



Suburban Bus Division of the  
Regional Transportation Authority

550 West Algonquin Road • Arlington Heights, Illinois 60005

PURCHASE ORDER NO. 230817 B	BEGIN DATE 21-JUL-20
CAPITAL Yes	END DATE 20-JUL-23
F.O.B	BUYER E Roglich
PAYMENT TERMS Net 30 Days	PO: 1 OF 3

**C**

**BLANKET #**

**230817 B 0**

1008556

Bruce Wiebe  
Motor Coach Industries Inc  
200 E Oakton St  
Des Plaines, IL 60018

NOTICE TO VENDOR

For prompt payment, send your invoice with PACE  
PO Number, in duplicate to:

ACCOUNTING SECTION  
PACE – HEADQUARTERS  
550 W ALGONQUIN RD  
ARLINGTON HTS, IL 60005-4412  
(847) 364-8130

ITM NO	QUANTITY	U/M	SKU NO	DESCRIPTION	VEN PART NO	UNIT PRICE	EXTENSION
1		Each		This confirms Contract No. 230817 dated July 21, 2020 between Pace, the Suburban Bus Division of the Regional Transportation Authority and Motor Coach Industries, Inc. for OTR Coach Buses.		0.00000	
				This is an Indefinite Delivery/Indefinite Quantity (IDIQ) contract. The minimum quantity to be purchased under this contract is five (5) buses. The total number of buses procured will not exceed the maximum amount of fifteen (15) buses. The initial contract is for seven (7) buses.			
2	7	Each		Coach 40' Diesel Bus (95% payment)		587,334.65000	4,111,342.55
3	7	Each		Coach 40' Diesel Bus (5% payment)		30,912.35000	216,386.45



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(847) 364-8130

ITM NO	QUANTITY	U/M	SKU NO	DESCRIPTION	VEN PART NO	UNIT PRICE	EXTENSION
4	7	Each		Apollo Surveillance System		19,703.00000	137,921.00
5	7	Each		Video Surveillance System		311.00000	2,177.00
6	7	Each		IBS Brackets & Installation		16,962.00000	118,734.00
7	7	Each		Full Body Wrap		5,920.00000	41,440.00

For Internal Use Only

- 1 Project 219115401, Task 11.13.01-001, Exp Type Capital
- 2 Project 219115401, Task 11.13.01-001, Exp Type Capital





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Regional Transportation Authority

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**C**

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F.O.B	BUYER E Roglich
PAYMENT TERMS Net 30 Days	PO: 3 OF 3

**BLANKET #**

**230817 B 0**

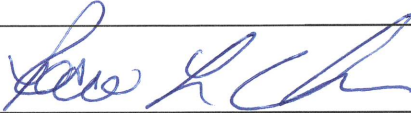
1008556

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Motor Coach Industries Inc  
200 E Oakton St  
Des Plaines, IL 60018

NOTICE TO VENDOR

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PO Number, in duplicate to:

ACCOUNTING SECTION  
PACE – HEADQUARTERS  
550 W ALGONQUIN RD  
ARLINGTON HTS, IL 60005-4412  
(847) 364-8130

ITM NO	QUANTITY	U/M	SKU NO	DESCRIPTION	VEN PART NO	UNIT PRICE	EXTENSION
3				Project 219115401, Task 11.13.01-001, Exp Type Capital			
4				Project 219115401, Task 11.13.01-001, Exp Type Capital			
5				Project 219115401, Task 11.13.01-001, Exp Type Capital			
6				Project 219115401, Task 11.13.01-001, Exp Type Capital			
7				Project 219115401, Task 11.13.01-001, Exp Type Capital			
<b>REQUISITION NO.</b> 419598						<b>TOTAL NOT TO EXCEED</b> 4,628,001.00	
							7/21/20
					Signature		Date

Contract No. 230817

**INVITATION FOR BID NO. 419598  
FORTY FOOT DIESEL POWERED MOBILITY DEVICE ACCESSIBLE  
OVER THE ROAD COACHES  
SPECIAL CONTRACT CONDITIONS/BID PRICE**

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THIS CONTRACT is entered into July 21, 2020 by and between Pace, Suburban Bus Division of the Regional Transportation Authority (hereinafter called Pace) and the Bidder/Contractor indicated below.

1. **General Description:** Pace is seeking firm fixed pricing for the purchase, manufacture, and delivery of up to ~~thirty-three (33)~~ fifteen (15) new forty-foot (40') diesel over-the-road (OTR) coaches in accordance with the terms and conditions set forth in this Invitation for Bid (IFB) No. 419598. This is an Indefinite Delivery Indefinite Quantity (IDIQ) Contract. The minimum quantity to be purchased under this contract will be ~~five (5) eighteen (18)~~ five (5) OTR coaches. The total number of OTR coaches to be purchased will not exceed the maximum amount of ~~thirty-three (33)~~ fifteen (15) vehicles.
2. **Contract Term:** The contract period will be ~~three (3) five (5)~~ three (3) years. Contract shall begin immediately upon execution.
3. **Basis of Award:** This contract will be awarded to the lowest responsive and responsible bidder on the basis of the Grand Total. This Contract shall be effective as of the date when it is signed by Pace. The prices submitted with the Bid will be firm, fixed unit prices for the duration of the contract. Bids shall be irrevocable for a period of one-hundred and twenty (120) days.
4. **Approved Products:** The bidding Contractor must be authorized by the OEM. All equipment must be new unless otherwise specified. Products proposed shall be any of the approved Original Equipment Manufacturer (OEM) part numbers shown or approved equals that comply with the original equipment manufacturer's requirements or specifications and will not compromise any OEM warranties. In cases where an item is identified in these Contract documents by a manufacturer's name, trade name, catalog number or reference, it is understood that the Contractor shall furnish the item so identified or shall furnish an "equal" unless specified elsewhere in the bid documents. The specific article, equipment or material mentioned shall be understood as establishing the type, function, and minimum standard of design, efficiency, quality, and performance desired and shall not be construed in such a manner as to exclude manufacturer's products of comparable design, efficiency, quality, and performance. Bid quotations on other makes or catalog numbers will be considered for current or future purchases provided the Contractor clearly states that an "equal" is proposed and he furnishes sufficient information with his bid to determine compliance.
5. **Request for Pre-Approved Equal:** Pace will consider products equal in function and performance to those listed within the Bidders Bid Price Section of this Exhibit A and as detailed within *Exhibit D, Technical Specification*. Bidders proposing alternative products shall submit sufficient supporting documentation, drawings, and literature for Pace to review the alternative products and determine equivalence as detailed within *Exhibit D, Technical Specification*. Specification by **2:00 PM CST on**

~~April 8~~ ~~March 5~~, 2020. Acceptance of alternative products as equal is at the sole discretion of Pace.

6. **Delivery:** Delivery shall be complete within two-hundred and forty (240) calendar days upon receipt of a Notice to Proceed for each order. Delivery charges and all other charges must be included in the Bid Price. No additional charges will be allowed for delivery. The specified items shall be delivered to Pace South Holland Acceptance Facility, 405 Taft Dr., South Holland, IL 60473-2015.
7. **Pre-Bid Site Visit:** There will be a Pre-Bid Meeting at **1:00pm CST on February 26, 2020** at Pace Headquarters, 550 W. Algonquin Rd., Arlington Heights, IL 60005. Contact Evan Roglich at [Evan.Roglich@pacebus.com](mailto:Evan.Roglich@pacebus.com) or (847)-228-4265 if your company will be represented. For teleconference information see the second Cover Letter.
8. **Pace DBE Requirements:** Pace encourages the Contractor to offer contracting opportunities to the fullest extent possible through outreach and recruitment activities to Disadvantaged Businesses and Small Businesses.
9. **Insurance Requirements:** The successful bidder will be required to provide evidence of all required insurance coverage, limits, endorsements, etc. for the duration of the contract plus one additional year. Evidence of required insurance coverage shall be provided on an Acord 25-S (or equivalent) Certificate of Insurance form. The Certificate of Insurance and required policy endorsements (CG 20 10 or CG 20 37 or CG 20 26, CA 2048, etc.) must be submitted to and approved by Pace *prior to* contract award and *prior to* the required insurance policy expiration date. For a complete list of all insurance coverage requirements, please see *Exhibit C* of this IFB.
10. **Indemnification:** Except as provided below, the Contractor shall indemnify, keep and save harmless Pace, its agents, officials and employees against all injuries, losses, claims, suits, costs and expenses which may accrue against Pace arising out of the services or products provided under this Contract, including any copyright or patent infringement or claim of such infringement arising from the intended use of goods or services furnished hereunder. The Contractor agrees to indemnify and hold harmless Pace, its employees and Officers, from any and all claims by persons or entities that may arise out of and in the course of its performance of this contract, and from any and all claims by its subcontractors, employees or independent contractors which may arise out of and in the course of performance of this Contract. Any and all claims for unemployment benefits and worker's compensation benefits are expressly waived by the Contractor, its subcontractors, employees, and independent contractors, who agree to maintain separate policies of insurance as hereinafter are provided in this agreement. The Contractor shall retain independent counsel and at its expense shall assume and defend all claims, demands and suits covered in this indemnification section. The foregoing shall not apply to the extent that the injuries, losses, claims, suits, costs, and expenses arise out of the acts or omissions of Pace, its agents, officials or employees.
11. **Payment/Invoicing:** All invoices are to reference the contract number, description of goods,

location of goods where provided, part numbers, quantity shipped, unit prices, and extensions. The Contractor shall provide a detailed listing, in each invoice or series of invoices, of all equipment furnished to Pace as part of this Contract. All equipment should be itemized with corresponding model and serial numbers where applicable. The itemized listing should be provided on an invoice with the shipment date and delivery location indicated. If the Contractor's invoices are billed as progressive or acceptance payments, any equipment shipped to Pace during that billing period must be itemized on an invoice with the associated cost for each item. If equipment is provided and shipped to Pace by a subcontractor, the Contractor is responsible for obtaining and submitting the itemized listing of equipment that is shipped to Pace. The Contractor will invoice Pace at 550 W. Algonquin Road, Arlington Heights, IL 60005. Pace requires and prefers invoices to be emailed to [accounts.payable@pacebus.com](mailto:accounts.payable@pacebus.com). Payment will be made within 30 days of receipt of an approved invoice.

The performance milestones and payment limits shall be as follows:

I. Pace shall make payments for buses at ninety percent (95%) of the unit price(s) for each bus itemized in the price schedule upon the delivery of each bus to which all post-delivery repairs, field corrections, retrofits and post-delivery requirements have been completed, as approved by Pace and within thirty (30) calendar days of receipt of a proper invoice.

II. Pace shall make a final payment of five percent (5%) of the total Contract price plus any monies retained, within thirty (30) calendar days of receipt of a proper invoice and the following:

- a. Delivery and acceptance of all Contract deliverables, including manuals and other documentation required by the Contract, excluding training.
- b. Rectification of any deficiencies found during the acceptance of vehicles.
- c. Contractor provision of any certifications as required by law and/or regulations.
- d. Contractor promptly provides the Buy America information to the independent Contractor hired by Pace to allow for the completion of post-delivery audits required under an independent Contract.

III. Progress payments requests shall be accompanied by a certification, or affidavit, signed by the Contractor's officer certifying that the work and equipment covered by the progress payment requested has been completed. Pace reserves the rights of inspection and audit to verify said progress.

12. **Retention of Records**: The Contractor shall maintain records to verify the actual time devoted and costs incurred. These records shall be maintained for a minimum period of five years after completion of the contract at which time the Contractor may request permission from Pace to dispose of the records. Upon fifteen (15) days notice from Pace, all time sheets, billings, and other documentation used in preparing said records shall be made available for inspection, copying, or auditing by Pace at any time during normal business hours at Pace's headquarters location.
13. **Ownership of Records**: Pace shall retain ownership of all plans, specifications, and related

documents, and all other documents, including but not limited to those mentioned above, prepared by the Contractor under the Contract.

14. **Audit and Inspection of Records:** The Contractor shall permit the authorized representative of Pace, the Regional Transportation Authority, the State of Illinois, the U.S. Department of Transportation and the Comptroller General of the United States to inspect and audit all data and records of the Contractor relating to his performance under the Contract. Contractor acknowledges and agrees that representatives of the Office of Executive Inspector General and Office of Inspector General of Pace, have the authority and ability to: examine any record, information, data, reports, plans, projections, matters, contracts, correspondence, or other materials, and interview any employee, officer, or agent of Contractor with respect to performance of the terms, and provision of goods and/or services of this contract. Contractor agrees to cooperate fully and expeditiously with any investigation or audit conducted by an Inspector General.
15. ~~**Termination for Insufficient Funds:** It is expressly agreed that Pace's obligation to pay for the services provided under this Contract shall be limited to the availability of funds from (1) Pace's revenues and budget for the fiscal years covered by this Contract and from (2) funds that may be received from the Federal Transit Administration, the Illinois Department of Transportation, the Regional Transportation Authority, and/or other funding agencies to be specifically applied for the services provided under this Contract. In the event that Pace determines that funds are not available from these sources to pay any remaining unpaid part or parts of the Contract, Pace's obligations to pay such unpaid part or parts of the Contract shall be terminated immediately and Pace shall have no further obligations under the Contract in respect to payment, with the exception of payment for authorized services already performed and costs already accrued.~~
16. **Interpretation:** The word "shall" when used in this Agreement is mandatory and not permissive.
17. **Exhibits:** The following Exhibits are attached hereto and become a part of any award that may result. If there is any conflict in the provisions contained in these Exhibits, then the more stringent shall take precedence.

Exhibit A – Special Contract Conditions/Bid Price

Exhibit B – General Contract Conditions

Exhibit C – Insurance Requirements

Exhibit D – Technical Specification

Attachment No. 1 – Example Bus Wrap Images

Exhibit E – Quality Assurance Provisions

Attachment No. 1 – Contractor Profile & References

Attachment No. 2 – Transit Vehicle Manufacturer DBE

Attachment No. 3 – Bidder's Service and Parts Support Data

Attachment No. 4 – Certification of Compliance with Vehicle Testing Requirement

Exhibit F – Warranty Provisions

Exhibit G – Request for Change or Approved Equal



18. **Bid Submittal Check List**: The following documents should be submitted with your bid or it may be considered non-responsive.

Bidders are further cautioned not to qualify their bids by modifying the contract documents, either by alteration or supplemental statements or documents (including but not limited to quotation forms, agreement documents, or exceptions). All bids are to be in accordance with this Invitation for Bid and become the property of Pace. Bids that are not so made may be rejected as non-responsive.

- Complete the Bidders Bid Sheet (*Exhibit A, page 8*)
- Sign the Non-Collusion Affirmation (*Exhibit A, page 9*)
- Complete and sign the Contract Signature Page (*Exhibit A, page 10*)
- Acknowledge any addenda on page 10 of *Exhibit A*; submit all documents as instructed by any addenda
- Submit Contract compliance documents including: Altoona Test Report
- Sign, date and complete the Buy America Certification (*Exhibit B, page 39*)
- Complete and sign the Certification of Restrictions on Lobbying (*Exhibit B, page 40*)
- Sign the Contractor's Certification Regarding Suspension and Debarment (*Exhibit B, page 40*)
- Complete Contractor Profile Information & References (*Exhibit E, Attachment No. 1*)
- Transit Vehicle Manufacturer (TVM) Certification (*Exhibit E, Attachment No. 2*)
- Bidder's Service and Parts Support Data (*Exhibit E, Attachment No. 3*)
- Certification of Compliance with Vehicle Testing Requirement(s) (*Exhibit E, Attachment No. 4*)
- Submit one (1) set of **all** bid documents in a sealed envelope stating IFB No. 419598 for Forty Foot Diesel Powered Mobility Device Accessible OTR Coaches.

