
- Throttle position sensor (potentiometer)
- Interconnecting harness with foot plate

## Air Intake and Filter

A high mount engine air intake will be provided on the upper rear roadside of the coach in an area minimizing turbulence and road splash. Air will enter a catch basin precleaner, which will remove moisture and heavy contaminants. Then it will enter a horizontal dry-type air cleaner. The filter will be located in an area just above the engine and will be accessible through the rear engine compartment door.

# STEERING

***Hydraulic full-time power steering control in forward and reverse will feature:***

- Luk power steering pump,
- ZF variable ratio steering gear that will operate the steering system,

- Universal joints in the steering shaft,
- Power steering reservoir in the engine compartment with a nominal capacity of 7.5 US quarts (7.1 L), equipped with a lubrication information nameplate, a fluid level sight gauge, dipstick, and sensor; and a telltale light in the left-hand telltale module to indicate when the power steering fluid level is low,
- Solid-type drag link with serviceable, grease-lubricated, ball joint assemblies on link ends,
- Steel-braided and Teflon-line low-pressure power steering hose in the engine compartment,
- Tilting and telescopic steering column,
- 18-inch (457-mm) nominal diameter steering wheel, leather wrapped, molded polypropylene form. Fingertip switches for cruise controls are clustered on the left side of the steering hub. Touch pad engine brake control switches are located on the right side of the steering wheel four spoke cover. A horn contact is located in the middle of the steering wheel center, identified by a “horn” icon.

## **SUSPENSION**

Air suspension at each axle will absorb vertical loads on axles and maintain consistent coach height within the gross coach weight limitations of 54,000 lbs (24,494 kg).

### **Front axle suspension**

This suspension will be equipped with two rolling lobe type air spring bellows, nominal 14 inches (356 mm) in diameter, working in conjunction with one height control sensor and rubber spring assisters mounted inside bellows.

### **Drive axle suspension**

This suspension will be equipped with two height control sensors and four rolling lobe type air spring bellows, nominal 11 inches (279 mm) in diameter.

### **Trailing axle suspension**

The trailing axle will be equipped with two rolling lobe-type air spring bellows, nominal 14 inches in diameter (356 mm).

The trailing and drive axle air springs will feature balanced pressure on each side of the coach rear.

### **Suspension Links**

The position of the front, drive and trailing axles will be maintained by two heavy-duty rubber bushing mounted lower radius rods and one upper v-link at each position.

### **Sway Bars**

The sway bars will be mounted on the front and trailing axles. They will feature ball joint style sway bar links.

### **Tag Axle Unload**

In a low traction situation during driving, the air in the tag axle air springs can be unloaded, or dumped, so that the load is transferred to the drive axle for improved traction. Pressing the tag axle switch located on the left-hand switch panel can activate this feature.

### **Wide Stance Suspension System**

The “Wide Stance” is achieved by mounting the Koni Frequency Selective Dampening (FSD) shock absorbers, or approved equal, to wider mounting points on the drive and TAG axle housings. This provides efficient suspension rolling control and allows the suspension to continually and instantly adapt to all road conditions, providing a stable and smooth ride.

### **Shock Absorbers – “Wide Ride Suspension System”**

Koni heavy duty shock absorbers will be provided at all axles. Drive axle and tag axle shocks will be Koni Frequency Selective Dampening (FSD).

FSD shock absorbers are very stiff in response to low frequency inputs, yet very soft in response to high frequency inputs.

Two shocks will be provided on the front axle, four on the drive axle, and two on the tag axle. Shock absorbers are interchangeable on the same axle only. The drive axle shock absorbers are located at the outer ends of the drive axle support structure for optimal roll stiffness.

## **Kneeling Feature**

An air-operated, electrically controlled, kneeling system will be provided. It will feature;

- Reduction of first step entrance height to 11.25 inches (285.75 mm) nominal,
- Driver-activated momentary control in the right-hand switch panel of the front instrument panel,
- Automatically locked-out controls when the entrance door is open or the parking brake is not engaged,
- Recovery, within 4 seconds nominal of activation, to a height permitting the coach to resume service,
- Override control in #1 roadside baggage compartment,
- Telltale light, KNEEL, in right-hand telltale cluster of front instrument panel to indicate when system is in use,
- Amber light to the rear of the entrance door and below the belt line, which will flash and beep when the kneeling system is in operation.

## **TRANSMISSION**

An Allison B500 GEN IV automatic transmission, or approved equal, will be provided as standard. The transmission will feature the following:

- Six forward speeds and one reverse speed
- Electronic controls, in an enclosed compartment in the curbside electrical compartment, linked to the engine electronic module
- Helical pinion gear sets
- Internal oil filters
- Built in oil level sensor Dipstick tube accessible through the engine compartment door

### **Electronic Controls**

A microcomputer based electronic transmission management system will control gear selection and torque converter mode. This system will analyze information on throttle position, operator range selection, engine speed, turbine speed, transmission output speed, and various system pressures monitored by special electronic sensors. The system will use this data to compute shift points and clutch pressures to match the transmission power output needs.

The electronic control will use a closed-loop adaptive logic process to analyze several parameters during the shift. Minute adjustments will be made to match the shift to a desired shift profile stored in memory. These adjustments will be analyzed and used to re-set the parameters for the next shift.

This adaptive feature will enable the transmission to quickly compensate for load, terrain and environment variations, and to adjust for clutch wear and engine power changes.

### ***World Transmission Shift Selector Control***

The electronically controlled hydraulic auto shifting of the B500R Gen IV five-speed World Transmission will be totally automatic. Shift range selections will be made through a touch-pad shift selector control module.

### ***Allison Diagnostic Codes***

Four-digit trouble codes can be displayed on the shift selector to quickly identify potential problems detected by the ECU.

### ***Allison Prognostics System***

A connection provides diagnostics that indicate oil / filter change intervals and required transmission rebuild schedule.



## **DRIVE SHAFT**

The drive shaft will be a nominal 3-inch (76-mm) tube, mounted in heavy-duty, high-velocity Dana universal joints. The joints will be retained in 1810 series half round yokes by end cap saddles. A guard will prevent the shaft from striking the floor or the ground in the event of a tube or joint failure.

# WHEELS and TIRES

## Wheels

Nine interchangeable Accuride no. 29300 series, size 9.0 x 22.5 inches (228.6 x 571.5 mm) hub-piloted steel wheels with five hand holes, designed to accept steel belted radial tires will be provided.

The wheels will contain flow-through tire valve caps of appropriate length. The studs on all axles will be of sufficient length to accommodate installation of aluminum or steel wheels.