Following the issuance of this Invitation for Bid (IFB), and until the Notice of Award, Bidders and Bidder's sub-contractors shall communicate only with Pace's Chief Procurement Officer or authorized Buyer from the Procurement Department as prescribed in this solicitation. The authorized representative regarding this IFB is Evan Roglich, 847-228-4265, [evan.roglich@pacebus.com](mailto:evan.roglich@pacebus.com). During this active procurement, any other communications regarding this IFB with members of Pace's Board of Directors, or Pace staff including but not limited to the fleet manager may result in disqualification of the bidder.

Any questions regarding this Invitation for Bid must be submitted no later than ~~March 5~~ **April 8, 2020 at 2:00pm CST**. Bidders must submit requests for pre-approved equals during the question and answer period. All requests for pre-approved equals shall be submitted with sufficient supporting documentation for Pace to review and to determine compliance. All questions regarding this IFB shall be submitted in writing to [evan.roglich@pacebus.com](mailto:evan.roglich@pacebus.com). Questions submitted after this date and time will not be accepted.

The bid opening date is **April 30 7, 2020 at 2:00 P.M. CST**. Any bids received after the date and time will be rejected.

**INVITATION FOR BID NO. 419598**  
**FORTY FOOT DIESEL POWERED MOBILITY DEVICE ACCESSIBLE**  
**OVER THE ROAD COACHES**  
**BIDDERS BID**  
**(SUBMIT ONE (1) BID)**

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This is an Indefinite Delivery/Indefinite Quantity (IDIQ) contract. The minimum quantity to be purchased under this contract will be **5 18**. The total number of coach buses procured will not exceed the maximum amount of **15 33**. The unit pricing quoted must be firm and include delivery, training, and all applicable costs.

**AVAILABLE FUNDS**

Funds have been applied for but are not presently available for performance under this contract covering the minimum bus quantities specified in the contract. Pace's obligation for performance of this contract beyond the minimum quantity is contingent upon the availability of funds from which payment for contract purposes can be made. No legal liability on the part of Pace for any payment may arise for performance under this contract beyond the minimum quantities, unless funds are made available to the Chief Procurement Officer for performance and until the Contractor receives notice of availability, to be confirmed in writing by the Chief Procurement Officer. Funding is normally expected to be available July – September of each calendar year.

Future grants are expected to be approved for the remaining amount of this contract beyond the minimum quantities. It is expressly agreed that Pace's obligation to pay for the vehicles provided under this Contract shall be limited to the availability of funds from (1) Pace's revenues and budget for the fiscal years covered by this Contract and from (2) funds that may be received from the Federal Transit Administration (FTA), the Illinois Department of Transportation (IDOT), the Regional Transportation Authority (RTA), and/or other funding agencies to be specifically applied for the vehicles provided under this Contract. In the event that Pace determines that funds are not available from these sources to pay for any quantities specified in the Contract, Pace's obligations to pay for such quantities not ordered under this Contract shall be terminated immediately and Pace shall have no further obligations under the Contract in respect to payment.

The bus quantities listed for each year are estimates only. The actual quantity purchased in each year may change dependent upon funding availability, at the unit prices specified in the current year quantities. These vehicles shall be ordered through a formal written purchase order.

**PRICING**

1. Pricing shall include designing, manufacturing, constructing, fabricating, assembling, and delivering of up to **15 33** over-the-road coach buses (diesel only). The actual quantity of buses that may be purchased in any one year may vary from the estimated quantities listed for each type. However, the total number of buses procured will not exceed the **15 33** unit maximum.
2. Pricing for year one will be fixed.

3. In the event that more than one model year is required to complete this contract the following price adjustments will be permitted in years two through **three five** of the contract:

a. ~~A price adjustment allowance will be permitted for the Chassis for but limited to the actual audit difference in the cost between the model year chassis and any subsequent model year chassis required when the contract release is issued to fulfill this contract.~~

b. A price adjustment allowance will be permitted **for the entire bus and associated equipment cost minus the chassis price** based on the Producer Price Index (PPI), Category 1413 WUP, Truck and Bus Bodies (PPI 1413) for June 2019 (or most recent monthly data available at the time of the proposal due date). Cost for the **entire bus and associated equipment (minus the chassis price)** for contract years 2, 3, **4, and 5** will be based on the following formulas:

- $[(A-B)/B] \times 100 = C$
- $C \times D = E$
- $D + E = F$

Where:

A = the PPI for the month a Change Order is awarded

B = the PPI Index when the contract was initially awarded

C = the percent change from the first-year fixed unit pricing

D = the first-year fixed unit pricing

E = the dollar change amount to be added/subtracted

F = the new contract pricing with PPI adjustment

4. All claim or right to claim any additional compensation by reason of the payment of any charges for packing, crating, delivery, F.O.B. point of destination, any state or local sales, use, and excise taxes, any other applicable federal, state, and local taxes or any costs, royalties, or fees arising from the use on, or the incorporation into, the work of patented equipment, materials, supplies, accessories, parts, tools, appliances, devices, processes, or inventions is hereby waived and released.



**Forty Foot (40') Over-the-Road Coach – Diesel Engine**

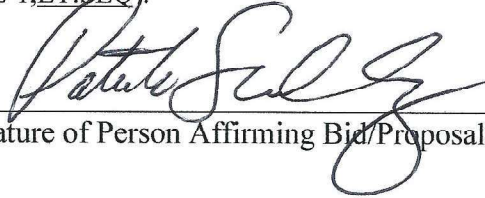
Manufacturer:	Motor Coach Industries, Inc.
Model:	D4000
Bus Testing Service Life Category:	12 year, 500,000 miles
Type of Diesel Engine:	Cumins X12

Item No.	Description	Unit Price	Estimated Quantity	Total Cost (Unit Price x Est. Quantity)
1.	Over-the-Road Coach 40' Diesel Bus	\$ 618,247.00	15	\$ 9,273,705.00
2.	Apollo Surveillance System (TS 3.8.5.2)	\$ 19,703.00	15	\$ 295,545.00
3.	Video Surveillance System (TS 3.8.5.1)	\$ 311.00	15	\$ 4,665.00
4.	IBS Brackets and Installation (TS 3.8.3)	\$ 16,962.00	15	\$ 254,430.00
5.	Full Body Wrap (TS 2.4.1)	\$ 5,920.00	15	\$ 88,800.00
<b>Grand Total for Over-the-Road Coach 40' Diesel Buses 3-Year Contract</b> (sum of Totals for items 1-5)				\$ 9,917,145.00

**NON-COLLUSION AFFIRMATION**

**IMPORTANT: This affirmation must be signed and submitted with the bid/proposal.**

The bidder or proposer submitting this bid or proposal hereby affirms that such bid/proposal was not made in the interest of or on behalf of any undisclosed person, partnership, company, organization or corporation; that such bid/proposal is genuine and not collusive or sham, and that said bidder/proposer has not been a party to any agreement or collusion among bidders/proposers or prospective bidders/proposers in restraint of freedom of competition by agreement to bid a fixed price, or otherwise, or to refrain from bidding/proposing and has not, directly or indirectly, by agreement, communication or conference with anyone attempted to induce action prejudicial to the interest of the Suburban Bus Division of the Regional Transportation Authority (Pace) or any bidder/proposer or anyone else interested in the proposed Contract. The bidder/proposer further certifies that it is not barred from contracting with any State or unit of local government as a result of a violation of either Section 33E-3 or Section 33E-4 of Article 33E of the Illinois Criminal Code (III. Rev. Stat. Chap.38,33E-1,ET SEQ).



\_\_\_\_\_  
(Signature of Person Affirming Bid/Proposal)

**INVITATION FOR BID NO. 419598  
FORTY FOOT DIESEL POWERED MOBILITY DEVICE ACCESSIBLE  
OVER THE ROAD COACHES  
CONTRACT SIGNATURE PAGE**

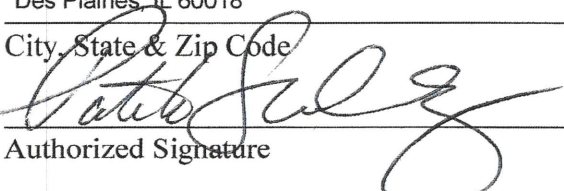
**Addendum Acknowledgment:** The bidder hereby acknowledges receipt of the following Addenda that are incorporated herein by reference. (If there were No Addenda, write "NONE") \_\_\_\_\_. **Failure to acknowledge Addenda may be cause for the bid to be considered non-responsive.**

Addendum No. 1      Addendum No. 4  
Addendum No. 2  
Addendum No. 3


**Electronic Signatures:** This Contract may be executed through the use of electronic signatures. Electronic signatures transmitted or scanned, shall be deemed original signatures for purposes of this Contract.

**IN WITNESS WHEREOF, the parties hereto have executed this Contract on the dates recited below:**

**CONTRACTOR**

Motor Coach Industries, Inc.  
\_\_\_\_\_  
Company Name  
200 East Oakton Street  
\_\_\_\_\_  
Street Address  
Des Plaines, IL 60018  
\_\_\_\_\_  
City, State & Zip Code  
  
\_\_\_\_\_  
Authorized Signature  
April 29, 2020  
\_\_\_\_\_  
Date  
Patrick Scully  
\_\_\_\_\_  
Printed/Typed Name  
Executive Vice-President, Sales, Marketing &  
Service  
\_\_\_\_\_  
Title  
847-285-2354  
\_\_\_\_\_  
Telephone Number and Fax Number  
patrick.scully@mcicoach.com  
\_\_\_\_\_  
E-mail Address

**PACE, SUBURBAN BUS DIVISION OF THE  
REGIONAL TRANSPORTATION AUTHORITY**

  
\_\_\_\_\_  
Signature  
Rocco L. DONATUCCI  
\_\_\_\_\_  
Printed/Typed Name  
EXECUTIVE DIRECTOR  
\_\_\_\_\_  
Title  
7/21/20  
\_\_\_\_\_  
Date



Rocky Donahue  
Executive Director

DATE: February 20, 2020

Invitation for Bid No. 419598

Forty-Foot (40') Diesel Powered Mobility Device Accessible Over **the Road** (OTR) Coach Buses  
Addendum No. 1

Dear Prospective Bidder:

Pace has checked the applicable box(s) pertaining to this solicitation's addendum below:

Addendum No. shall replace **Exhibit** , with the enclosed **Exhibit** , , which has been changed. The new **Exhibit** , is marked **ADDENDUM NO.** and is dated .

Addendum No. is being issued to amend certain words, phrases, sentences or paragraphs for this solicitation for .

Addendum No. is being issued to provide responses to questions submitted by . The following outlines all written questions submitted by potential and Pace's response to these questions.

The question and answer period is extended until Tuesday, March 10, 2020 at 2:00 P.M. Questions received after this date will not be accepted.

**This Addendum No. 1 shall be inserted into and submitted along with your solicitation package. All addenda must be acknowledged on page 10 of Exhibit A. Failure to acknowledge addenda may be cause for the bid to be considered non-responsive.**

The pre-bid meeting has been changed from Wednesday, February 26, 2020 to **Monday, March 2, 2020** at the following locations and times: Pace Headquarters, 550 W. Algonquin Road, Arlington Heights, IL at 9:00am CST.

The bid opening date remains Tuesday, April 7, 2020 at 2:00 P.M.

The date is extended from to at 2:00 P.M. received after this date and time will not be accepted.

Should you require any additional information, you may contact Procurement at (847)228-2479.

Sincerely,

Pace, the Suburban Bus Division of the Regional Transportation Authority



Rocky Donahue  
Executive Director

DATE: April 1, 2020

Invitation for Bid No. 419598

Forty-Foot (40') Diesel Powered Mobility Device Accessible Over the Road (OTR) Coach Buses  
Addendum No. 2

Dear Prospective Bidder:

Pace has checked the applicable box(s) pertaining to this solicitation's addendum below:

- Addendum No. 2 shall replace **Exhibit A, Special Contract Conditions/Bid Price** with the enclosed **Exhibit A, Special Contract Conditions/Bid Price**, which has been changed. The new **Exhibit A, Special Contract Conditions/Bid Price** is marked **ADDENDUM NO. 2** and is dated April 1, 2020.
- Addendum No. 2 shall replace **Exhibit B, Instructions to Contractors & General Contract Conditions, page 3**, with the enclosed **Exhibit B, Instructions to Contractors & General Contract Conditions, page 3**, which has been changed. The new **Exhibit B, Instructions to Contractors & General Contract Conditions, page 3**, is marked **ADDENDUM NO. 2** and is dated April 1, 2020.
- Addendum No. 2 shall replace **Exhibit D, Technical Specification TS OTR 2020** with the enclosed **Exhibit D, Technical Specifications TS OTR 2020**, which has been changed. The new **Exhibit D, Technical Specifications TS OTR 2020** is marked **ADDENDUM NO. 2** and is dated April 1, 2020.
- Addendum No. 2 shall replace **Exhibit G, Request for Changes to Specifications / Or Equals** with the enclosed **Exhibit G, Request for Changes to Specifications / Or Equals**, which has been changed. The new **Exhibit G, Request for Changes to Specifications / Or Equals** is marked **ADDENDUM NO. 2** and is dated April 1, 2020.
- Addendum No. is being issued to amend certain words, phrases, sentences or paragraphs for this solicitation for.
- Addendum No. 2 is being issued to provide responses to questions submitted by bidders. The following outlines all written questions submitted by potential bidders and Pace's response to these questions.  
**See Attachment No. 1 for Pace responses to bidders' request for changes.**
- The question and answer period is extended until **Wednesday, April 8, 2020** at 2:00 P.M. Questions received after this date will not be accepted.

**This Addendum No. 2 shall be inserted into and submitted along with your solicitation package. All addenda must be acknowledged on page 10 of Exhibit A, Special Contract Conditions/Bid Price. Failure to acknowledge addenda may be cause for the bid to be considered non-responsive.**

The meeting has been changed from to at the following locations and times: .

The date remains at 2:00 P.M.

The bid opening date is extended from Tuesday, April 7, 2020 to **Thursday, April 30, 2020** at 2:00 P.M. Bids received after this date and time will not be accepted.

Should you require any additional information, you may contact Procurement at (847)228-2479.

Sincerely,

Pace, the Suburban Bus Division of the Regional Transportation Authority

Attachments:

1. Responses to Requests for Changes to Specifications/Or Equals  
Addendum 2, April 1, 2020
2. Exhibit A, Special Contract Conditions/Bid Price  
Addendum 2, April 1, 2020
3. Exhibit B, Instructions to Contractors and General Contract Conditions, page 3  
Addendum 2, April 1, 2020
4. Exhibit D, Technical Specifications TS OTR 2020  
Addendum 2, April 1, 2020
5. Exhibit G, Request for Changes to Specifications/Or Equals  
Addendum 2, April 1, 2020





Rocky Donahue  
Executive Director

DATE: April 21, 2020

Invitation for Bid No. 419598

Forty-Foot (40') Diesel Powered Mobility Device Accessible Over the Road (OTR) Coach Buses  
Addendum No. 3

Dear Prospective Bidder:

Pace has checked the applicable box(s) pertaining to this solicitation's addendum below:

Addendum No. 3 shall replace **Exhibit A, Special Contract Conditions/Bid Price** with the enclosed **Exhibit A, Special Contract Conditions/Bid Price**, which has been changed. The new **Exhibit A, Special Contract Conditions/Bid Price** is marked **ADDENDUM NO. 3** and is dated April 21, 2020.

Addendum No. 3 shall replace **Exhibit D, Technical Specification TS OTR 2020** with the enclosed **Exhibit D, Technical Specifications TS OTR 2020**, which has been changed. The new **Exhibit D, Technical Specifications TS OTR 2020** is marked **ADDENDUM NO. 3** and is dated April 21, 2020.

Addendum No. 3 is being issued to amend the bid opening procedure for this solicitation for Forty-Foot (40') Diesel Powered Mobility Device Accessible Over the Road (OTR) Coach Buses.

Addendum No. 3 is being issued to provide responses to questions submitted by bidders. The following outlines all written questions submitted by potential bidders and Pace's response to these questions.

**See Attachment No. 1 for Pace responses to bidders' request for changes.**

The question and answer period is extended until at 2:00 P.M. Questions received after this date will not be accepted.

**This Addendum No. 3 shall be inserted into and submitted along with your solicitation package. All addenda must be acknowledged on page 10 of Exhibit A, Special Contract Conditions/Bid Price. Failure to acknowledge addenda may be cause for the bid to be considered non-responsive.**

The meeting has been changed from to at the following locations and times: .

The bid opening date remains **Thursday, April 30, 2020** at 2:00 P.M.

The bid opening date is extended from to at 2:00 P.M. Bids received after this date and time will not be accepted.



DATE: April 21, 2020

Invitation for Bid (IFB) No. 419598  
Forty-Foot (40') Diesel Powered Mobility Device Accessible Over the Road (OTR) Coach Buses  
Addendum No. 3

Dear Prospective Bidder:

In this time of unprecedented uncertainty, Pace's primary focus is the welfare of our mission, patrons and staff. The effects of the COVID-19 pandemic are being felt worldwide. We have made changes to the standard process for receipt, public bid opening and award of Invitation for Bids.

Addendum No. 3 shall update Pace's public bid opening date and provide instructions for the opening of bids electronic and remotely.

The bid opening date for this IFB shall resume on **April 30, 2020 at 2:00pm CST**. Pace will conduct this bid opening via **Teams**, web conference via the following link.

[Join Microsoft Teams Meeting](#)  
[+1 872-212-5030](#) United States, Chicago (Toll)  
Conference ID: 932 223 315#

As a **Team** owner, Pace **can** add and manage bidders/guests in **teams** via the web or desktop. **Anyone** with a business or consumer email account, such as Outlook, Gmail, or others, **can** participate as a bidder/guest in **Teams**.

In order to participate remotely, Bidders shall submit scanned bid documents electronic to [Procurement@pacebus.com](mailto:Procurement@pacebus.com). Bidders may submit electronic signatures on the bid documents and the contract page. The winning bidder will be required to provide a wet signature on the contract page and the bid documents. Per the Attachment No. 1, revised *Exhibit A, 17. Bid Submittal Checklist*; each bidder shall submit ONE (1) bid. Bidders shall submit the electronic bid and all required bid document using the following naming convention:

*MY BID IFB No. 419598 40' OTR Coach Bus.*

**This Addendum No. 3, and all addenda, must be acknowledged on page 10 of Exhibit A, Special Contract Conditions/Bid Price.**

Should you require any additional information, you may contact Evan Roglich, at (847)-228-4265, Senior Contract Buyer.

Welcome to the new norm for Pace, remote and electronic process for Invitation for Bids.

Respectfully,

Rebecca Howe  
Chief Procurement Officer

Attachments:

1. *Exhibit A, 17. Bid Submittal Checklist*  
Addendum 3, April 21, 2020
2. Responses to Requests for Changes to Specifications/Or Equals  
Addendum 3, April 21, 2020
3. Exhibit A, Special Contract Conditions/Bid Price  
Addendum 3, April 21, 2020
4. Exhibit D, Technical Specifications TS OTR 2020  
Addendum 3, April 21, 2020



Rocky Donahue  
Executive Director

DATE: April 28, 2020

Invitation for Bid (IFB) No. 419598  
Forty-Foot (40') Diesel Powered Mobility Device Accessible Over the Road (OTR) Coach Buses  
Addendum No. 4

Dear Prospective Bidder:

Addendum No. 4 shall update Pace's public bid opening date and provide instructions for the opening of bids electronic and remotely.

The bid opening date for this IFB shall resume on **May 7, 2020 at 2:00pm CST**. Pace will conduct this bid opening via **Teams**, web conference via the following link.

[Join Microsoft Teams Meeting](#)  
[+1 872-212-5030](#) United States, Chicago (Toll)  
Conference ID: 932 223 315#

As a **Team** owner, Pace **can** add and manage bidders/guests in **teams** via the web or desktop. **Anyone** with a business or consumer email account, such as Outlook, Gmail, or others, **can** participate as a bidder/guest in **Teams**.

In order to participate remotely, Bidders shall submit scanned bid documents electronically to [Procurement@pacebus.com](mailto:Procurement@pacebus.com). Bidders may submit electronic signatures on the bid documents and the contract page. Per the Attachment No. 1, revised *Exhibit A, 17. Bid Submittal Checklist*; each bidder shall submit ONE (1) bid. Bidders shall submit the electronic bid and all required bid document using the following naming convention:

*MY BID IFB No. 419598 40' OTR Coach Bus*

**This Addendum No. 4, and all addenda, must be acknowledged on page 10 of Exhibit A, Special Contract Conditions/Bid Price.**

Should you require any additional information, you may contact Evan Roglich, at (847)-228-4265, Senior Contract Buyer.

Respectfully,

Rebecca Howe  
Chief Procurement Officer

PACE SUBURBAN BUS SERVICE  
INSTRUCTIONS TO CONTRACTORS & GENERAL CONTRACT CONDITIONS  
MATERIALS AND SUPPLIES WITH SERVICES CONTRACTS

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PACE, SUBURBAN BUS SERVICE  
INSTRUCTIONS TO CONTRACTORS & GENERAL CONTRACT CONDITIONS  
MATERIALS AND SUPPLIES WITH SERVICES CONTRACTS

The following instructions, terms and conditions shall apply to Pace solicitations and Contracts for materials and supplies. All Pace Contracts shall be governed by Illinois Law. All Bidders or Proposers shall be referred to as "Contractors" and all bids or offers as "Bids" or "Bid Quotations" in this section of the Contract Specifications.

SECTION A – INSTRUCTIONS TO CONTRACTORS

1. Documents: The Contractor declares he has fully examined this Invitation for Bid or Request for Proposal including all attachments, exhibits and addenda as applicable and that he is familiar with all of the conditions effecting the Contract, and understands that in making this quotation the Contractor waives all right to plead any misunderstanding regarding same. The Contractor's quotation shall comply with all federal, state and local laws, rules and regulations applicable.

Award shall be made by mailing a properly executed Contract to the successful bidder.

2. Authorities and Limitations

- 2.1 This Contract is made and shall be interpreted under the laws of the State of Illinois and the Contractor agrees and consents that only the courts of Illinois and Federal appellate courts shall have jurisdiction over controversies arising out of this Contract.
- 2.2 The articles, sections, paragraphs or other headings shown are for convenience and reference only and in no way define, limit or describe the scope or intent of this Contract or its Exhibits.
- 2.3 This Contract together with any other document expressly incorporated herein contain the entire agreement between the parties hereto and there are no prior or contemporaneous oral or written understandings or agreements binding on Pace affecting the subject matter of this Contract other than those expressly referred to therein. No agreement, other understanding or acknowledgment, invoice, or other form used by the Contractor to modify or alter the provisions of this order resulting from acceptance by the Contractor of this Contract will be binding upon Pace unless made in writing and signed by Pace's authorized representative.
- 2.4 All services/work shall be performed under the direction of the Pace Chief Procurement Officer who alone shall have the authority to bind Pace and to exercise the rights, responsibilities, authorities and functions vested within the Contract documents, except that the Chief Procurement Officer shall have the right to designate authorized representatives to act on their behalf. Wherever any provision in this Contract specifies an individual (such as, but not limited to, Engineer, Resident Engineer, Inspector, Site Manager or Architect) or organization, whether Pace or private, to perform any act on behalf of or in the interests of Pace, that individual or organization shall be deemed to be Pace Chief Procurement Officer authorized representative under this Contract but only to the extent so specified.

Pace's Chief Procurement Officer may, at any time during the performance of this Contract, vest in any such authorized representatives, additional power and authority to act on their behalf or designate additional representatives, specifying the extent of their authority to act or designate additional representatives to the extent deemed necessary.

- 2.5 The Contractor shall perform the Contract in accordance with any order (including but not limited to instruction, direction, interpretation or determination) issued by an authorized representative in accordance with the authority to act for the Pace Chief Procurement Officer, but the Contractor assumes all the risk and consequences of performing the Contract in accordance with any order (including but not limited to instruction, direction, interpretation, or determination) of anyone not authorized to issue such order.
3. Conditions of Acceptance: This Invitation for Bid or Request for Proposal expressly limits acceptance to the terms and conditions stated herein and any supplementary or additional terms and conditions annexed hereto or incorporated herein by reference. Any additional or different terms and conditions proposed by the Contractor are objected to and hereby rejected unless accepted by Pace prior to the time and date of bid opening. The Contractor further understands and agrees that if this bid is accepted, the Contractor is to furnish any and all of the items or services upon which prices are quoted, at the price and delivery time stated, subject to all terms, conditions, and requirements set forth in the bid and in the resulting Contract. Pace reserves the right to extend the bid quotation opening date and to reject any or all bid quotations or any part thereof. Pace further reserves the right to excuse informalities in the bid quotations and bidding when, in the judgment of Pace, the best interests of Pace will be served and the spirit of competition will be maintained.

4. Withdrawal of Bids: Once submitted, bids may only be withdrawn with Pace's consent prior to bid opening and may be superseded by a subsequent timely bid. Any bid received after the time and date specified for opening, or any postponement thereof, will not be considered. Bids shall be irrevocable for a period of ninety (90) days after the opening thereof by Pace.
5. Errors in Bids: The Contractor is cautioned to verify any Bids made before submission. No bid may be withdrawn or changed after it has been opened unless Pace has determined:
  - a. That an obvious mistake of a mechanical or clerical nature was actually made; not just an error in judgment, such as underestimating material or service costs.
  - b. That the "mistaken" Contractor was not guilty of culpable negligence in making the error, or in delay in communicating the fact to Pace on discovery.
6. Irregular Bids: The Contractor understands that the bid must show the unit prices for all material or services which are proposed to be furnished, and that extensions must be shown and that if not so shown, their bid may be rejected as irregular.
7. Additional Charges: The price quoted for each item is the full purchase price, including packaging and delivery charges, and includes all premiums on bonds, material or service costs, patent royalties and all other overhead charges of every kind and nature. The Contractor warrants that prices include all charges for packing, crating and transportation to F.O.B. points.
8. Contractors Record and Qualifications: The Contractor, within forty-eight hours after being requested in writing by Pace, shall furnish evidence satisfactory to Pace of the Contractor's ability and responsibility, financial and otherwise, to furnish the material or service specified in the manner and at the time prescribed and in accordance with the specifications of Pace.
9. Modifications to Contract
  - a. For Request for Proposals (RFPs), requests for any change in the Contract proposal documents must be submitted as Contract exceptions along with the technical and price proposals on the RFP due date.
  - b. Request for any change in the Contract after award shall be submitted in writing to Chief Procurement Officer for prior approval. Oral change orders are not permitted. No change in the Contract shall be made except in writing signed by the Chief Procurement Officer or a designated representative. The Contractor shall be liable for all costs resulting from, and/or for satisfactorily correcting, any specification change not properly ordered by written modification to the Contract and signed by Pace.
10. Cash Discounts: The Contractor offering the lowest bid shall be determined by comparing the gross individual unit prices, or the gross bid total, as applicable. Cash (early payment) discounts are not taken into consideration when selecting the lowest bid.
11. Performance: It is understood and agreed that time of performance is of the essence of this Contract. If the Contractor is delayed in the performance of the services purchased under the Contract by a cause beyond his control, he must immediately upon receiving knowledge of such delay, give written notice to Pace and request an extension of time for completion of the Contract. Pace shall examine the request and determine if the Contractor is entitled to an extension. Pace shall notify the Contractor of the decision in writing.

#### SECTION B – GENERAL TERMS AND CONDITIONS

1. Delivery: It is understood and agreed that time of delivery is of the essence of this Contract. If the Contractor is delayed in the delivery of goods or services purchased under the Contract by a cause beyond his control, he must immediately upon receiving knowledge of such delay, give written notice to Pace and request an extension of time for completion of the Contract. Pace shall examine the request and determine if the Contractor is entitled to an extension. Pace shall notify the Contractor of the decision in writing.
2. Entire Agreement: This Contract contains the entire agreement of the parties. It may not be modified or terminated orally, and no claimed modification, termination, or waiver shall be binding on Pace unless in writing signed by the Chief Procurement Officer or the duly authorized representative. No modification or waiver shall be deemed effected by the Contractor's acknowledgment or confirmation containing other or different terms. All titles to clauses contained in this Contract are for identification only and shall not be construed as being a substantive part of the agreement. The Section headings contained in this Contract are for convenience and reference only and in no way define, limit, or describe the scope or intent of this Contract.

3. **Indemnification:** The Contractor shall indemnify, keep and save harmless Pace, its agents, officials and employees against all injuries, losses, claims, suits, costs and expenses which may accrue against Pace arising out of the services or products provided under this Contract, including any copyright or patent infringement or claim of such infringement arising from the intended use of goods or services furnished hereunder. The Contractor agrees to indemnify and hold harmless Pace, its employees and Officers, from any and all claims by persons or entities that may arise out of and in the course of its performance of this Contract, and from any and all claims by its subcontractors, employees or independent contractors which may arise out of and in the course of performance of this Contract. Any and all claims for unemployment benefits and worker's compensation benefits are expressly waived by the Contractor, its subcontractors, employees, and independent contractors, who agree to maintain separate policies of insurance as hereinafter are provided in this agreement. The Contractor shall retain independent counsel and at its expense shall assume and defend all claims, demands and suits covered in this indemnification section.
4. **Assignments:** The Contractor agrees that neither this Contract nor any part of it or any of the monies due from this Contract may be assigned without the prior written consent of Pace. Any successor or assign under this Contract will be required to accede to all of the terms, conditions and requirements of this Contract as a condition precedent to such succession or assignment. Assignment of any portion of the work by subcontract must be approved in advance by Pace, in writing. Pace reserves the right to assign all or part of the specified deliverables in this Contract as originally advertised, competed, evaluated, and awarded including base and option quantities.
5. **Waiver:** Pace's failure to promptly enforce any of the conditions of this Contract shall not constitute a waiver of any of Pace's other rights.
6. **Termination:** Pace may terminate this Contract at any time hereafter, with or without cause, by giving written notice to the Contractor at the address specified above. Termination shall be effective upon receipt of such notice by the Contractor. If Pace terminates this Contract other than for breach thereof by the Contractor, Pace agrees to pay the Contractor, and the Contractor agrees to accept as its sole remedy, cancellation charges equal to the remaining unpaid costs accrued and obligated to date of cancellation. In the event of breach or violation by the Contractor of any provision of the Contract, Pace may allow the Contractor a reasonable opportunity to cure the breach prior to termination under this provision. Upon termination of this Contract for breach by the Contractor, the Contractor assumes liability for all excess costs incurred by Pace to complete the Scope of Services specified in the Contract.
7. **Price Warranty:** The Contractor warrants that the unit price(s) charged herein do not exceed the unit prices charged by the Contractor to any other customers in substantially similar transactions. The Contractor agrees to make any price rebate which this warranty may require.
8. **Payment:** Payments will be made in accordance with the terms in the Contract, or the Contractor's invoice, whichever are more favorable to Pace. The payment date shall be calculated from the receipt of invoice or final acceptance of the goods or services, whichever is later in accordance with the Local Government Prompt Payment Act. Under the Act, Pace will pay the Contractor within thirty (30) days of its approval of the Contractor's invoice. The Contractor agrees that it shall pay all subcontractors who have completed satisfactory work under the subcontract no later than thirty (30) days from receipt of payment by Pace. The Contractor further agrees to return any retainage payments withheld from subcontractor within thirty (30) days after the subcontractor's work is satisfactorily completed. This requirement is also applicable to all sub-tier subcontractors and suppliers, and shall be made a part of all subcontracts and agreements. Pace is exempt from local, state, and federal taxes.
9. **Processing Data Between Years and Centuries:** Hardware, software and firmware delivered under this Contract shall be able to accurately process data between years and centuries.
10. **Regulatory Compliance:** All goods and services furnished hereunder by the Contractor shall comply with all Federal, State and local laws, rules and regulations as applicable, including, but not limited to:
  - a. Surface Transportation Assistance Act of 1982, Section 165a of Public Law 100-17 (Buy America).
  - b. The Occupational Safety and Health Act of 1970, and the Illinois Toxic Substance Act, with respect to the design, construction or use for their intended purpose of said goods or services and the labeling of all goods and containers for the protection and safety of persons and property.
11. **Equal Employment Opportunity:** In connection with the execution of this Contract, the Contractor shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age, national origin, ancestry, marital status, physical or mental handicap or unfavorable discharge from military service. The Contractor shall take affirmative actions to ensure that applicants are employed, and that employees are treated during their employment, without regard to their race, religion, color, sex, age, national



origin, ancestry, marital status, physical or mental handicap or unfavorable discharge from military service. Such action shall include but not be limited to, the following: employment, upgrading, demotion, transfer, recruitment, advertising, layoff, termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. If the Contractor is required to file an Affirmative Action Plan with any federal, state or local agency, the Contractor assures Pace that it is in full compliance with such filing requirements.