## Tires

The coach will have nine 315/80R 22.5 Firestone FS400 tires, L-rated to run at 75-mph (121-km/h) maximum continuous operation. The tires shall comply with the following criteria:

- Maximum load capacity of 9,090 lbs (4,091 kg) at 130 psi (896.4 kPa) single axle
- Maximum load capacity of 8,270 lbs (3,759 kg) at 130 psi (896.4 kPa) single axle
- Standard rim width of 9.0 inches (228.6 mm)
- Standard rim diameter of 22.5 inches (571.5 mm)

# HEATING, VENTILATING & AIR CONDITIONING (HVAC)

## Evaporators and Heaters

### The Main Under-Floor System

This will be made up of a single unit located below the floor in the central heat compartment. It will contain filters, heater/evaporator, expansion valve, heater (glycol) valve, and two centrifugal-type double inlet blowers with a two-speed motor.

Recirculated air will pass through a filter, through the evaporator heater core, and then will be dispersed through ducts and air outlets along the side windows. All exhaust air will be discharged through the lavatory.

The interior of the coach will be slightly pressurized when the blowers are on to help keep dusty external air out. Interior temperatures will be maintained by the cooling system and by controlling the flow of glycol into the heater cores.

### The Driver's HVAC Module

This module is located under the right-hand dash, will consist of heater and evaporator cores, dual three-speed blowers, an internal fresh air damper, and the following features:

- Control to allow switching from outside air to recirculated air
- Louvered removable access panel on the forward wall of the step well through which recirculated air will be drawn
- One driver's vent on each side of the instrument panel
- Defroster outlets at the base of the windshields and the driver's side window
- Manual shutoff valve (accessible from the front roadside service compartment) for driver's heating system
- Heater and evaporator core individually controlled by electrically operated valves (one for glycol and one for refrigerant)

The total combined capacity of the A/C system is 8.5 Tons or 102,000 BTU's/HR (1 Ton = 12,000 BTU's/HR) without parcel rack evaporators and 10.5 tons or 126,000 BTU's/HR with the optional parcel rack evaporators.

## Ram Air

Controlled fresh air will be introduced from the front of the coach into the coach heating and cooling system to provide seven air changes per hour. Fresh air will be provided to the driver's area through a gasper-type adjustable outlet below the dash. In addition to the internal fresh air damper in the front dash, controlled fresh air will be introduced into the main under-floor unit.

## HVAC Controller

The microprocessor-based controller will start in the previously selected mode and temperature for the passenger area. If the initial coach temperature is higher or lower than the set point, the high-speed fan with maximum heating or cooling will be automatically selected. Fans will return to low speed when set point is reached. The driver may select set point temperatures ranging from 60 to 80° F (15 to 26° C) for the passenger zone.

A rotary switch, located in the left-hand console will enable the driver to adjust temperature in driver's area.

To control temperature, the controller will modulate the operation of the glycol valves, liquid line solenoid valves, fresh air, and compressor capacity through inputs from interior temperature, ambient temperature, suction, and discharge pressure transducers.

Alarm conditions and operating parameters will be displayed when diagnostics are activated. It will appear on the HVAC display control module located in the left-hand control panel.

## Compressor

A four cylinder, short-stroke 39.4 cubic inch (.65 liter) Bitzer 4NFC compressor, or approved equal, with a bi-directional maintenance free magnetic clutch will be mounted in the engine compartment, and driven directly from the main power plant through dual Kevlar-reinforced belts. A lubricated stainless steel turnbuckle tensioner will maintain belt tension. The compressor, equipped with two electric unloaders, will load and unload automatically based on pressure to prevent coil freeze-up.

## AC Condenser Module

The condenser module will be installed in the condenser compartment on the roadside of the coach between the No. 3 baggage compartment and the rear wheel housing.

### ***The condenser installation will feature:***

- Twin, two-speed field wound, 0.8 horsepower (0.6 kW), 24-volt motors
- Motors equipped with water slingers and stainless steel shafts
- 18-inch (457 mm) fans fitted with shrouds
- System which engages automatically when the engine is started (if air conditioning is required)
- Three-level control of fan operation
- Nominal total fan output of 5,500 ft<sup>3</sup>/minute (156 m<sup>3</sup>) at high speed, 3,000 ft<sup>3</sup>/min. (85 m<sup>3</sup>) at low speed.

### ***The stationary condenser coil will include:***

- Internally enhanced (cross-hatch) copper tubes
- Corrosion-resistant black epoxy coated aluminum fins and frames
- Nominal fin surface area of 1,290 in<sup>2</sup> (8,323 cm<sup>2</sup>)

## HVAC System Capacities

### Main system

The main under-floor evaporator blowers will be centrifugal type, driven by a two-speed twin shaft 1.6 horsepower (1.19 kW), 24-volt motor.

**Driver's System** - The front dash system will be driven by two permanent magnet, variable speed, 24-volt motors, each operating two double inlet centrifugal type blowers.

Designed nominal heater capacities, based on 160° F (71° C) water-glycol solution and 60° F (15.6° C) coach air temperature, will be as follows:

- 122,000 BTU/hr (35.7 kW/hr) for under-floor system
- 37,000 BTU/hr (10.8 kW/hr) for the driver's system

Two parcel rack blowers, one on each side of the coach, will circulate 450 ft<sup>3</sup> (12.7 m<sup>3</sup>) of air per minute through gaspers in the parcel rack service modules when set on high speed.

## **Interior Climate Control**

***NOTE: Performance characteristics listed are based on using R134A refrigerant.***

When the temperature outside the coach is –10 to 110° Fahrenheit (-23 to 43° C) the interior climate for all areas of the passenger compartments will be automatically maintained between 60 and 80° Fahrenheit (16 to 26° C).

## **Boost Pump**

This pump is used to pump coolant to the HVAC system. It will increase the flow from the engine coolant pump.

- The pump will activate automatically when the HVAC system calls for heat in the coach
- The pump is a seal-less circulating pump with a magnetic drive
- The motor is a single speed 24-volt brushless unit

## **Lavatory**

An ergonomically designed lavatory without a wash basin will be installed in the rear curbside corner of the coach. It will feature:

- Sculpted interior fiberglass walls and molded ABS trim panels in a sanitary grade,
- ABS plastic molded door with an easily accessible lock mechanism. The door will open outward and provide a nominal 18-inch (457-mm) clear opening,
- Dimpled, stainless steel flooring,
- One light above the lavatory mirror and second light in ceiling activated by the latch locking mechanism,
- Grab handle made of stainless steel tubing, vertically installed on the curbside wall,
- Grab handle made of stainless steel tubing, vertically installed on the roadside wall next to the lavatory door,
- lavatory bench will be stipple-texture painted.

## **Toilet**

A chemical-type toilet be set at a nominal 20° angle from the rear curbside corner of the coach.

## **Plumbing**

A manually operated slide dump valve will be provided to drain the 18.5 US gallon (70.0 L) chemical tank. A large clean-out plug will be provided in one end of the tank. The toilet bowl, chemical tank, and main dump tube will be made of stainless steel.

## **Accessories**

***The following accessories will be provided in the lavatory compartment:***

- Emergency button for signalling the driver installed on the curbside of the coach
- Large mirror on the back wall
- Roll-type toilet tissue dispenser (will hold two rolls)
- Waste paper container access through the wall
- Dispenser cabinet, with a mirrored door, on the roadside wall, containing wet and dry towel.

#### **IV. Information For Offerors To Submit**

INFORMATION FOR OFFERORS TO SUBMIT – GENERAL (JAN 2006): Offeror shall submit a signed Cover Page and Page Two. Offeror should submit all other information and documents requested in this part and in parts II.B. Special Instructions; III. Scope of Work; V. Qualifications; VIII. Bidding Schedule/Price Proposal; and any appropriate attachments addressed in section IX. Attachments to Solicitations.

#### **MINORITY PARTICIPATION (JAN 2006)**

**Is the bidder a South Carolina Certified Minority Business?**  Yes  NO

**Is the bidder a Minority Business certified by another governmental entity?**  Yes  NO

**If so, please list the certifying governmental entity:** \_\_\_\_\_

**Will any of the work under this contract be performed by a SC certified Minority Business as a subcontractor?**  Yes  NO

**If so, what percentage of the total value of the contract will be performed by a SC certified Minority Business as a subcontractor?**  Yes  NO

**Will any of the work under this contract be performed by a minority business certified by another governmental entity as a subcontractor?**  Yes  NO

**If so, what percentage of the total value of the contract will be performed by a minority business certified by another governmental entity as a subcontractor?**  Yes  NO

**If a certified Minority Business is participating in this contract, please indicate all categories for which the Business is certified:**

- Traditional minority
- Traditional minority, but female
- Women (Caucasian females)
- Hispanic minorities
- DOT referral (Traditional minority)
- DOT referral (Caucasian female)
- Temporary certification
- SBA 8 (a) certification referral
- Other minorities (Native American, Asian, etc.)

**(If more than one minority contractor will be utilized in the performance of this contract, please provide the information above for each minority business.)**

#### **V. Qualifications**

QUALIFICATION OF OFFEROR (JANUARY 2006): To be eligible for award of a contract, a prospective contractor must be responsible. In evaluating an Offeror's responsibility, the State Standards of Responsibility [R.19-445.2125] and information from any other source may be considered. An Offeror must, upon request of the State, furnish satisfactory evidence of its ability to meet all contractual requirements. Unreasonable failure to supply information promptly in connection with a responsibility inquiry may be grounds for determining that you are ineligible to receive an award. S.C. Code Section 11-35-1810.

SUBCONTRACTOR – IDENTIFICATION (JAN 2006): If you intend to subcontract with another business for any portion of the work and that portion exceeds 10% of your price, your offer must identify that business and the portion of work which they are to perform. Identify potential subcontractors by providing the business' name, address, phone, taxpayer identification number, and point of contact. In determining your responsibility, the state may evaluate your proposed subcontractors.

## **VI. Award Criteria**

AWARD CRITERIA – BIDS (JANUARY 2006): Award will be made to the lowest responsible and responsive bidder(s).

UNIT PRICE GOVERNS (JANUARY 2006): In determining award, unit prices will govern over extended prices unless otherwise stated.

AWARD TO ONE OFFEROR (JAN 2006): Award will be made to one Offeror.

## **VII. Terms and Conditions - A. General**

ASSIGNMENT (JANUARY 2006): No contract or its provisions may be assigned, sublet, or transferred without the written consent of the Procurement Officer.

BANKRUPTCY (JANUARY 2006): (a) Notice. In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish written notification of the bankruptcy to the Using Governmental Unit. This notification shall be furnished within five (5) days of the initiation of the proceedings relating to the bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of all State contracts against which final payment has not been made. This obligation remains in effect until final payment under this Contract. (b) Termination. This contract is voidable and subject to immediate termination by the State upon the contractor's insolvency, including the filing of proceedings in bankruptcy.

CHOICE-OF-LAW (JANUARY 2006): The Agreement, any dispute, claim, or controversy relating to the Agreement, and all the rights and obligations of the parties shall, in all respects, be interpreted, construed, enforced and governed by and under the laws of the State of South Carolina, except its choice of law rules. As used in this paragraph, the term "Agreement" means any transaction or agreement arising out of, relating to, or contemplated by the solicitation.

CONTRACT DOCUMENTS & ORDER OF PRECEDENCE (JANUARY 2006): (a) Any contract resulting from this solicitation shall consist of the following documents: (1) a Record of Negotiations, if any, executed by you and the Procurement Officer, (2) documentation regarding the clarification of an offer [e.g., 11-35-1520(8) or 11-35-1530(6)], if applicable, (3) the solicitation, as amended, (4) modifications, if any, to your offer, if accepted by the Procurement Officer, (5) your offer, (6) any statement reflecting the state's final acceptance (a/k/a "award"), and (7) purchase orders. These documents shall be read to be consistent and complimentary. Any conflict among these documents shall be resolved by giving priority to these documents in the order listed above. (b) The terms and conditions of documents (1) through (6) above shall apply notwithstanding any additional or different terms and conditions in either (i) a purchase order or other instrument submitted by the State or (ii) any invoice or other document submitted by Contractor. Except as otherwise allowed herein, the terms and conditions of all such documents shall be void and of no effect. (c) No contract, license, or other agreement containing contractual terms and conditions will be signed by any Using Governmental Unit. Any document signed or otherwise agreed to by persons other than the Procurement Officer shall be void and of no effect.

DISCOUNT FOR PROMPT PAYMENT (JANUARY 2006)

(a) Discounts for prompt payment will not be considered in the evaluation of offers. However, any offered discount will form a part of the award, and will be taken if payment is made within the discount period indicated in the offer by the offeror. As an alternative to offering a discount for prompt payment in conjunction with the offer, offerors awarded contracts may include discounts for prompt payment on individual invoices.