The Contractor agrees to comply with all provisions of the "Illinois Human Rights Act", 775 ILCS Title 5, as now or hereafter amended and with all rules, regulations, and guidelines on discrimination in employment as now or hereafter promulgated thereunder. All such provisions, rules, resolutions and guidelines, including but not limited to; Article VI "Equal Opportunity Clause" of the Rules and Regulations of the Department of Human Rights are hereby incorporated into the Contract by reference.

12. Disadvantaged Business Enterprise Compliance Requirements: Pursuant to Federal regulations for Disadvantaged Business Enterprise (DBE) programs, Contractor agrees to the following DBE assurances, and agrees to include this clause in all subcontracts:

*The Contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as Pace deems appropriate.*

**PACE HAS SET A GOAL OF 0 % DBE PARTICIPATION FOR THIS CONTRACT**

**DBE RESPONSIVENESS REQUIREMENTS**

**In order to be considered responsive, a bidder must make good faith efforts to meet the goal for Disadvantaged Business Enterprise (DBE) participation in this contract. The bidder must comply with Paragraphs A and B below and submit all documentation with submittal of the bid. If the bidder fails to do so, its bid may be deemed non-responsive and may be rejected.**

- A. Properly completing and signing Schedule A (Summary of DBE Participation). Schedule A is a list of all DBE subcontractors, their scope of work to be performed and dollar amount of participation of each DBE subcontractor.

**ANY DBE(s) LISTED ON SCHEDULE A MUST BE DBE CERTIFIED BY THE ILLINOIS UNIFIED CERTIFICATION PROGRAM (IL UCP) AT THE TIME OF THE BID OPENING.**

- B. Properly complete Schedule B (Confirmation of Proposed DBE Participation) of this Exhibit. Schedule B must list the name of the DBE subcontractor, a detailed description of DBE’s scope of work, and dollar amount of participation of each, and only each, DBE that will participate in this contract. If the bidder is itself a DBE, the DBE bidder must indicate on Schedule B what scope of work its forces will actually perform outside of the work of any subcontractor, and the dollar amount of that work. If this amount does not satisfy the DBE goal, the DBE bidder must list the additional DBE subcontractor(s) that will satisfy the DBE goal, along with their scope of work and agreed upon subcontract amount(s).

**DBE RESPONSIBILITY REQUIREMENTS**

- A. DBE Joint Ventures

If the bidder is a DBE joint venture, a two-party signed joint venture agreement (Schedule C) must be submitted to Pace for Pace’s approval along with your bid. This agreement must address the administrative, financial, and field responsibilities of each partner. The DBE participation must meet the criteria as set forth in the definitions in the following section “Calculating DBE Participation.”

- B. Substitutions

The bidder cannot substitute any DBEs listed on Schedule A or C (if a joint venture) without prior written approval from Pace.

**CALCULATING DBE PARTICIPATION**

**Pace will only count those DBEs that are certified by the IL UCP at the time of bid opening towards a Pace Contract goal.**

A. Definitions

**“Disadvantaged Business Enterprise” or “DBE”** means a for-profit small business concern that meets all of the following criteria:

1. Is at least fifty-one percent (51%) owned by one or more individuals who are both socially and economically disadvantaged or, in the case of a corporation, in which fifty-one percent (51%) of the stock is owned by one or more such individuals
2. Whose management structure and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it
3. Is certified by the IL UCP at the time of bid opening

**“Good Faith Efforts”** means efforts to achieve a DBE goal which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement. This definition is not intended to relieve the bidder of any of the responsiveness (or responsibility) requirements listed in SECTION B, *Disadvantaged Business Enterprise Compliance Requirements* of this Exhibit.

**“Joint Venture”** means an association of a DBE firm and one or more other firms to carry out a single, for-profit business enterprise, for which the parties combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.

**“Small Business concern”** means with respect to firms seeking to participate as DBEs in DOT-assisted contracts, a small business concern as defined pursuant to Section 3 of the Small Business Act and Small Business Administration regulations implementing it (13 CFR Part 121) that also does not exceed the cap on average annual gross receipts specified in 49 CFR Part 26.65(b).

**“Socially and Economically Disadvantaged”** individual means any individual who is a citizen (or lawfully admitted permanent resident) of the United States and who is:

1. Any individual who Pace finds to be a socially and economically disadvantaged individual on a case-by-case basis.
2. Any individual in the following groups, members of which are presumed to be socially and economically disadvantaged:
  - a. *“Black Americans,”* which includes persons having origins in any of the Black racial groups of Africa;
  - b. *“Hispanic Americans,”* which includes persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;
  - c. *“Native American,”* which includes persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians;
  - d. *“Asian Pacific American,”* which includes persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), the Commonwealth of the Northern Marianas Island, Macao, Fiji, Tonga, Kiribati, Juvalu, Nauru, Federated States of Micronesia, or Hong Kong;
  - e. *“Subcontinent Asian American,”* which includes persons whose origins are from India, Pakistan, Bangladesh, Bhutan the Maldives Island, Nepal or Sri Lanka;
  - f. *“Women”*;
  - g. Any additional groups whose members are designated as socially and economically disadvantaged by the United States Small Business Administration (SBA), at such time as SBA designation becomes effective.

B. General Conditions/DBE Calculations

Pace will use the certification standards of Subpart D of *49 CFR Part 26* and the certification procedures of Subpart E of *49CFR Part 26* to determine the eligibility of firms to participate as DBEs in DOT-assisted contracts. To be certified as a DBE, a firm must meet all certification eligibility standards. Pace, Suburban Bus Division of the Regional Transportation Authority will make its certification decision based on the facts as a whole.

As a partner in the IL UCP, Pace can provide, upon request, a directory of IL UCP DBE firms. The directory will also be available electronically at [www.Pacebus.com](http://www.Pacebus.com).

As required by 49 CFR Part 26.55, Pace counts DBE participation toward overall and contract goals as follows:

1. When a DBE participates in a contract, Pace counts only the value of the work actually performed by the DBE toward the DBE goal. Participation will only be credited in the DBE's area of specialization. Credit for work in other areas requires additional support documentation for each of those areas.
2. Pace counts the entire amount of that portion of a contract that is performed by the DBE's own forces. This includes the cost of supplies and materials obtained by the DBE for the work of the contract, including supplies purchased or equipment leased by the DBE (except supplies and equipment the DBE subcontractor purchases or leases from the Contractor or its affiliate).
3. Pace counts the entire amount of fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, toward DBE goals, provided Pace determines the fee to be reasonable and not excessive as compared with fees customarily allowed for similar services.
4. When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the DBE's subcontractor is itself a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward DBE goals.
5. When a DBE performs as a participant in a joint venture, Pace counts a portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the DBE performs with its own forces toward DBE goals.
6. Pace counts expenditures to a DBE toward DBE goals only if the DBE is performing a commercially useful function on this contract.
  - a. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, Pace, Suburban Bus Division of the Regional Transportation Authority must evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of work, and other relevant factors.
  - b. A DBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation. In determining whether a DBE is such an extra participant, Pace, Suburban Bus Division of the Regional Transportation Authority must examine similar transactions particularly those in which DBEs do not participate.
  - c. If a DBE firm acting as a Contractor and/or as a subcontractor under this contract does not perform or exercise responsibility for at least thirty percent (30%) of the total cost of its contract with its own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, Pace must presume that it is not performing a commercially useful function.
  - d. Pace uses the following factors in determining whether a DBE trucking company is performing a commercially useful function:
    - i. The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting DBE goals;
    - ii. The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the contract;
    - iii. The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it

- owns, insures, and operates using drivers it employs;
- iv. The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract;
  - v. The DBE may also lease trucks from a non-DBE firm, including an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission it receives as a result of the lease agreement. The DBE does not receive credit for the total value of the transportation services provided by the lessee, since these services are not provided by a DBE; and
  - vi. For purposes of this subparagraph (d), a lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.
- e. If a DBE is presumed not to be performing a commercially useful function as provided in these requirements, the DBE may present evidence to rebut this presumption. Pace may determine that the firm is performing a commercially useful function given the type of work involved and normal industry practices.
  - f. Pace's decisions on commercially useful function matters are subject to review by the Federal Transit Administration, but are not administratively appealable to United States Department of Transportation.
7. Pace counts expenditures with DBEs for materials or supplies toward DBE goals as provided in the following:
- a. If the materials or supplies are obtained from a DBE manufacturer, Pace, Suburban Bus Division of the Regional Transportation Authority counts 100 percent (100%) of the cost of the materials or supplies toward DBE goals;
  - b. For purposes of these requirements, a manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications;
  - c. If materials or supplies are purchased from a DBE regular dealer, Pace, Suburban Bus Division of the Regional Transportation Authority counts sixty percent (60%) of the cost of the materials or supplies toward DBE goals;
  - d. For purposes of these requirements, a regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.
    - i. To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question;
    - ii. A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating, or maintaining a place of business as provided in this paragraph if the person both owns and operates distribution equipment for the products. Any supplementing of regular dealer's own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis;
  - iii. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of this paragraph;
  - iv. With respect to materials or supplies purchased from a DBE which is neither a manufacturer nor a regular dealer, Pace counts the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, toward DBE goals, provided Pace determines the fees to be reasonable and not excessive as compared with fees customarily allowed for similar service. Pace will not count any portion of the cost of the materials and supplies themselves toward DBE goals, however;

8. Pace will not count toward its overall goal the dollar value of work performed under a contract by a firm after it has ceased to be certified.
9. Pace will not count the participation of a DBE subcontractor toward the Contractor's DBE achievements or Pace's overall goal until the amount being counted toward the goal has been paid to the DBE.

### GOOD FAITH EFFORTS

In order to be responsive, a bidder must make good faith efforts to meet Pace's DBE goal in either of two ways. The bidder must either 1) document how it will meet the full goal by completing and signing Schedule A or C (if a joint venture); or 2) document its attempt to meet the goal through detailed, corroborating evidence, i.e. demonstrate that it took *all necessary and reasonable steps* which, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if the bidder was not fully successful. Pace will make a fair and reasonable judgment whether a bidder that did not meet the goal made adequate good faith efforts. Pace will consider the quality, quantity, and intensity of the different kinds of efforts that the bidder/proposer made. The efforts employed by the bidder should be those that one would reasonably expect a bidder to take if the bidder were actively and aggressively trying to obtain DBE participation sufficient to meet the DBE contract goal. Mere *pro forma* efforts are not good faith efforts to meet the DBE contract requirements.

The following is a list of types of action that Pace will consider as part of the evaluation of the bidder's good faith efforts to obtain DBE participation. It is not intended to be a mandatory check list, or to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases:

- A. Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, if applicable, advertising, and/or written notices) the interest of all certified DBEs who have the ability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBEs to respond to the solicitation. The bidder must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.
- B. Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the bidder might otherwise prefer to perform these work items with its own forces.
- C. Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- D. Negotiating in Good Faith with interested DBEs
  1. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes:
    - a. the names, addresses, and telephone numbers of DBEs that were considered
    - b. a description of the information provided regarding the plans and specifications for the work selected for subcontracting
    - c. evidence as to why additional agreements could not be reached for DBEs to perform the work
  2. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take into consideration a firm's price and capabilities, as well as contract goals. The fact that there may be some additional costs involved in finding and using DBEs, however, is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept high quotes from DBEs if the price difference is excessive or unreasonable.
- E. Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within the industry, membership in specific groups, organizations, or associations and political or social affiliations (for example, union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.
- F. Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by Pace or the bidder.

- G. Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- H. Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices, and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

Pace will also take into account the performance of other bidders in meeting the contract goal. For example, when the apparent successful bidder fails to commit to the contract goal, but others commit to the goal, Pace will raise the question of whether, with additional reasonable efforts, the apparent successful bidder could have committed to the goal. If the apparent successful bidder fails to commit to the goal, but meets or exceeds the average DBE participation obtained by other bidders, Pace may view this, in conjunction with other factors, as evidence that the apparent successful bidder made good faith efforts.

The DBE Liaison Officer for Pace is responsible for determining whether a bidder has properly committed to meet the DBE goal and whether a bidder who has not committed to meeting the goal has documented good faith efforts in order to be responsive. Pace must be satisfied that all information is complete and accurate, and adequately documents the bidder's good faith efforts before Pace commits to the performance of the contract by the successful bidder.

**RECONSIDERATION**

In accordance with 49 CFR §26.53(d), if Pace determines that a bidder is not responsive because it has not committed to meeting the contract goal or has not documented sufficient good faith efforts, it will notify the bidder in writing, and the bidder will have five (5) business days after receipt of this notification to request administrative reconsideration. The bidder must make this request in writing to the following Pace Reconsideration Official:

General Counsel  
Pace  
550 W. Algonquin Road  
Arlington Heights, IL 60005

The Reconsideration Official will not have played any role in the original determination that the bidder did not document sufficient good faith efforts.

As part of this Reconsideration, the bidder shall have the opportunity to provide written documentation or argument concerning the issue of whether it committed to meeting the contract goal or made adequate good faith efforts to do so. The bidder can also request in writing to meet in person with Pace's Reconsideration Official to discuss these issues; this request for a meeting must be submitted within five (5) business days after receipt of notification of non-compliance. Pace will send the bidder a written decision within ten (10) business days after its reconsideration request was received by Pace, Suburban Bus Division of the Regional Transportation Authority, explaining Pace's basis for the finding that the bidder did or did not meet the goal or did or did not make adequate good faith efforts to do so. The result of this reconsideration process is not administratively appealable to the United States Department of Transportation and Pace, Suburban Bus Division of the Regional Transportation Authority's decision shall be final.