(b) In connection with any discount offered for prompt payment, time shall be computed from the date of the invoice. If the Contractor has not placed a date on the invoice, the due date shall be calculated from the date the designated billing office receives a proper invoice, provided the state annotates such invoice with the date of receipt at the time of receipt. For the purpose of computing the discount earned, payment shall be considered to have been made on the date that appears on the payment check or, for an electronic funds transfer, the specified payment date. When the discount date falls on a Saturday, Sunday, or legal holiday when Federal Government offices are closed and Government business is not expected to be conducted, payment may be made on the following business day.

DISPUTES (JANUARY 2006): (1) Choice-of-Forum. All disputes, claims, or controversies relating to the Agreement shall be resolved exclusively by the appropriate Chief Procurement Officer in accordance with Title 11, Chapter 35, Article 17 of

the South Carolina Code of Laws, or in the absence of jurisdiction, only in the Court of Common Pleas for, or a federal court located in, Richland County, State of South Carolina. Contractor agrees that any act by the Government regarding the Agreement is not a waiver of either the Government's sovereign immunity or the Government's immunity under the Eleventh Amendment of the United State's Constitution. As used in this paragraph, the term "Agreement" means any transaction or agreement arising out of, relating to, or contemplated by the solicitation. (2) Service of Process. Contractor consents that any papers, notices, or process necessary or proper for the initiation or continuation of any disputes, claims, or controversies relating to the Agreement; for any court action in connection therewith; or for the entry of judgment on any award made, may be served on Contractor by certified mail (return receipt requested) addressed to Contractor at the address provided as the Notice Address on Page Two or by personal service or by any other manner that is permitted by law, in or outside South Carolina. Notice by certified mail is deemed duly given upon deposit in the United States mail.

**EQUAL OPPORTUNITY (JANUARY 2006).** Contractor is referred to and shall comply with all applicable provisions, if any, of Title 41, Part 60 of the Code of Federal Regulations, including but not limited to Sections 60-1.4, 60-4.2, 60-4.3, 60-250.5(a), and 60-741.5(a), which are hereby incorporated by reference.

**FALSE CLAIMS (JANUARY 2006):** According to the S.C. Code of Laws § 16-13-240, "a person who by false pretense or representation obtains the signature of a person to a written instrument or obtains from another person any chattel, money, valuable security, or other property, real or personal, with intent to cheat and defraud a person of that property is guilty" of a crime.

**FIXED PRICING REQUIRED (JANUARY 2006):** Any pricing provided by contractor shall include all costs for performing the work associated with that price. Except as otherwise provided in this solicitation, contractor's price shall be fixed for the duration of this contract, including option terms. This clause does not prohibit contractor from offering lower pricing after award.

**NON-INDEMNIFICATION (JANUARY 2006):** Any term or condition is void to the extent it requires the State to indemnify anyone.

**NOTICE (JANUARY 2006):** (A) After award, any notices shall be in writing and shall be deemed duly given (1) upon actual delivery, if delivery is by hand, (2) upon receipt by the transmitting party of automated confirmation or answer back from the recipient's device if delivery is by telex, telegram, facsimile, or electronic mail, or (3) upon deposit into the United States mail, if postage is prepaid, a return receipt is requested, and either registered or certified mail is used. (B) Notice to contractor shall be to the address identified as the Notice Address on Page Two. Notice to the state shall be to the Procurement Officer's address on the Cover Page. Either party may designate a different address for notice by giving notice in accordance with this paragraph.

**PAYMENT & INTEREST (MAY 2011):** (a) Unless otherwise provided in this Solicitation, the State shall pay the Contractor, after the submission of proper invoices or vouchers, the prices stipulated in this contract for supplies delivered and accepted or services rendered and accepted, less any deductions provided in this contract. Unless otherwise specified herein, including the purchase order, payment shall not be made on partial deliveries accepted by the Government. (b) Unless otherwise provided herein, including the purchase order, payment will be made by check. (c) Notwithstanding any other provision, payment shall be made in accordance with S.C. Code Section 11-35-45, which provides the Contractor's exclusive means of recovering any type of interest from the Owner. Contractor waives imposition of an interest penalty unless the invoice submitted specifies that the late penalty is applicable. Except as set forth in this paragraph, the State shall not be liable for the payment of interest on any debt or claim arising out of or related to this contract for any reason. (d) Amounts due to the State shall bear interest at the rate of interest established by the South Carolina Comptroller General pursuant to Section 11-35-45 ("an amount not to exceed fifteen percent each year"), as amended. (e) Any other basis for interest, including but not limited to general (pre- and post-judgment) or specific interest statutes, including S.C. Code Ann. § 34-31-20, are expressly waived by both parties. If a court, despite this agreement and waiver, requires that interest be paid on any debt by either party other than as provided by items (c) and (d) above, the parties further agree that the applicable interest rate for any given calendar year shall be the lowest prime rate as listed in the first edition of the Wall Street Journal published for each year, applied as simple interest without compounding.

**PUBLICITY (JANUARY 2006):** Contractor shall not publish any comments or quotes by State employees, or include the State in either news releases or a published list of customers, without the prior written approval of the Procurement Officer.

**PURCHASE ORDERS (JANUARY 2006):** Contractor shall not perform any work prior to the receipt of a purchase order from the using governmental unit. The using governmental unit shall order any supplies or services to be furnished under this contract by issuing a purchase order. Purchase orders may be used to elect any options available under this contract, e.g., quantity, item, delivery date, payment method, but are subject to all terms and conditions of this contract. Purchase orders may be electronic. No particular form is required. An order placed pursuant to the purchasing card provision qualifies as a purchase order.

SETOFF (JANUARY 2006) The state shall have all of its common law, equitable, and statutory rights of set-off. These rights shall include, but not be limited to, the State's option to withhold for the purposes of set-off any moneys due to the Contractor under this contract up to any amounts due and owing to the state with regard to this contract, any other contract with any state department or agency, including any contract for a term commencing prior to the term of this contract, plus any amounts due and owing to the state for any other reason including, without limitation, tax delinquencies, fee delinquencies or monetary penalties relative thereto.

SURVIVAL OF OBLIGATIONS (JANUARY 2006): The Parties' rights and obligations which, by their nature, would continue beyond the termination, cancellation, rejection, or expiration of this contract shall survive such termination, cancellation, rejection, or expiration, including, but not limited to, the rights and obligations created by the following clauses: Indemnification - Third Party Claims, Intellectual Property Indemnification, and any provisions regarding warranty or audit.

TAXES (JANUARY 2006): Any tax the contractor may be required to collect or pay upon the sale, use or delivery of the products shall be paid by the State, and such sums shall be due and payable to the contractor upon acceptance. Any personal property taxes levied after delivery shall be paid by the State. It shall be solely the State's obligation, after payment to contractor, to challenge the applicability of any tax by negotiation with, or action against, the taxing authority. Contractor agrees to refund any tax collected, which is subsequently determined not to be proper and for which a refund has been paid to contractor by the taxing authority. In the event that the contractor fails to pay, or delays in paying, to any taxing authorities, sums paid by the State to contractor, contractor shall be liable to the State for any loss (such as the assessment of additional interest) caused by virtue of this failure or delay. Taxes based on Contractor's net income or assets shall be the sole responsibility of the contractor.

TERMINATION DUE TO UNAVAILABILITY OF FUNDS (JANUARY 2006) Payment and performance obligations for succeeding fiscal periods shall be subject to the availability and appropriation of funds therefore. When funds are not appropriated or otherwise made available to support continuation of performance in a subsequent fiscal period, the contract shall be canceled. In the event of a cancellation pursuant to this paragraph, contractor will be reimbursed the resulting unamortized, reasonably incurred, nonrecurring costs. Contractor will not be reimbursed any costs amortized beyond the initial contract term.

THIRD PARTY BENEFICIARY (JANUARY 2006) This Contract is made solely and specifically among and for the benefit of the parties hereto, and their respective successors and assigns, and no other person will have any rights, interest, or claims hereunder or be entitled to any benefits under or on account of this Contract as a third party beneficiary or otherwise.

WAIVER (JANUARY 2006) The State does not waive any prior or subsequent breach of the terms of the Contract by making payments on the Contract, by failing to terminate the Contract for lack of performance, or by failing to strictly or promptly insist upon any term of the Contract. Only the Procurement Officer has actual authority to waive any of the State's rights under this Contract. Any waiver must be in writing.

## **VII. Terms and Conditions - B. Special**

HIPAA LAW: The Contractor agrees that to the extent that some or all of the activities within the scope of this Contract are subject to the Health Insurance Portability Accountability Act of 1996, P.L. 104-91, as amended ("HIPAA"), or its implementing regulations, it will comply with the HIPAA requirements and will execute such agreements and practices as the University of South Carolina may require to ensure compliance. Additional information may be viewed at: <http://www.sc.edu/hipaa/>

PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT - The University of South Carolina requires that all contractual activities to be in compliance with local, state and federal mandates concerning "protection of human health and the environment". In addition, the University of South Carolina is a "Drug Free Work Place" and requires all contractors to comply with South Carolina Code of Laws Section 41-15-10 ET sequence (1976 w/amendments). Any contractor doing business with the University will be required to document compliance with these mandates and to furnish specific information requested by the University's Department of Environmental Health and Safety when notified to do so. The Contractor understands and agrees that jobsites are open at all times work is being performed by the Contractor to authorized University employees who have been trained to identify unsafe work conditions. The Contractor will immediately correct any deficiencies noted by these inspections when requested by the University's Department of Environmental Health and Safety to do so. In work areas where a specific hazard is posed which includes but is not limited to lead paint and asbestos abatement projects, Contractors will be required to produce Lead Compliance Plans and Asbestos



Project Designs which outline their method of work prior to the start of work. Each contractor shall designate a responsible member of the Contractor's organization to be at the site whose duty shall be the prevention of accidents. By submission of this bid, the vendor agrees to take all necessary steps to insure compliance with the requirements outlined above.

**SUBSTITUTIONS PROHIBITED - END PRODUCT PREFERENCES (SEP 2009):** If you receive the award as a result of the South Carolina end product or United States end product preference, you may not substitute a nonqualifying end product for a qualified end product. If you violate this provision, the State may terminate your contract for cause and you may be debarred. In addition, you shall pay to the State an amount equal to twice the difference between the price paid by the State and your evaluated price for the item for which you delivered a substitute. [11-35-1534(B)(4)]

**CISG (JAN 2006):** The parties expressly agree that the UN Convention on the International Sale of Goods shall not apply to this agreement.

**CHANGES (JAN 2006):**

(1) **Contract Modification.** By a written order, at any time, and without notice to any surety, the Procurement Officer may, subject to all appropriate adjustments, make changes within the general scope of this contract in any one or more of the following:

- (a) drawings, designs, or specifications, if the supplies to be furnished are to be specially manufactured for the [State] in accordance therewith;
- (b) method of shipment or packing;
- (c) place of delivery;
- (d) description of services to be performed;
- (e) time of performance (i.e., hours of the day, days of the week, etc.); or,
- (f) place of performance of the services.

Subparagraphs (a) to (c) apply only if supplies are furnished under this contract. Subparagraphs (d) to (f) apply only if services are performed under this contract.

(2) **Adjustments of Price or Time for Performance.** If any such change increases or decreases the contractor's cost of, or the time required for, performance of any part of the work under this contract, whether or not changed by the order, an adjustment shall be made in the contract price, the delivery schedule, or both, and the contract modified in writing accordingly. Any adjustment in contract price made pursuant to this clause shall be determined in accordance with the Price Adjustment Clause of this contract. Failure of the parties to agree to an adjustment shall not excuse the contractor from proceeding with the contract as changed, provided that the State promptly and duly make such provisional adjustments in payment or time for performance as may be reasonable. By proceeding with the work, the contractor shall not be deemed to have prejudiced any claim for additional compensation, or an extension of time for completion.

(3) **Time Period for Claim.** Within 30 days after receipt of a written contract modification under Paragraph (1) of this clause, unless such period is extended by the Procurement Officer in writing, the contractor shall file notice of intent to assert a claim for an adjustment. Later notification shall not bar the contractor's claim unless the State is prejudiced by the delay in notification.

(4) **Claim Barred After Final Payment.** No claim by the contractor for an adjustment hereunder shall be allowed if notice is not given prior to final payment under this contract.

**COMPLIANCE WITH LAWS (JAN 2006):** During the term of the contract, contractor shall comply with all applicable provisions of laws, codes, ordinances, rules, regulations, and tariffs.

**DEFAULT (JAN 2006):**

(a)(1) The State may, subject to paragraphs (c) and (d) of this clause, by written notice of default to the Contractor, terminate this contract in whole or in part if the Contractor fails to-

(i) Deliver the supplies or to perform the services within the time specified in this contract or any extension;

(ii) Make progress, so as to endanger performance of this contract (but see paragraph (a)(2) of this clause); or

(iii) Perform any of the other material provisions of this contract (but see paragraph (a)(2) of this clause).