DOCUMENTATION REQUIREMENTS

A. Documentation of Subcontracts and Subcontractor Agreements after Contract Award

Within thirty (30) days upon receipt of an executed purchase order and contract, the Contractor must submit to the DBE Liaison Officer at Pace copies of SIGNED contracts between the Contractor and the DBE company/companies listed on its original DBE Schedules A and B.

FAILURE TO PROVIDE THE SIGNED SUBCONTRACT(S) TO PACE WITHIN THE TIME FRAME REQUIRED SHALL CONSTITUTE A BREACH OF THIS CONTRACT, AND UPON SUCH BREACH, PACE MAY TERMINATE THIS CONTRACT AND/OR EXERCISE OTHER SANCTIONS, PENALTIES, OR REMEDIES AS ALLOWED BY LAW OR EQUITY, AND AS PACE DEEMS APPROPRIATE.

B. Documentation of Payments Made to DBE Firms

1. The Contractor must submit copies of the DBE’s monthly contract invoices including support documentation to the DBE Liaison Officer at the same time they are submitted to Pace Account Payable.
2. The Contractor must submit copies of the form illustrated below (including support documentation) to the DBE Liaison Officer on a quarterly basis. This form must be used in order to properly credit the Contractor’s progress in attaining the DBE goal.

**SAMPLE ONLY – DO NOT COMPLETE**

Subcontract or Name (Company)	Description of services/work/product performed	Committed Percentage (for this reporting quarter)	Committed Percentage (YTD)	Total paid to Sub (Current quarter)	YTD paid to Sub (From date of contract)
				\$	\$
				\$	\$
				\$	\$
				\$	\$
<b>Total</b>					\$

C. Pace may make on-site visits from time to time during the course of this contract to ensure compliance with the requirements set forth herein.

Pace may require verification of any commitment represented to us in connection with the Contractor’s use of DBE businesses in the performance of this contract. Pace reserves the right to review the certified payrolls for the Contractor and all contractors working on this contract.

**Further, if problems should arise with respect to the Contractor’s subcontract with any DBEs, please contact Pace’s DBE Liaison Officer so that Pace may be apprised of all DBE issues.**

D. Substitution or Termination of DBE Firms

The Contractor may not terminate a listed and approved DBE subcontractor or an approved substitute DBE firm without the prior written approval of Pace’s DBE Liaison Officer and Pace’s Project Manager. This includes, but is not limited to, instances in which a Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. The Contractor will have to show good cause in order to terminate the listed and approved DBE firm.

Good Cause includes the following circumstances:

1. The listed DBE subcontractor fails or refuses to execute a written contract;
2. The listed DBE subcontractor fails or refuses to perform work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor;
3. The listed DBE subcontractor fails or refuses to meet the Contractor’s reasonable, nondiscriminatory bond requirements;
4. The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
5. The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to 2 CFR Parts 180, 215, and 1200 or applicable state law;
6. Pace’s DBE Liaison Office has determined that the listed DBE subcontractor is not a responsible Contractor;
7. The listed DBE subcontractor voluntarily withdraws from the project and provides to you written notice of its withdrawal;
8. The listed DBE is ineligible to receive DBE credit for the type of work required;
9. A DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract.
10. Other documented good cause that Pace’s DBE Liaison Office determines compels the termination of the DBE subcontractor. Provided that good cause does not exist if;
  - The Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE subcontractor was engaged; or
  - So that the Contractor can substitute another DBE or non-DBE subcontractor after contract award.

Before the Contractor seeks to terminate and/or substitute a DBE subcontractor, the Contractor must give notice in writing to the DBE subcontractor, with a copy to Pace’s Project Manager and Pace’s DBE Liaison Officer, of its intent to request to terminate and/or substitute, and the reason for the request. The DBE firm will have five (5) working days (or less if required by public necessity) to respond to the Contractor’s notice and advise the DBE Liaison Officer and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why Pace should not approve the Contractor’s action.

In the situation where the DBE’s work scope has been modified by Pace, the Contractor must immediately notify Pace’s Project Manager and Pace’s DBE Liaison Officer to discuss a revised “Commitment to DBE Participation”.

These provisions apply to post-award terminations and pre-award deletions of, or substitutions for, DBE firms put forward by offerors in negotiated procurements.

**E. Inspections and Records**

1. Pace may, with or without notice, periodically conduct on-site visits of any contract performance site or the place of business of any Contractor or DBE subcontractor from time to time during the course of a contract to ensure compliance with the requirements set forth in Pace’s contracts. The DBE department may be assisted by other Pace staff, and shall be entitled to reasonable access to facilities, personnel, and records related to the compliance plan.
2. Pace may require verification of any commitment represented to us in connection with the Contractor’s use of DBE businesses in the performance of this contract.
3. Pace reserves the right to review the certified payrolls, performance/payment records concerning subcontractors’ payroll records, tax returns and records, and books of accounts for the Contractor and all subcontractors working on any Pace, Suburban Bus Division of the Regional Transportation Authority contract. Full access shall be granted upon 48-hours’ notice by Pace, Suburban Bus Division of the Regional Transportation Authority or any duly authorized representative thereof or any law enforcement authority.



F. Change Orders

The contract specific DBE goals applicable to a contract may also be applicable to change orders or contract modifications, when the proposed change order work relates to the services provided by the DBE subcontractor.

G. Non-Compliance and Sanctions

1. Determination of Non-Compliance

- a. It will be the responsibility of Pace’s DBE Liaison Officer to monitor the compliance plan, as well as the fulfillment of any special conditions, work order goals, or other obligations of the contract as it pertains to the DBE program and DBE goals.
- b. Prior to contract closeout, the DBE Liaison Officer shall determine whether a Contractor has complied with the obligations under its compliance plan and other related requirements. The Contractor has the burden of proving compliance with all obligations and requirements
- c. If the Contractor fails to fulfill the requirements of the compliance plan or other compliance-related contractual obligation, Pace will notify the Contractor of the deficiencies. Following notification, the Contractor shall have sixty (60) days to cure the deficiencies. If the deficiencies are not cured, Pace shall make a determination of non-compliance and recommend the imposition of sanctions.

2. Sanctions for Non-Compliance

- a. Sanctions for non-compliance may include, but are not limited to, the following:
  - i. Withholding of payments under the contract;
  - ii. Recommendation not to exercise contract renewal option, if any;
  - iii. Termination of the contract
  - iv. Debarment from future business with Pace, Suburban Bus Division of the Regional Transportation Authority

## DBE Schedule A Checklist

*A completed and signed Schedule A consists of the following elements:*

- 1. Contractor
- 2. Name of Project
- 3. Phone
- 4. Email
- 5. IFB/RFP Number
- 6. **TOTAL** Estimated Contract Amount
- 7. Projected DATES
- 8. Title of Affiant (Contractor Duly Authorized Representative)
- 9. Contractor Company Name
- 10. DBE Participant(s) Company Name(s)
- 11. Scope of Work / Description (In Detail) for Each DBE Participant
- 12. Dollar Amount of Each DBE Contract - **Total** from each DBE's Schedule B)
- 13. Net DBE Credit \*60% credited for materials and supplies (see notation below if applicable)
- 14. TOTAL Dollar Amount for All DBE Contracts Listed
- 15. TOTAL Net DBE Credit (If applicable)
- 16. Printed or Typed Name of Contractor 's Affiant
- 17. Title of Affiant
- 18. Signature of Affiant
- 19. Date Signed

**Note: This Checklist serves solely as a reference guide to assist the Bidder in adequately submitting all required documents**  
**Instructions for NET DBE CREDIT**

If the materials or supplies are obtained from a DBE manufacturer, count 100 percent (100%) of the cost of the materials or supplies toward DBE goals.

A **manufacturer** is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications.

If the materials or supplies are purchased from a DBE regular dealer, count 60 percent (60%) of the cost of the materials or supplies toward DBE goals.

A regular **dealer** is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.

*Pace will not count the participation of a DBE subcontractor toward a contractor's final compliance with its DBE obligations on a contract until the amount being counted has actually been paid to the DBE.*

**SCHEDULE A**

**CONTRACTOR - SUMMARY OF DBE PARTICIPATION AS SUBCONTRACTOR, SUPPLIER AND/OR CONSULTANT**

NAME OF CONTRACTOR: (1) \_\_\_\_\_ NAME OF PROJECT: (2) \_\_\_\_\_

PHONE # (3) \_\_\_\_\_ EMAIL: (4) \_\_\_\_\_ IFB/RFP NUMBER: (5) \_\_\_\_\_

TOTAL ESTIMATED CONTRACT AMOUNT: (6) \$ \_\_\_\_\_ PROJECTED BEGINNING/ENDING DATES OF WORK: (7) \_\_\_\_\_

In connection with the above captioned contract, I HEREBY DECLARE AND AFFIRM that I am the (8) \_\_\_\_\_ and duly authorized representative of (9) \_\_\_\_\_

*(Title of Affiant)*

*(Name of Contractor)*

and that I have personally reviewed the material and facts set forth in and submitted with the attached Disadvantaged Business Enterprises (DBE) Schedules for each DBE. Listed below is/are the agreement(s) that correspond(s) with the Schedule B submitted by **each** DBE and **listed separately** for **each** DBE participating on the above mentioned contract:

NAME OF DBE SUBCONTRACTOR (10)	SCOPE OF WORK TO BE PERFORMED (11)	AGREED SUBCONTRACT PRICE (12)	NET DBE CREDIT * (13)
<b>NOTE: PRICES REPRESENTED ON THIS PAGE SHOULD ACCURATELY REFLECT AGREEMENT BETWEEN CONTRACTOR AND SUBCONTRACTOR.</b>		<b>TOTAL DBE (14) CONTRACT AMOUNT \$</b>	
<b>* ONLY 60% OF AGREED SUBCONTRACT PRICE MAY BE CREDITED FOR MATERIALS AND SUPPLIES LIST ONLY BONA FIDE DBE OWNED &amp; CONTROLLED FIRMS THAT WILL PARTICIPATE IN THIS CONTRACT.</b>		<b>TOTAL NET (15) DBE CREDIT \$</b>	

**AFFIDAVIT OF CONTRACTOR – *failure to submit this form without a signature will result in the bid being rejected in its entirety***

The undersigned will enter into formal agreements with all listed DBE firms for work as indicated by this Schedule A and accompanying Schedules, and will enter into such agreements within thirty (30) calendar days after receipt of the contract executed by Pace. In the event the Contractor cannot meet said thirty (30) day schedule, it must provide a written explanation for the delay and an estimate date by which the written agreement will be completed.

I understand that if I knowingly provide incorrect information or false statements or fail to comply with contract DBE requirements that Pace has an obligation (49 CFR 29.17(B)) to inform the U.S. Department of Transportation who may then initiate actions which would prohibit the Contractor from participation in future government contracts and may result in conviction for a Class 2 felony, including a penalty for one and a half times the value of the contract. Any substitutions of the above-named subcontractors requires prior written approval from Pace.

I do solemnly declare and affirm under penalty of perjury that the contents of the foregoing document are true and correct, and no material facts have been omitted, and that I am authorized on behalf of the Contractor to make this affidavit.

\_\_\_\_\_  
*(Name of Contractor's Affiant – Print or Type)*

\_\_\_\_\_  
*Title of Affiant*

\_\_\_\_\_  
*(Signature)*

\_\_\_\_\_  
*(Date)*

## DBE Schedule B Checklist

### Letter of Intent from DBE to Perform as Subcontractor, Supplier and/or Consultant

*A completed and signed Schedule B consists of the following elements:*

- 1. IFB/RFP Number
- 2. Name of Project
- 3. DBE Participant Company Name
- 4. Contractor Company Name
- 5. DBE Participant Address
- 6. DBE Participant Phone Number
- 7. DBE Participant Email Address
- 8. Date of IL UCP DBE Certification Letter
- 9. Description/Type of Work (In Detail)
- 10. Quantity/Unit Price, if Applicable
- 11. Dollar Amount of DBE Contract Total Sum Amount for Work or Extended Price for individual Quantity Items) **NOTE: Specify Total Value**
- 12. Grand Total of above Amount(s) and/or Extended Price(s)
- 13. Phase (if Applicable) in Which Above-Described Work Will Be Performed

#### **Subcontracting Levels**

- 14. % \*\_\_\_ of the dollar amount of the DBE's Subcontract will be sublet to DBE Contractors.
- 15. % \*\_\_\_ of the dollar amount of the DBE's Subcontract will be sublet to non-DBE Contractors.
  - \* *This is to disclose the % of above-named DBE participant's work to be further subcontracted to others (DBE or non-DBE), not the DBE Participant's % of work on the Contractor's contract.*
  - \* *% is to be filled in with a Zero (0) if the above-named DBE Participant will not be further subcontracting any of the work described in this Schedule B*
- 16. Explanation and Description of the Work To Be Sublet (if applicable)
- 17. Printed Name/Title of Owner, President or Authorized Agent of DBE Company
- 18. Signature of Owner, President or Authorized Agent of DBE Company
- 19. Date Signed

***If proposing to perform as a DBE/non-DBE Joint Venture:***

- 20. Completed SCHEDULE C must be attached

***Note: This Checklist serves solely as a reference guide to assist the Bidder in adequately submitting all required documents.***

**SCHEDULE B**  
**CONFIRMATION OF PROPOSED DBE PARTICIPATION**

*Proposer's failure to submit both pages of this form with its bid will result in the bid being rejected in its entirety*

IFB/RFP NUMBER: (1) \_\_\_\_\_

NAME OF PROJECT: (2) \_\_\_\_\_

FROM: (3) \_\_\_\_\_  
(Name of DBE firm)

TO: (4) \_\_\_\_\_ and Pace,  
(Name of Contractor)

(5) \_\_\_\_\_  
(Address of DBE Firm)

(6) \_\_\_\_\_  
(Phone Number of *Authorized Agent of* DBE firm)

(7) \_\_\_\_\_  
(Email Address of *Authorized Agent* DBE firm)

The DBE status of the undersigned is confirmed by the attached Letter of Certification from the IL UCP dated, (8) \_\_\_\_\_  
(If proposing to perform as a DBE/non-DBE Joint Venture, the Letter of Certification from the DBE venturer is attached along with a completed Schedule B and joint venture agreement).

The undersigned is prepared to provide the following described services or supply the following described goods in connection with the above named project/contract:

<b>Description/Type of Work (In Detail) (9)</b>	<b>Quantity (If Applicable) (10)</b>	<b>Dollar Amount of DBE Contract (11)</b>
<b>TOTAL VALUE</b>		<b>\$ _____ (12)</b>

**Multi-Phase Project(s).** For those projects that are multi-phase, please indicate the phase in which the DBE will be performing work: (13)  
\_\_\_\_\_

**SCHEDULE B**  
**AFFIDAVIT OF DBE SUBCONTRACTOR**

**Subcontracting Levels**

(14) % \_\_\_\_\_ of the dollar amount of the DBE's subcontract will be sublet to **DBE Subcontractors**.

(15) % \_\_\_\_\_ of the dollar amount of the DBE's subcontract will be sublet to **non-DBE Subcontractors**.

**NOTICE: IF THE DBE WILL NOT BE SUBCONTRACTING ANY OF THE WORK DESCRIBED IN THIS SCHEDULE, A ZERO (0) MUST BE SHOWN IN EACH BLANK ABOVE.**

IF **ANY** DOLLAR AMOUNT OF THE DBE's SCOPE OF WORK WILL BE SUBLET, A BRIEF EXPLANATION AND DESCRIPTION OF THE WORK TO BE SUBLET MUST BE LISTED BELOW: (16)

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**NOTICE:** Any misrepresentation regarding the status of a person or an entity in order to qualify for DBE status may result in conviction for a Class 2 felony, including a penalty for one and a half times the value of the contract. Material misrepresentation on any matter will also be grounds for terminating any contract which may be awarded, and for initiating action under federal or state laws concerning false statements.