(2) The State's right to terminate this contract under subdivisions (a)(1)(ii) and (1)(iii) of this clause, may be exercised if the Contractor does not cure such failure within 10 days (or more if authorized in writing by the Procurement Officer) after receipt of the notice from the Procurement Officer specifying the failure.

(b) If the State terminates this contract in whole or in part, it may acquire, under the terms and in the manner the Procurement Officer considers appropriate, supplies or services similar to those terminated, and the Contractor will be

liable to the State for any excess costs for those supplies or services. However, the Contractor shall continue the work not terminated.

(c) Except for defaults of subcontractors at any tier, the Contractor shall not be liable for any excess costs if the failure to perform the contract arises from causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include (1) acts of God or of the public enemy, (2) acts of the State in either its sovereign or contractual capacity, (3) fires, (4) floods, (5) epidemics, (6) quarantine restrictions, (7) strikes, (8) freight embargoes, and (9) unusually severe weather. In each instance the failure to perform must be beyond the control and without the fault or negligence of the Contractor.

(d) If the failure to perform is caused by the default of a subcontractor at any tier, and if the cause of the default is beyond the control of both the Contractor and subcontractor, and without the fault or negligence of either, the Contractor shall not be liable for any excess costs for failure to perform, unless the subcontracted supplies or services were obtainable from other sources in sufficient time for the Contractor to meet the required delivery schedule.

(e) If this contract is terminated for default, the State may require the Contractor to transfer title and deliver to the State, as directed by the Procurement Officer, any (1) completed supplies, and (2) partially completed supplies and materials, parts, tools, dies, jigs, fixtures, plans, drawings, information, and contract rights (collectively referred to as "manufacturing materials" in this clause) that the Contractor has specifically produced or acquired for the terminated portion of this contract. Upon direction of the Procurement Officer, the Contractor shall also protect and preserve property in its possession in which the State has an interest.

(f) The State shall pay contract price for completed supplies delivered and accepted. The Contractor and Procurement Officer shall agree on the amount of payment for manufacturing materials delivered and accepted and for the protection and preservation of the property; if the parties fail to agree, the Procurement Officer shall set an amount subject to the Contractor's rights under the Disputes clause. Failure to agree will be a dispute under the Disputes clause. The State may withhold from these amounts any sum the Procurement Officer determines to be necessary to protect the State against loss because of outstanding liens or claims of former lien holders.

(g) If, after termination, it is determined that the Contractor was not in default, or that the default was excusable, the rights and obligations of the parties shall, if the contract contains a clause providing for termination for convenience of the State, be the same as if the termination had been issued for the convenience of the State. If, in the foregoing circumstances, this contract does not contain a clause providing for termination for convenience of the State, the contract shall be adjusted to compensate for such termination and the contract modified accordingly subject to the contractor's rights under the Disputes clause.

(h) The rights and remedies of the State in this clause are in addition to any other rights and remedies provided by law or under this contract.

**MATERIAL AND WORKMANSHIP (JAN 2006):** Unless otherwise specifically provided in this contract, all equipment, material, and articles incorporated in the work covered by this contract are to be new and of the most suitable grade for the purpose intended.

**PRICE ADJUSTMENTS (JAN 2006):** (1) Method of Adjustment. Any adjustment in the contract price made pursuant to a clause in this contract shall be consistent with this Contract and shall be arrived at through whichever one of the following ways is the most valid approximation of the actual cost to the Contractor (including profit, if otherwise allowed):

(a) by agreement on a fixed price adjustment before commencement of the pertinent performance or as soon thereafter as practicable;

(b) by unit prices specified in the Contract or subsequently agreed upon;

(c) by the costs attributable to the event or situation covered by the relevant clause, including profit if otherwise allowed, all as specified in the Contract; or subsequently agreed upon;

(d) in such other manner as the parties may mutually agree; or,

(e) in the absence of agreement by the parties, through a unilateral initial written determination by the Procurement Officer of the costs attributable to the event or situation covered by the clause, including profit if otherwise allowed, all as computed by the Procurement Officer in accordance with generally accepted accounting principles, subject to the provisions of Title 11, Chapter 35, Article 17 of the S.C. Code of Laws.

(2) Submission of Price or Cost Data. Upon request of the Procurement Officer, the contractor shall provide reasonably available factual information to substantiate that the price or cost offered, for any price adjustments is reasonable, consistent with the provisions of Section 11-35-1830.

PRICING DATA – AUDIT – INSPECTION (JAN 2006) [Clause Included Pursuant to § 11-35-1830, - 2210, & -2220] (a) Cost or Pricing Data. Upon Procurement Officer's request, you shall submit cost or pricing data, as defined by 48 C.F.R. § 2.101 (2004), prior to either (1) any award to contractor pursuant to 11-35-1530 or 11-35-1560, if the total contract price exceeds \$500,000, or (2) execution of a change order or contract modification with contractor which exceeds \$100,000. Your price, including profit or fee, shall be adjusted to exclude any significant sums by which the state finds that such price was increased because you furnished cost or pricing data that was inaccurate, incomplete, or not current as of the date agreed upon between parties. (b) Records Retention. You shall maintain your records for three years from the date of final payment, or longer if requested by the chief Procurement Officer. The state may audit your records at reasonable times and places. As used in this subparagraph (b), the term "records" means any books or records that relate to cost or pricing data submitted pursuant to this clause. In addition to the obligation stated in this subparagraph (b), you shall retain all records and allow any audits provided for by 11-35-2220(2). (c) Inspection. At reasonable times, the state may inspect any part of your place of business which is related to performance of the work. (d) Instructions – Certification. When you submit data pursuant to subparagraph (a), you shall (1) do so in accordance with the instructions appearing in Table 15-2 of 48 C.F.R. § 15.408 (2004) (adapted as necessary for the state context), and (2) submit a Certificate of Current Cost or Pricing Data, as prescribed by 48 CFR § 15.406-2(a) (adapted as necessary for the state context). (e) Subcontracts. You shall include the above text of this clause in all of your subcontracts. (f) Nothing in this clause limits any other rights of the state.

RELATIONSHIP OF THE PARTIES (JAN 2006): Neither party is an employee, agent, partner, or joint venturer of the other. Neither party has the right or ability to bind the other to any agreement with a third party or to incur any obligation or liability on behalf of the other party.

SHIPPING / RISK OF LOSS (JAN 2006): F.O.B. Destination. Destination is the shipping dock of the Using Governmental Units' designated receiving site, or other location, as specified herein. (See Delivery clause)

TERMINATION FOR CONVENIENCE (JAN 2006): (1) Termination. The Procurement Officer may terminate this contract in whole or in part, for the convenience of the State. The Procurement Officer shall give written notice of the termination to the contractor specifying the part of the contract terminated and when termination becomes effective.