The undersigned will enter into a formal written agreement for the above work with the Contractor conditioned upon their execution of a contract with Pace, and will do so within thirty (30) calendar days of their receipt of a signed contract from Pace.

I further understand that any willful falsification, fraudulent statement, or misrepresentation will result in appropriate sanctions, which may include debarment and/or prosecution under applicable State and Federal laws.

(17) \_\_\_\_\_  
*Print - Name and Title*

(18) \_\_\_\_\_  
*Signature of Owner, President or Authorized Agent of DBE*

(19) \_\_\_\_\_  
*Date*

**Pursuant to 49 CFR §26.13(b), each subcontract the contractor signs with a subcontractor must include the following assurance:**

*{ The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as Pace deems appropriate. }*

Pursuant to 49 CFR §26.27, Pace encourages you to utilize financial institutions owned and controlled by socially and economically disadvantaged individuals within your community.

**SCHEDULE C**  
**AFFIDAVIT OF DBE/NON-DBE JOINT VENTURE**

***This Schedule C need not be submitted if all joint ventures are DBEs.*** In such a case, however, the written joint venture agreement and a copy of the current IL UCP Letter of Certification for each DBE must be submitted.

ALL INFORMATION REQUESTED BY THIS SCHEDULE MUST BE ANSWERED IN THE SPACES PROVIDED BY JOINT VENTURERS AT ANY TIER. ADDITIONAL SHEETS MAY BE ATTACHED.

**I. Name of joint venture:** \_\_\_\_\_

Address of joint venture: \_\_\_\_\_  
Street City State Zip

Phone number of joint venture: \_\_\_\_\_

**II. Identify each non-DBE venture(s):** \_\_\_\_\_

Name of Firm: \_\_\_\_\_

Address: \_\_\_\_\_  
Street City State Zip

Phone: \_\_\_\_\_

Contact person for matters concerning DBE compliance: \_\_\_\_\_

**III. Identify each DBE venturer(s):** \_\_\_\_\_

Name of Firm: \_\_\_\_\_

Address: \_\_\_\_\_  
Street City State Zip

Phone: \_\_\_\_\_

Contact person for matters concerning DBE compliance: \_\_\_\_\_

**IV. Describe the role(s) of the DBE venturer(s) in the joint venture:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**V. Attach a copy of the joint venture agreement.** In order to demonstrate the DBE venturer's share in the ownership, control management responsibilities, risks and profits of the joint venture, the proposed joint venture agreement must include specific details related to: (1) the contributions of capital and equipment; (2) work items to be performed by the DBE's own forces, (3) work items to be performed under the supervision of the DBE venturer; and (4) the commitment of management, supervisory and operative personnel employed by the DBE to be dedicated to the performance of the project.

**VI. Attach a copy of the current IL UCP Letter of Certification for each DBE joint venturer.**

**VII. Ownership of the Joint Venture:**

A. What is the percentage(s) of DBE ownership in the joint venture?

DBE ownership percentage(s): \_\_\_\_\_

Non-DBE ownership percentage(s): \_\_\_\_\_

**SCHEDULE C**  
**AFFIDAVIT OF DBE/NON-DBE JOINT VENTURE**

**VII. Ownership of the Joint Venture** *(continued)*:

A. Specify DBE/non-DBE percentages for each of the following (provide narrative descriptions and other detail as applicable):

1. Sharing of profit and loss: \_\_\_\_\_

2. Capital contributions: \_\_\_\_\_

(a) Dollar amounts of initial contribution: \_\_\_\_\_

(b) Dollar amounts of anticipated on-going contributions: \_\_\_\_\_

3. Contributions of equipment *(specify types, quality and quantities of equipment to be provided by each venturer)*:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Other applicable ownership interests, including ownership options or other agreements, which restrict or limit ownership and/or control:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. **Provide copies of all written agreements between venturers concerning this project.**

6. Identify each current Pace contract and each contract completed during the past two (2) years by either of the joint venture partners participating in this joint venture:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**VIII. Control of and Participation in the Joint Venture.** Identify by name and firm those individuals who are, or will be, responsible for and have the authority to engage in the following management functions and policy decisions. (Indicate any limitations to their authority such as dollar limits and co-signatory requirements.):

A. Joint venture check signing:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

B. Authority to enter contracts on behalf of the joint venture:

\_\_\_\_\_



**SCHEDULE C**  
**AFFIDAVIT OF DBE/NON-DBE JOINT VENTURE**

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**C.** Signing, co-signing and/or collateralizing loans:

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**D.** Acquisition of lines of credit:

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**E.** Acquisition and indemnification of payment and performance bonds:

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**F.** Negotiating and signing labor agreements:

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**G.** Management of contract performance. *(Identify by name and firm only):*

**1.** Supervision of field operations: \_\_\_\_\_

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**2.** Major purchases: \_\_\_\_\_

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**3.** Estimating: \_\_\_\_\_

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**4.** Estimating: \_\_\_\_\_

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**IX. Financial Controls of Joint Venture:**

**A.** Which firm and/or individual will be responsible for keeping the books of account?

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**B.** Identify the "managing partner," if any, and describe the means and measure of their compensation:

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**SCHEDULE C**  
**AFFIDAVIT OF DBE/NON-DBE JOINT VENTURE**

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**C.** What authority does each venturer have to commit or obligate the other to insurance and bonding companies, financing institutions, suppliers, subcontractors, and/or other parties participating in the performance of this contract or the work of this

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**X.** State the approximate number of personnel (by trade) needed to perform the joint venture's work under this contract. Indicate whether they will be employees of the majority firm, DBE firm, or the joint venture.

<b>Trade</b>	<b>Non-DBE Firm (number)</b>	<b>DBE (number)</b>	<b>Joint Venture (number)</b>

**Professional**

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**Administrative/Clerical**

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**Unskilled Labor**

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If any personnel proposed for this project will be employees of the joint venture:

A. Are any proposed joint venture employees currently employed by either venture? \_\_\_\_\_  
Employed by non-DBE (number): \_\_\_\_\_ Employed by DBE: \_\_\_\_\_

B. Identify by name and firm the individual who will be responsible for joint venture hiring:  
\_\_\_\_\_

XI. Please state any material facts and additional information pertinent to the control and structure of this joint venture:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The undersigned affirm that the foregoing statements are correct and include all material information necessary to identify and explain the terms and operations of our joint venture and the intended participation of each venturer in the undertaking. Further, the undersigned covenant and agree, under which work is done for Pace by the venturers, to provide to Pace current, complete and accurate information regarding actual joint venture work and the payment therefore, and any proposed changes to any provision of the joint venture, or those of each venturer relevant to the joint venture by authorized representatives of Pace, its Inspector General or any of its funding agencies.

Any misrepresentation regarding the status of a person or an entity in order to qualify for DBE status may result in conviction for a Class 2 felony, including a penalty for one and a half times the value of the contract. Material misrepresentation on any matter will also be grounds for terminating any contract which may be awarded, and for initiating action under federal or state laws concerning false statements.

**NOTE:** *If, after filing this Schedule C and before the completion of the joint venture's work on the project, there is any change in the information submitted, the joint venture must inform the DBE Liaison Officer directly in writing or through the contractor if the joint venture is a subcontractor.*

\_\_\_\_\_  
Name of DBE Partner Firm

\_\_\_\_\_  
Name of Non-DBE Partner Firm

\_\_\_\_\_  
Signature of Affiant

\_\_\_\_\_  
Signature of Affiant

\_\_\_\_\_  
Name and Title of Affiant (Type of Print)

\_\_\_\_\_  
Name and Title of Affiant (Type of Print)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

thereof shall be returned to Pace. Where Pace's data, designs or other information are furnished to the Contractor's suppliers for procurement of supplies by the Contractor for use in the performance of Pace Contracts, the Contractor shall insert the substance of this provision in its Contract.

14. Conflict of Interest: Members of the Board, officers and employees of Pace, their spouses, their children, their parents, their brothers and sisters and their children, are prohibited from having or acquiring any Contract or any direct pecuniary interest in any Contract which will be wholly or partially performed by the payment of funds or the transfer of property of Pace in accordance with Section 4.03 of the Pace Regulations Governing Public Bidding (Ordinance SBD 19-59).
15. Conflict In Provisions: In the event of a conflict between any of the terms and conditions contained in the base Contract and its referenced exhibits, the base Contract provisions shall apply unless otherwise provided for.
16. Trade Names: In cases where an item is identified in these Contract documents by a manufacturer's name, trade name, catalog number or reference, it is understood that the Contractor shall furnish the item so identified or shall furnish an "equal" unless specified elsewhere in the bid documents. The specific article, equipment or material mentioned shall be understood as establishing the type, function and minimum standard of design, efficiency, quality and performance desired and shall not be construed in such a manner as to exclude manufacturer's products of comparable design, efficiency, quality and performance. Bid quotations on other makes or catalog numbers will be considered for current or future purchases provided the Contractor clearly states that an "equal" is proposed and he furnishes sufficient information with his bid to determine compliance.
17. Warranties: The following warranty will apply unless otherwise provided for in the Contract documents. The Contractor warrants that articles or work products delivered hereunder shall be free from defects of material and workmanship and that all products furnished will conform to samples, specifications and/or drawings submitted as may be applicable, and are fit for the purpose for which purchased. The warranty period shall be for one (1) year from the date of delivery or date of final acceptance whichever is later. Pace may return any nonconforming or defective items or work products to the Contractor or require correction or replacement of the item at the time the defect is discovered, all at the Contractor's risk and expense. Acceptance of items or work products by Pace or payment therefore, shall not relieve the Contractor of his responsibilities hereunder.
18. Approximate Quantities and Line Items: Pace may accept and make award based on less than all of the items or for less than all of the units indicated under any given item, unless the bidder qualifies the bid by specific limitations or unless otherwise provided for in the solicitation. Bids may be submitted for quantities less than those specified. Pace reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit prices offered, unless the bidder specifies otherwise in the bid. Where approximate quantities are stated, the unit prices quoted in the bid will apply regardless of whether the actual quantities are greater or lesser than the assumed quantities, the stated total notwithstanding.
19. Retention of Records: Unless otherwise specified elsewhere in the Contract, the Contractor shall maintain all records produced under the Contract, including records to support actual time and costs incurred, for a minimum period of five (5) years after completion of the Contract. All records maintained under the Contract shall be subject to inspection and audit by Pace and/or its designated agent upon reasonable notice to the Contractor.
20. Bid Protest Procedures

**SECTION I**

- A. Pace will hear and consider a bona fide bid protest regarding its procurement actions in accordance with the following procedures. Due to the significantly reduced role of FTA in bid protests, as described in Section II, it is anticipated that the majority of all protests will be evaluated and finally decided by Pace. Accordingly, Pace intends to provide a thorough review of all bona fide bid protests. Pace's primary concern, however, is the timely procurement of needed capital equipment, supplies or services. It does not intend to allow the filing of bid protests to unnecessarily delay the procurement process, especially if the protest involved is vexatious or frivolous in nature.

Notwithstanding the availability of these protest procedures, any interested party is encouraged to exhaust all methods described in the Contract Documents of resolving a procurement issue before filing a formal protest with Pace. In its consideration of a bid protest, Pace reserves the right to give due consideration to the good faith efforts of the protestor to resolve the issue involved through informal methods.

**B. Definitions**

For purposes of this section

1. The term "days" refers to working days of Pace
2. The term "interested party" means any person (a) who is an actual bidder/proposer or prospective bidder/proposer in the procurement involved, and (b) whose direct economic interest would be affected by the award of the Contract or by a failure to award the Contract

**C. Submission of Protests**

Any interested party may file a bid protest with Pace on the basis that Pace has failed to comply with applicable Federal or State law or with Pace's Procurement Regulations. The protest must be filed in accordance with the timing requirements set forth in subsection D of this section, and must include:

1. The name and address of the protestor
2. The number of the Contract solicitation
3. A statement of the grounds for the protest, and in particular the Federal or State law or Authority Regulation alleged to have been violated; this statement should be accompanied by any supporting documentation the protesting party desires Pace to consider in making its decision

Protests should be submitted to: Chief Procurement Officer  
 Pace  
 550 W. Algonquin Road  
 Arlington Heights, IL 60005

**D. Types of Protests and Timing**

The requirement for timely filing of a bid protest with Pace will depend upon the type of protests involved. Pace will consider the following three types of protests by interested parties.

**1. Protests regarding solicitation**

Any bid protest regarding the solicitation by Pace must be filed no later than **five (5) days** before the opening of bids/closing date of the Request for Proposal. Any protest filed after that date which raises issues regarding the solicitation will not be considered by Pace.

This type of protest would include any claim that the solicitation contained exclusionary or discriminatory specifications, any challenge to the basis of award, or any claim that the solicitation documents or the solicitation process violated applicable Federal or State law, or that Pace failed to follow its Procurement Regulations in the solicitation of bids/proposals.

**2. Protests regarding bid evaluation (Invitation for Bids)**

Any bid protest regarding the evaluation of bids, submitted in response to an Invitation for Bid (IFB) issued by Pace, must be filed with Pace no later than **fifteen (15) days** after the public opening of bids. Any protest filed after such date which raises issues regarding the IFB evaluation will not be considered by Pace.

This type of protest would include any challenge to determinations by Pace of the responsiveness of a bid or the responsibility of a bidder, or any claim that the evaluation of bids violated Federal or State law or Pace's Procurement Regulations.

### 3. Protests regarding proposal evaluation (Request for Proposals)

The Request for Proposal (RFP) evaluation process, and all evaluation materials associated with this process, shall be considered confidential until final award of the Contract is made. Therefore, any protest regarding the evaluation of proposals, submitted in response to an RFP issued by Pace, must be filed with Pace no later than 15 days after the date of Contract award. Any protest filed after such date which raises issues regarding the RFP evaluation will not be considered.

This type of protest would include any challenge to determinations by Pace of the responsiveness of a proposal or the responsibility of a proposer, or any claim that the evaluation of proposals violated Federal or State law or Pace's Procurement Regulations.

### 4. Protests Regarding Award of Contract

Any protest regarding the award of the Contract must be filed no later than **fifteen (15) days** after the date of award. Any protest regarding the award of the Contract filed after that date will not be considered by Pace.

This type of protest will only be entertained by Pace if the protestor is able to demonstrate that the party awarded the Contract fraudulently represented itself as a responsible bidder or that Pace violated Federal or State law or its Procurement Regulations in the award of the Contract.

## E. Pace Response

### 1. Types of Protests

Pace will notify the protestor upon timely receipt of a bid protest and may, where appropriate, request additional information from the protestor. Pace may, in its discretion, meet with the protestor to review the matters raised by the protest. Pace's consideration of the particular types of protests will, except as otherwise provided in Paragraph 2 of this subsection, be in accordance with the following provisions:

#### a. Protests regarding solicitation

Upon receipt of a timely filed protest regarding the solicitation, Pace will postpone the opening of bids until resolution of the protest. No additional bids will be accepted during the period of postponement.

If the protest regarding the solicitation involves a claim of unduly restrictive or exclusionary specifications, Pace will, in evaluating the protest, consider both the specific need of Pace for the feature or item challenged and whether competition is negatively impacted by including the specification regarding that feature or item. If Pace determines that such feature or item was included in the specification in order to meet justified and valid transit needs of Pace, and was not unduly restrictive of competition or designed to exclude a particular competitor, then Pace will have grounds to deny the protest.

#### b. Protest regarding bid evaluation (Invitation for Bids)

Upon receipt of a timely filed protest regarding the evaluation of bids, submitted in response to an Invitation for Bid (IFB) issued by Pace, Pace will suspend its evaluation, or award, of any or all bids submitted until resolution of the protest if Pace determines that the protestor has established that there is substantial evidence that there are doubts regarding the responsiveness of a bid or the responsibility of a bidder or regarding Pace's compliance with Federal or State law or its Procurement Regulations.

#### c. Protest regarding proposal evaluation (Request for Proposals)

Upon receipt of a timely filed protest regarding the evaluation of proposals, submitted in response to an Request for Proposal (RFP) issued by Pace, Pace will issue a stop work order, if necessary, until the resolution of the protest if Pace determines that the protestor has established that there is substantial evidence that there are doubts regarding the responsiveness of a proposal or the responsibility of a proposer or regarding Pace's compliance with Federal or State law or its Procurement Regulations.

#### d. Protests after award

Upon receipt of a timely filed protest regarding the award of a Contract, Pace will issue a stop work order, if necessary, until the resolution of the protest if Pace determines that the protestor has established a **Prima facie** case that the Contract was awarded fraudulently or in violation of Federal or State law or Pace's Procurement Regulations.

## 2. Decisions by Pace

As indicated above, in most instances Pace will suspend the procurement process upon receipt of a bona fide bid protest. However, Pace reserves the right, notwithstanding the pendency of a protest, to proceed with the appropriate action in the procurement process or under the Contract in the following cases:

- a. where the item to be procured is urgently required
- b. where Pace determines that the protest was vexatious or frivolous
- c. where delivery or performance will be unduly delayed, or other undue harm will occur, by failure to make the award promptly

After review of a bid protest submitted under this section, Pace will issue a written decision on the basis of the information provided by the protestor, the results of any meetings with the protestor, and Pace's own investigation. If the protest is upheld, Pace will take appropriate action to correct the procurement process and protect the rights of the protestor, including re-solicitation of bids/proposals, revised evaluation of bids/proposals or Pace determinations, or termination of the Contract. If the protest is denied, Pace will lift any suspension imposed and proceed with the procurement process or the Contract, as the case may be.

The availability of review of bid protests by FTA is described in Section II. As noted in that section, under FTA's revised procurement guidelines the role of the Federal government in bid protest review is quite limited.

### SECTION II – FTA BID PROTEST PROCEDURE

Under Circular 4220.1F, FTA has substantially limited its review of bid protests recognizing that most protest issues are best resolved at the State or Local level. FTA will now only accept protests alleging that: Pace failed to have written protest procedures; or, Pace violated their own protest procedures.

If a protest is brought before FTA on either of these allegations, the only remedy recognized by FTA under Circular 4220.1F is to require Pace to follow its own protest procedures. FTA does not have the right to change Pace's substantive decision by substituting FTA's judgment for that of Pace.

Any protest to FTA must be filed in accordance with the requirements contained in FTA Circular 4220.1F and may only be made by an "interested party" which FTA has defined as "an actual or prospective bidder or offerer whose direct economic interest would be affected by the award of the Contract or by failure to award the Contract."

No protest may be filed with FTA later than five days after a final decision under Pace's procedure. As used in the preceding sentence, "filed" refers to the date of receipt by FTA and "days" refers to working days of the Federal Government.

Any alleged violation of a specified Federal requirement that provides an applicable complaint procedure shall be submitted and processed in accordance with the applicable Federal regulations instead of the requirements of FTA Circular 4220.1F. For example, see the Buy America Requirements, 40 C.F.R. Part 661 (Section 661.15); Participation of Minority Business Enterprises in Department of Transportation Program, 49 C.F.R. Section 26.107.

#### 21. Illinois Freedom of Information Act (FOIA)

As a government agency, Pace is subject to the Illinois Freedom of Information Act (FOIA) or 5 ILCS 140/1, et. seq. as amended. Therefore, the contents of this Request for Proposals (RFP) or Invitation for Bids (IFB) and the Contractor's proposal or bid submitted in response to this RFP or IFB are subject to the Illinois FOIA statutes. However, there are various items that may be exempt, which include but are not limited to trade secrets or commercial/financial information that are proprietary, privileged, or confidential, or where disclosure of the same would result in competitive harm (refer to Section 4002 of the Technology Advancement and Development Act and to Section 7 of the Illinois Freedom of Information Act). If any such proprietary, privileged, or confidential information or data is included in the Contractor's proposal or bid, each page that contains this information or data should be marked as such (e.g., "Proprietary and Competition Sensitive") in order to indicate your claim to an exemption provided in the Illinois FOIA.

It is Pace's sole right and responsibility, however, to make the determination whether these items are exempt or not exempt under the Illinois FOIA statutes.

22. Dispute Resolution:

- a. Governing Law - This contract will be governed by and construed in accordance with the laws of the State of Illinois.
- b. Notice of Dispute and Negotiation - Either party may initiate a dispute by sending notice of a dispute to the other party. Once initiated, the parties shall attempt to promptly resolve the dispute through good faith negotiations.
- c. Performance During Dispute - Unless otherwise directed by Pace's authorized representative, contractor shall continue performance under this contract while matters in dispute are being resolved.
- d. Litigation, Venue and Jurisdiction - If the dispute is not resolved within fourteen (14) days after receipt of a notice of dispute, either party may then submit the dispute to an Illinois court of competent jurisdiction. The parties agree to submit to the exclusive jurisdiction of the Illinois courts over any claim or matter arising under or in connection with this contract.



SECTION C – FTA/IDOT/RTA REQUIREMENTS

**U.S. DEPARTMENT OF TRANSPORTATION (DOT)  
FEDERAL TRANSIT ADMINISTRATION (FTA)  
ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT)  
AND THE REGIONAL TRANSPORTATION AUTHORITY (RTA)**

The following terms and conditions are incorporated herein by reference and made a part of any Contract(s) issued as a result of a Pace Request for Quotation, Invitation for Bid or Request for Proposal.

**FTA Requirements**

1. **Fly America Requirements**: The Fly America requirements apply to all Contracts greater than \$3,000 which include the transportation of persons or property, by air, between a place in the U.S. and a place outside the U.S., or between places outside the U.S. The Contractor agrees to comply with 49 U.S.C. 40118 (the “Fly America” Act) in accordance with the General Services Administration’s regulations at 41 CFR Part 301-10, which provide that recipients and sub-recipients of Federal funds and their Contractors are required to use U.S. Flag air carriers for U.S. Government-financed international air travel and transportation of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of necessity, as defined by the Fly America Act. The Contractor shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S. flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements. The Contractor agrees to include the requirements of this section in all subcontracts that may involve international air transportation.
  
2. **Surface Transportation Assistance Act/Buy America**: The Buy America requirements apply to the following types of Contracts: Construction Contracts and Acquisition of Goods or Rolling Stock (valued at more than \$150,000). The Buy America requirements flow down from FTA recipients and sub-recipients to first tier Contractors, who are responsible for ensuring that lower tier Contractors and subcontractors are in compliance. The \$150,000 threshold applies only to the grantee’s (Pace’s) Contracts, subcontracts under that amount are subject to Buy America.
  - A. Pursuant to Section 165.a and 165.b of the Surface Transportation Assistance Act of 1982, the Contractor acknowledges that federal funds shall not be appropriated or utilized for any Contract awarded pursuant to this bid unless steel, cement and manufactured products used in such projects are produced in the United States; provided however, that the foregoing provision shall not apply where the Secretary of Transportation has made one of the following determinations:
    - (1) That the application of the foregoing provision would be inconsistent with the public interest
    - (2) That such materials and products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality
    - (3) In the case of the procurement of bus and other rolling stock (including train control, communication, and traction power equipment), that (a) the cost of components which are produced in the United States is more than 60% of the vehicle or equipment described in this paragraph, and (b) final assembly of the vehicle or equipment described in this paragraph has taken place in the United States
    - (4) That inclusion of domestic material will increase the cost of the overall project Contract by more than 25%
  - B. For purposes of this section, in calculating components' costs, labor costs involved in final assembly shall not be included in the calculation.
  - C. Likewise, the Contractor agrees as a condition of responsiveness to and in order to induce the acceptance of this Bid Proposal, that it will submit with its Bid Proposal, a completed Buy America Certification as set forth herein.
  
3. **Charter Service Operations**: The Charter Bus requirements apply to the following type of Contract: Operational Service Contracts greater than \$3,000. The Contractor agrees to comply with 49 U.S.C. 5323(d) and 49 CFR Part 604, which provides that recipients and sub-recipients of FTA assistance are prohibited from providing charter service using federally funded equipment or facilities if there is at least one private charter operator willing and able to provide the service, except under one of the exceptions at 49 CFR 604.9. Any charter service provided under one of the exceptions must be "incidental," i.e., it must not interfere with or detract from the provision of mass transportation.

4. **School Bus Operations**: The School Bus requirements apply to the following type of Contract: Operational Service Contracts greater than \$3,000. Pursuant to 69 U.S.C. 5323(f) and 49 CFR Part 605, recipients and sub-recipients of FTA assistance may not engage in school bus operations exclusively for the transportation of students and school personnel in competition with private school bus operators unless qualified under specified exemptions. When operating exclusive school bus service under an allowable exemption, recipients and sub-recipients may not use federally funded equipment, vehicles, or facilities.
5. **Cargo Preference – Use of United States Flag Vessels**: The Cargo Preference requirements apply to all Contracts greater than \$3,000 which involving equipment, materials, or commodities which may be transported by ocean vessels. The Contractor agrees:
- A. To utilize privately owned United States flag commercial vessels to ship at least 50% of the gross tonnage (computed separately for dry bulk carriers, dry cargo lines, and tankers) involved, whenever shipping any equipment, materials, or commodities pursuant to this Contract, to the extent such vessels are available at fair and reasonable rates for United States flag commercial vessels.
  - B. To furnish within 20 days following the date of loading, for shipment originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, "on board" commercial ocean bill-of-lading in English for each shipment of cargo described in the preceding paragraph to Pace (through the prime Contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration 400 Seventh Street, S.W., Washington, D.C. 20590, marked with appropriate identification of the project.
  - C. To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this Contract.
6. **Seismic Safety**: The Seismic Safety requirements apply only to Contracts for the construction of new buildings or additions to existing buildings which are greater than \$3,000.00. The Contractor agrees that any new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in Department of Transportation Seismic Safety Regulations 49 CFR Part 41 and will certify to compliance to the extent required by the regulation. The Contractor also agrees to ensure that all work performed under this Contract including work performed by a subcontractor is in compliance with the standards required by the Seismic Safety Regulations and the certification of compliance issued on the project.
7. **Energy Conservation Requirements**: The Energy Conservation requirements are applicable to all Contracts which are greater than \$3,000. The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.
8. **Clean Water Requirements**: The Clean Water requirements apply to each Contract and subcontract which exceeds \$100,000. (1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. The Contractor agrees to report each violation to Pace and understands and agrees that Pace will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office. (2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.
9. **Byrd Anti Lobbying Amendment**: Byrd Anti-Lobbying Amendment, 31 U.S.C. 1352, as amended by the Lobbying Disclosure Act of 1995, P.L. 104-65 [to be codified at 2 U.S.C. § 1601, et seq.] - Contractors who apply or bid for an award of \$100,000 or more shall file the certification required by 49 CFR part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal Contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal Contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the recipient. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal Contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions. The Standard Form-LLL shall be submitted to the Pace Legal Department, Attn: General Counsel who, pursuant to federal regulations, will submit the form(s) to the Federal Transit Administration.

10. **Audit:** Applicable to all Contracts greater than \$3,000. The Contractor shall permit the authorized representatives of Pace, IDOT, FTA, RTA and the Comptroller General of the United States to inspect and audit all work, materials, data and records of the Contractor relating to performance under the Contract.
11. **Federal Changes:** The Federal Changes requirement applies to all Contracts greater than \$3,000. The Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the FTA Master Agreement (available from the FTA website) between Pace and FTA, as they may be amended or promulgated from time to time during the term of this Contract. The Contractor's failure to so comply shall constitute a material breach of this Contract.
12. **Clean Air Requirements:** The Clean Air requirements apply to all Contracts exceeding \$100,000 including indefinite quantities where the amount is expected to exceed \$100,000 in any year. The Clean Air requirements flow down to all subcontracts which exceed \$100,000. (1) The Contractor agrees to comply with all applicable standards, order or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq. The Contractor agrees to report each violation to Pace and understands and agrees that Pace will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office. (2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.
13. **Recovered Materials:** The Contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 CFR Part 247.
14. **Davis-Bacon and Copeland Anti-Kickback Acts:** The Davis-Bacon and Related Acts apply to Contractors and subcontractors performing on federally funded or assisted Contracts in excess of \$2,000 for the construction, alteration, or repair (including painting and decorating) of public buildings or public works.

**(1) Minimum Wages**

- (i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

- (ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the Contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) Except with respect to helpers as defined as 29 CFR 5.2(n)(4), the work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

- (4) With respect to helpers as defined in 29 CFR 5.2(n)(4), such a classification prevails in the area in which the work is performed.
- (B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this Contract from the first day on which work is performed in the classification.
- (iii) Whenever the minimum wage rate prescribed in the Contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- (iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.
- (v)(A) The contracting officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the Contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
  - (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
  - (2) The classification is utilized in the area by the construction industry; and
  - (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination with 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(v) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this Contract from the first day on which work is performed in the classification.

(2) **Withholding** – The Suburban Bus Division of the Regional Transportation Authority (Pace) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this Contract or any other Federal Contract with the same prime Contractor, or any other federally-assisted Contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the Contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the Contract, the Suburban Bus Division of the Regional Transportation Authority (Pace) may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) **Payrolls and basic records**

(i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The Contractor shall submit weekly for each week in which any Contract work is performed a copy of all payrolls to the Suburban Bus Division of the Regional Transportation Authority (Pace) for transmission to the Federal Transit Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under section 5.5(a)(3)(i) of Regulations, 29 CFR part 5. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington DC 20402. The prime Contractor is responsible for the submission of copies of payrolls by all subcontractors.

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:

- (1) That the payroll for the payroll period contains the information required to be maintained under section 5.5(a)(3)(i) of Regulations, 29 CFR part 5 and that such information is correct and complete;
- (2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
- (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the Contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The Contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Federal Transit Administration or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

**(4) Apprentices and trainees**

(i) Apprentices – Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator of the Wage and Hour Division of the U.S. Department of Labor determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees – Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity – The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

**(5) Compliance with Copeland Act requirements** – The Contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this Contract.

- (6) **Subcontracts** – The Contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the Federal Transit Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the Contract clauses in 29 CFR 5.5.
- (7) **Contract termination: debarment** - A breach of the Contract clauses in 29 CFR 5.5 may be grounds for termination of the Contract, and for debarment as a Contractor and a subcontractor as provided in 29 CFR 5.12.
- (8) **Compliance with Davis-Bacon and Related Act requirements** – All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this Contract.
- (9) **Disputes concerning labor standards** – Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.
- (10) **Certification of eligibility** –
  - (i) By entering into this Contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government Contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
  - (ii) No part of this Contract shall be subcontracted to any person or firm ineligible for award of a Government Contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
  - (iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001

15. **Contract Work Hours and Safety Standards:** This Act applies to construction Contracts greater than \$100,000 and, in very limited circumstances, non-construction projects greater than \$100,000.00 that employ laborers or mechanics on public work.