(2) Contractor's Obligations. The contractor shall incur no further obligations in connection with the terminated work and on the date set in the notice of termination the contractor will stop work to the extent specified. The contractor shall also terminate outstanding orders and subcontracts as they relate to the terminated work. The contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders connected with the terminated work. The Procurement Officer may direct the contractor to assign the contractor's right, title, and interest under terminated orders or subcontracts to the State. The contractor must still complete the work not terminated by the notice of termination and may incur obligations as are necessary to do so.

(3) Right to Supplies. The Procurement Officer may require the contractor to transfer title and deliver to the State in the manner and to the extent directed by the Procurement Officer: (a) any completed supplies; and (b) such partially completed supplies and materials, parts, tools, dies, jigs, fixtures, plans, drawings, information, and contract rights (hereinafter called "manufacturing material") as the contractor has specifically produced or specially acquired for the performance of the terminated part of this contract. The contractor shall, upon direction of the Procurement Officer, protect and preserve property in the possession of the contractor in which the State has an interest. If the Procurement Officer does not exercise this right, the contractor shall use best efforts to sell such supplies and manufacturing materials in accordance with the standards of Uniform Commercial Code Section 2-706. Utilization of this Section in no way implies that the State has breached the contract by exercise of the Termination for Convenience Clause.

(4) Compensation. (a) The contractor shall submit a termination claim specifying the amounts due because of the termination for convenience together with cost or pricing data required by Section 11-35-1830 bearing on such claim. If the contractor fails to file a termination claim within one year from the effective date of termination, the Procurement Officer may pay the contractor, if at all, an amount set in accordance with Subparagraph (c) of this Paragraph.

(b) The Procurement Officer and the contractor may agree to a settlement and that the settlement does not exceed the total contract price plus settlement costs reduced by payments previously made by the State, the proceeds of any sales of supplies and manufacturing materials under Paragraph (3) of this clause, and the contract price of the work not terminated;

(c) Absent complete agreement under Subparagraph (b) of this Paragraph, the Procurement Officer shall pay the contractor the following amounts, provided payments agreed to under Subparagraph (b) shall not duplicate payments under this Subparagraph:

(i) contract prices for supplies or services accepted under the contract;

(ii) costs reasonably incurred in performing the terminated portion of the work less amounts paid or to be paid for accepted supplies or services;

(iii) reasonable costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to Paragraph (2) of this clause. These costs must not include costs paid in accordance with Subparagraph (c)(ii) of this paragraph;

(iv) any other reasonable costs that have resulted from the termination. The total sum to be paid the contractor under this Subparagraph shall not exceed the total contract price plus the reasonable settlement costs of the contractor reduced by the

amount of payments otherwise made, the proceeds of any sales of supplies and manufacturing materials under Subparagraph (b) of this Paragraph, and the contract price of work not terminated.

(d) Contractor must demonstrate any costs claimed, agreed to, or established under Subparagraphs (b) and (c) of this Paragraph using its standard record keeping system, provided such system is consistent with any applicable Generally Accepted Accounting Principles.

(5) Contractor's failure to include an appropriate termination for convenience clause in any subcontract shall not (i) affect the state's right to require the termination of a subcontract, or (ii) increase the obligation of the state beyond what it would have been if the subcontract had contained an appropriate clause.

**ITEM SUBSTITUTION:** No substitution will be allowed on purchase orders received from departments without permission from the Purchasing Department.

**ILLEGAL IMMIGRATION (NOV. 2008):** (An overview is available at [www.procurement.sc.gov](http://www.procurement.sc.gov)) By signing your offer, you certify that you will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws and agree to provide to the State upon request any documentation required to establish either: (a) that Title 8, Chapter 14 is inapplicable to you and your subcontractors or sub-subcontractors; or (b) that you and your subcontractors or sub-subcontractors are in compliance with Title 8, Chapter 14. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony, and, upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." You agree to include in any contracts with your subcontractors language requiring your subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in their contracts with the sub-subcontractors language requiring the sub-subcontractors to comply with the applicable requirements of Title 8, Chapter 14. [07-7B097-1]

**WARRANTY – STANDARD (JAN 2006):** Contractor must provide the manufacturer's standard written warranty upon delivery of product. Contractor warrants that manufacturer will honor the standard written warranty provided.

**VIII. BIDDING SCHEDULE / PRICE-BUSINESS PROPOSAL**

Item	Qty	Unit of Measure	Description	Unit Price	Extended Price
1		Each	New Motor Coach as per specifications in Section III Scope of Work / Specifications of the solicitation	\$	\$

Resident Vendor Preference \_\_\_\_\_  
 SC End Product Preference \_\_\_\_\_  
 US End Product Preference \_\_\_\_\_

**Note:** The commodity preferences do not apply to a bid for an item of work by the bidder if the annual price of the bidder's work exceeds \$50,000 or the total potential price of the bidder's work exceeds \$500,000. [11-35-1524(E) (3)]

STATE WARRANTY: \_\_\_\_\_

MAKE: \_\_\_\_\_

MODEL: \_\_\_\_\_

Manufacturer Name: \_\_\_\_\_

Delivery Time: \_\_\_\_\_

Sales Tax will be adjusted accordingly; do not add sales tax.

## IX. ATTACHMENTS TO SOLICITATION

### IMPORTANT TAX NOTICE - NONRESIDENTS ONLY

Withholding Requirements for Payments to Nonresidents: Section 12-8-550 of the South Carolina Code of Laws requires persons hiring or contracting with a nonresident conducting a business or performing personal services of a temporary nature within South Carolina to withhold 2% of each payment made to the nonresident. The withholding requirement does not apply to (1) payments on purchase orders for tangible personal property when the payments are not accompanied by services to be performed in South Carolina, (2) nonresidents who are not conducting business in South Carolina, (3) nonresidents for contracts that do not exceed \$10,000 in a calendar year, or (4) payments to a nonresident who (a) registers with either the S.C. Department of Revenue or the S.C. Secretary of State and (b) submits a Nonresident Taxpayer Registration Affidavit - Income Tax Withholding, Form I-312 to the person letting the contract.

The withholding requirement applies to every governmental entity that uses a contract ("Using Entity"). Nonresidents should submit a separate copy of the Nonresident Taxpayer Registration Affidavit - Income Tax Withholding, Form I-312 to every Using Entity that makes payment to the nonresident pursuant to this solicitation. Once submitted, an affidavit is valid for all contracts between the nonresident and the Using Entity, unless the Using Entity receives notice from the Department of Revenue that the exemption from withholding has been revoked.

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Section 12-8-540 requires persons making payment to a nonresident taxpayer of rentals or royalties at a rate of \$1,200.00 or more a year for the use of or for the privilege of using property in South Carolina to withhold 7% of the total of each payment made to a nonresident taxpayer who is not a corporation and 5% if the payment is made to a corporation. Contact the Department of Revenue for any applicable exceptions.

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For information about other withholding requirements (e.g., employee withholding), contact the Withholding Section at the South Carolina Department of Revenue at 803-898-5383 or visit the Department's website at [www.sctax.org](http://www.sctax.org).

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This notice is for informational purposes only. This agency does not administer and has no authority over tax issues. All registration questions should be directed to the License and Registration Section at 803-898-5872 or to the South Carolina Department of Revenue, Registration Unit, Columbia, S.C. 29214-0140. All withholding questions should be directed to the Withholding Section at 803-898-5383.



STATE OF SOUTH CAROLINA  
DEPARTMENT OF REVENUE  
**NONRESIDENT TAXPAYER  
REGISTRATION AFFIDAVIT  
INCOME TAX WITHHOLDING**

**I-312**  
(Rev. 5/7/04)  
3323

**The undersigned nonresident taxpayer on oath, being first duly sworn, hereby certifies as follows:**

- 1. Name of Nonresident Taxpayer: \_\_\_\_\_
- 2. Trade Name, if applicable (Doing Business As): \_\_\_\_\_
- 3. Mailing Address: \_\_\_\_\_
- 4. Federal Identification Number: \_\_\_\_\_
- 5. Hiring or Contracting with: \_\_\_\_\_
- Name: \_\_\_\_\_
- Address: \_\_\_\_\_
- Receiving Rentals or Royalties From: \_\_\_\_\_
- Name: \_\_\_\_\_
- Address: \_\_\_\_\_
- Beneficiary of Trusts and Estates: \_\_\_\_\_
- Name: \_\_\_\_\_
- Address: \_\_\_\_\_

6. I hereby certify that the above named nonresident taxpayer is currently registered with  
**(check the appropriate box):**  
 The South Carolina Secretary of State or  
 The South Carolina Department of Revenue

Date of Registration: \_\_\_\_\_

7. I understand that by this registration, the above named nonresident taxpayer has agreed to be subject to the jurisdiction of the South Carolina Department of Revenue and the courts of South Carolina to determine its South Carolina tax liability, including estimated taxes, together with any related interest and penalties.

8. I understand the South Carolina Department of Revenue may revoke the withholding exemption granted under Code Sections 12-8-540 (rentals), 12-8-550 (temporarily doing business or professional services in South Carolina), and 12-8-570 (distributions to nonresident beneficiary by trusts or estates) at any time it determines that the above named nonresident taxpayer is not cooperating with the Department in the determination of its correct South Carolina tax liability.

The undersigned understands that any false statement contained herein could be punished by fine, imprisonment or both.

Recognizing that I am subject to the criminal penalties under Code Section 12-54-44 (B) (6) (a) (i), I declare that I have examined this affidavit and to the best of my knowledge and belief, it is true, correct and complete.

(Seal) \_\_\_\_\_

Signature of Nonresident Taxpayer (Owner, Partner or Corporate Officer, when relevant) \_\_\_\_\_ Date \_\_\_\_\_

If Corporate officer state title: \_\_\_\_\_

\_\_\_\_\_  
(Name - Please Print)

**Mail to:** The company or individual you are contracting with.

# OFFEROR'S CHECKLIST

## *AVOID COMMON BID/PROPOSAL MISTAKES*

Review this checklist prior to submitting your bid/proposal.  
If you fail to follow this checklist, you risk having your bid/proposal rejected.

- DO NOT INCLUDE ANY OF YOUR STANDARD CONTRACT FORMS!
- UNLESS EXPRESSLY REQUIRED, DO NOT INCLUDE ANY ADDITIONAL BOILERPLATE CONTRACT CLAUSES.
- REREAD YOUR ENTIRE BID/PROPOSAL TO MAKE SURE YOUR BID/PROPOSAL DOES NOT TAKE EXCEPTION TO ANY OF THE STATE'S MANDATORY REQUIREMENTS.
- MAKE SURE YOU HAVE PROPERLY MARKED ALL PROTECTED, CONFIDENTIAL, OR TRADE SECRET INFORMATION IN ACCORDANCE WITH THE INSTRUCTIONS ENTITLED: SUBMITTING CONFIDENTIAL INFORMATION. ***DO NOT MARK YOUR ENTIRE BID/PROPOSAL AS CONFIDENTIAL, TRADE SECRET, OR PROTECTED! DO NOT INCLUDE A LEGEND ON THE COVER STATING THAT YOUR ENTIRE RESPONSE IS NOT TO BE RELEASED!***
- HAVE YOU PROPERLY ACKNOWLEDGED ALL AMENDMENTS? INSTRUCTIONS REGARDING HOW TO ACKNOWLEDGE AN AMENDMENT SHOULD APPEAR IN ALL AMENDMENTS ISSUED.
- MAKE SURE YOUR BID/PROPOSAL INCLUDES A COPY OF THE SOLICITATION COVER PAGE. MAKE SURE THE COVER PAGE IS SIGNED BY A PERSON THAT IS AUTHORIZED TO CONTRACTUALLY BIND YOUR BUSINESS.
- MAKE SURE YOUR BID/PROPOSAL INCLUDES THE NUMBER OF COPIES REQUESTED.
- CHECK TO ENSURE YOUR BID/PROPOSAL INCLUDES EVERYTHING REQUESTED!
- IF YOU HAVE CONCERNS ABOUT THE SOLICITATION, DO NOT RAISE THOSE CONCERNS IN YOUR RESPONSE! **AFTER OPENING, IT IS TOO LATE! IF THIS SOLICITATION INCLUDES A PRE-BID/PROPOSAL CONFERENCE OR A QUESTION & ANSWER PERIOD, RAISE YOUR QUESTIONS AS A PART OF THAT PROCESS!** PLEASE SEE INSTRUCTIONS UNDER THE HEADING "SUBMISSION OF QUESTIONS" AND ANY PROVISIONS REGARDING PRE-BID/PROPOSAL CONFERENCES.

This checklist is included only as a reminder to help offerors avoid common mistakes.  
Responsiveness will be evaluated against the solicitation, not against this checklist.  
You do not need to return this checklist with your response.