- (1) **Overtime requirements** – No Contractor or subcontractor Contracting for any part of the Contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- (2) **Violation; liability for unpaid wages; liquidated damages** – In the event of any violation of the clause set forth in paragraph (1) of this section the Contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.
- (3) **Withholding for unpaid wages and liquidated damages** – Pace shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such Contract or any other Federal Contract with the same prime Contractor, or any other federally-assisted Contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.
- (4) **Subcontracts** – The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

16. **No Obligation by the Federal Government:** Applicable to all Contracts greater than \$3,000. (1) Pace and the Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying Contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this Contract and shall not be subject to any obligations or liabilities to the Pace, the Contractor, or any other party (whether or not a party



to that Contract) pertaining to any matter resulting from the underlying Contract. (2) The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

17. **Program Fraud and False or Fraudulent Statements or Related Acts:** These requirements are applicable to all Contracts greater than \$3,000.
- (1) The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this Project. Upon execution of the underlying Contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying Contract or the FTA assisted project for which this Contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.
  - (2) The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a Contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. § 5307, the Government reserves the right to impose the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307(n)(1) on the Contractor, to the extent the Federal Government deems appropriate.
  - (3) The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.
18. **Ineligible Contractors and Subcontractors:** Applicable to all Contracts of any value. Any name appearing upon the Comptroller General of the United States' list of ineligible Contractors for federally financed and assisted projects shall not be eligible to act as a subcontractor for the Contractor pursuant to this Contract. In the event the Contractor is on the Comptroller General's list of ineligible Contractors for federally financed or assisted projects, this Contract may be canceled, terminated or suspended by Pace.
19. **Contracts Involving Federal Privacy Act Requirements:** When a grantee maintains files on drug and alcohol enforcement activities for FTA, and those files are organized so that information could be retrieved by personal identifier, the Privacy Act requirements apply to all Contracts greater than \$3,000. The following requirements apply to the Contractor and its employees that administer any system of records on behalf of the Federal Government under any Contract: (1) The Contractor agrees to comply with, and assures the compliance of its employees with, the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. § 552a. Among other things, the Contractor agrees to obtain the express consent of the Federal Government before the Contractor or its employees operate a system of records on behalf of the Federal Government. The Contractor understands that the requirements of the Privacy Act, including the civil and criminal penalties for violation of that Act, apply to those individuals involved, and that failure to comply with the terms of the Privacy Act may result in termination of the underlying Contract. (2) The Contractor also agrees to include these requirements in each subcontract to administer any system of records on behalf of the Federal Government financed in whole or in part with Federal assistance provided by FTA.
20. **Civil Rights:** Applicable to all Contracts greater than \$3,000. The Contractor, for itself, its assignees and successors in interests, agrees that it will comply with the following regulations:
- 1) **Construction Contracts** – For any Contract for construction, the Contractor shall comply with the equal opportunity requirements of 41 CFR, Subsection 60-1.4(b)(1) and Subsection 60-1.4(c); the provisions of Executive Order 11246 Subsection 202 and as set forth in the most current FTA Master Agreement available from the FTA website. The Contractor shall include a citation to said requirements in all subcontracts.
  - 2) **Nondiscrimination** – In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.
  - 3) **Equal Employment Opportunity** – The following equal employment opportunity requirements apply to the underlying Contract:



- (a) Race, Color, Creed, National Origin, Sex – In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60 et seq., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
  - (b) Age – In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § § 623 and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
  - (c) Disabilities – In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.
- 4) The Contractor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.
21. **Patent Rights:** Patent and rights in data requirements for federally assisted projects ONLY apply to research projects in which FTA finances the purpose of the grant is to finance the development of a product or information on Contracts greater than \$3,000. These patent and data rights requirements do not apply to capital projects or operating projects, even though a small portion of the sales price may cover the cost of product development or writing the user's manual. This Agreement shall be subject to the FTA's policy on any invention, improvement, or discovery conceived or first actually reduced to practice in conjunction with planning, research development or demonstration projects as stated in the most current FTA Master Agreement available from the FTA website.
22. **Copyright and Rights in Data:** Patent and rights in data requirements for federally assisted projects ONLY apply to research projects in which FTA finances the purpose of the grant is to finance the development of a product or information on Contracts greater than \$3,000. These patent and data rights requirements do not apply to capital projects or operating projects, even though a small portion of the sales price may cover the cost of product development or writing the user's manual. This Agreement shall be subject to the FTA's policy on copyrights and rights in data with respect to reports and other technical materials developed with in conjunction with planning, research development or demonstration projects. That policy as set forth in the most current FTA Master Agreement available from the FTA website permits the author or grantee to copyright the work but FTA reserves a royalty-free nonexclusive and irrevocable license to reproduce, publish or otherwise use, and to authorize others to use, the work for Government purposes.
23. **Transit Employee Protective Provisions:** The Transit Employee Protective Provisions apply to each Contract greater than \$3,000 for transit operations performed by employees of a Contractor recognized by FTA to be a transit operator.
- (1) The Contractor agrees to comply with applicable transit employee protective requirements as follows:
    - (a) General Transit Employee Protective Requirements – To the extent that FTA determines that transit operations are involved, the Contractor agrees to carry out the transit operations work on the underlying Contract in compliance with terms and conditions determined by the U.S. Secretary of Labor to be fair and equitable to protect the interests of employees employed under this Contract and to meet the employee protective requirements of 49 U.S.C. A 5333(b), and U.S. DOL guidelines at 29 C.F.R. Part 215, and any amendments thereto. These terms and conditions are identified in the letter of certification from the U.S. DOL to FTA applicable to the FTA Recipient's project from which Federal assistance is provided to support work on the underlying Contract. The Contractor agrees to carry out that work in compliance with the conditions stated in that U.S. DOL letter. The requirements of this subsection (1), however, do not apply to any Contract financed with Federal assistance provided by FTA either for projects for elderly individuals and individuals with disabilities authorized by 49 U.S.C. § 5310(a)(2), or for projects for non-urbanized areas authorized by 49 U.S.C. § 5311. Alternate provisions for those projects are set forth in subsections (b) and (c) of this clause.

- (b) Transit Employee Protective Requirements for Projects Authorized by 49 U.S.C. § 5310(a)(2) for Elderly Individuals and Individuals with Disabilities – If the Contract involves transit operations financed in whole or in part with Federal assistance authorized by 49 U.S.C. § 5310(a)(2), and if the U.S. Secretary of Transportation has determined or determines in the future that the employee protective requirements of 49 U.S.C. § 5333(b) are necessary or appropriate for the state and the public body sub-recipient for which work is performed on the underlying Contract, the Contractor agrees to carry out the Project in compliance with the terms and conditions determined by the U.S. Secretary of Labor to meet the requirements of 49 U.S.C. § 5333(b), U.S. DOL guidelines at 29 C.F.R. Part 215, and any amendments thereto. These terms and conditions are identified in the U.S. DOL's letter of certification to FTA, the date of which is set forth Grant Agreement or Cooperative Agreement with the state. The Contractor agrees to perform transit operations in connection with the underlying Contract in compliance with the conditions stated in that U.S. DOL letter.
- (c) Transit Employee Protective Requirements for Projects Authorized by 49 U.S.C. § 5311 in Non-urbanized Areas – If the Contract involves transit operations financed in whole or in part with Federal assistance authorized by 49 U.S.C. § 5311, the Contractor agrees to comply with the terms and conditions of the Special Warranty for the Non-urbanized Area Program agreed to by the U.S. Secretaries of Transportation and Labor, dated May 31, 1979, and the procedures implemented by U.S. DOL or any revision thereto.

(2) The Contractor also agrees to include any applicable requirements in each subcontract involving transit operations financed in whole or in part with Federal assistance provided by FTA.

- 24. **Drug and Alcohol Testing:** This provision applies to all Operational Service Contracts greater than \$3,000. The Contractor agrees to participate in Pace’s drug and alcohol program established in compliance with 49 CFR 655 which if applicable shall be attached as a separate exhibit to this Contract.
- 25. **Incorporation of Federal Transit Administration (FTA) Terms:** The incorporation of FTA terms applies to all Contracts greater than \$3,000. The preceding provisions include, in part, certain Standard Terms and Conditions required by DOT, whether or not expressly set forth in the preceding Contract provisions. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1F or most recent version are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any Suburban Bus Division of the Regional Transportation Authority (Pace) requests which would cause the Suburban Bus Division of the Regional Transportation Authority (Pace) to be in violation of the FTA terms and conditions.
- 26. **Veterans Employment:** Recipients and subrecipients of Federal financial assistance under this chapter shall ensure that contractors working on a capital project funded using such assistance give a hiring preference, to the extent practicable, to veterans (as defined in section 2108 of title 5) who have the requisite skills and abilities to perform the construction work required under the contract. This subsection shall not be understood, construed or enforced in any manner that would require an employer to give preference to any veteran over any equally qualified applicant who is a member of any racial or ethnic minority, female, an individual with a disability, or former employee.

**IDOT/RTA/State Requirements**

- 27. **Illinois Prevailing Wage Act (820 ILCS 130):** It is the policy of the State of Illinois that a wage of no less than the general prevailing hourly rate as paid for work of a similar character in the locality in which the work is performed, shall be paid to all laborers, workers and mechanics employed by or on behalf of any and all public bodies engaged in public works. This Act applies to the wages of laborers, mechanics and other workers employed in any public works, as stated in the Illinois Prevailing Wage Act (820 ILCS 130), by any public body and to anyone under Contract for public works. This includes any maintenance, repair, assembly, or disassembly work performed on equipment whether owned, leased, or rented. Public works is defined as all fixed construction work performed by or on behalf of any public body, paid in whole or in part with public funds.

Only such laborers, workers and mechanics as are directly employed by contractors or subcontractors in actual construction work on the site of the building or construction job, and laborers, workers and mechanics engaged in the transportation of materials and equipment to or from the site, but not including the transportation by the sellers and suppliers or the manufacturer or processing of materials or equipment, in the execution of any contract or contracts for public works with any public body shall be deemed to be employed upon public works. The wage for a tradesman performing maintenance is equivalent to that of a tradesman engaged in construction or demolition.

- 28. **Bid Evaluation Requirements:** In the event a single bid is received, it may be necessary for Pace to conduct a price and or cost analysis of the bid price with the Contractor's full cooperation. The Contractor shall provide all documents requested by Pace to perform the analysis.

29. **The Americans with Disabilities Act:** Applicable to all Contracts greater than \$3,000. The Contractor agrees to comply with, and assure that any subcontractor complies with all applicable requirements of 42 USC 12101 et seq.
30. **Use of Metric Units of Measure and English Language:** All Contract documents, conferences, letters, technical information and drawings provided by the Contractor shall be conducted or offered solely in the English language and using both the U.S. customary system of weights and measures and the Metric units system of weights and measures.
31. **Interest of Members of Congress:** No member of or delegate to the Congress of the United States shall be admitted to any share or part of this Contract or to any benefit arising therefrom.
32. **Financial Assistance Contract:** This Contract is subject to the provisions of the financial assistance Contracts between Pace and other sponsoring agencies which are identified in the Invitation for Bids as FTA, IDOT, and RTA.
33. **State of Illinois Ineligible Contractors and Subcontractors:** The Contractor shall certify that it is not barred from contracting with any unit of State or local government as a result of a violation of either Section 33E-3 or 33E-4 of the Illinois Criminal Code (Ill. Rev. Stat. Chap.38,33E-1,ET.SEQ.)

**BUY AMERICA**

**Certification Requirement for Procurement of Buses, Other Rolling Stock and Associated Equipment**

**Contractor:** This Certification is required to be completed and returned with the solicitation if the offer **EXCEEDS \$150,000** and federal funds are to be utilized. A bidder or offeror must submit to the FTA recipient the appropriate Buy America certification (below) with all bids on FTA-funded contracts, except those subject to a general waiver. Bids or offers that are not accompanied by a completed Buy America certification will be rejected as **non-responsive**. The Buy America requirements flow down to first tier contractors who are responsible for ensuring that lower tier contractors and subcontractors are in compliance.

***Certificate of Compliance with Buy America Rolling Stock Requirements***

The bidder or offeror hereby certifies that it will comply with the requirements of 49 U.S.C. 5323(j)(2)(C), and the applicable regulations in 49 CFR Part 661.11.

**Date:** April 23, 2020  
**Signature:**   
**Company Name:** Motor Coach Industries, Inc.  
**Title:** Executive Vice-President, Sales, Marketing, & Service

***Certificate of Non-Compliance with Buy America Rolling Stock Requirements***

The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j)(2)(C), and 49 CFR 661.11, but it may qualify for an exception pursuant to 49 U.S.C. 5323(j)(2)(A), 5323(j)(2)(B), or 5323(j)(2)(D), and 49 CFR 661.7.

**Date:** \_\_\_\_\_  
**Signature:** \_\_\_\_\_  
**Company Name:** \_\_\_\_\_  
**Title:** \_\_\_\_\_

**CERTIFICATION OF RESTRICTIONS ON LOBBYING**

This Certification is required to be completed and returned with the solicitation if the offer **EXCEEDS \$100,000**. Failure to return this Certification with the solicitation may result in a determination that the offer is non-responsive or unacceptable. The undersigned certifies, to the best of his or her knowledge or belief, that:

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

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal Contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions. The Standard Form-LLL shall be submitted to the Pace Legal Department, Attn: General Counsel who, pursuant to federal regulations, will submit the form(s) to the Federal Transit Administration.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and Contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each failure.

Executed this 23rd day of April, 2020

By:   
(Signature of authorized official)

Patrick Scully  
(printed/typed name)

Executive Vice-President, Sales, Marketing, & Service  
(Title of authorized official)

**CERTIFICATION REGARDING SUSPENSION AND DEBARMENT**

This Contract is a covered transaction for purposes of 49 CFR Part 29. As such, the Contractor is required to verify that none of the Contractor, its principals, as defined at 49 CFR 29.995, or affiliates, as defined at 49 CFR 29.905, are excluded or disqualified as defined at 49 CFR 29.940 and 29.945.

The Contractor is required to comply with 49 CFR 29, Subpart C and must include the requirement to comply with 49 CFR 29, Subpart C in any lower tier covered transaction it enters into. By signing and submitting its bid or proposal, the bidder or proposer certifies as follows:

The certification in this clause is a material representation of fact relied upon by the Suburban Bus Division of the Regional Transportation Authority (Pace). If it is later determined that the bidder or proposer knowingly rendered an erroneous certification, in addition to remedies available to the Suburban Bus Division of the Regional Transportation Authority (Pace), the Federal Government may pursue available remedies, including but not limited to, suspension and/or debarment. The bidder or proposer agrees to comply with the requirements of 49 CFR 29, Subpart C while this offer is valid and throughout the period of any Contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

  
Executive Vice-President  
Sales, Marketing &  
Service  
\_\_\_\_\_  
(Signature and Title of Authorized Official)

**Insurance Requirements – Purchase of Vehicles**

**The Insurance documentation must be submitted, reviewed and approved by Pace, the Suburban Bus Division of the Regional Transportation Authority (further known as Pace) prior to the Contract award. At Pace’s discretion, the bidder or proposer’s failure to submit the required compliant insurance documents may result in a “Not Responsible” determination against your company. Pace also reserves the right to accept or reject the evidence of insurance coverage or other documentation provided at its own discretion.**

The Contractor, Supplier and/or Vendor (further known as *Contractors*) or Subcontractors and/or Independent Contractors (further known as *Subs/Independents*) shall provide and maintain insurance coverage required by this Contract. Evidence of required insurance coverage shall be provided on an **Acord 25** (or equivalent) Certificate of Insurance form. It is the *Contractors’* responsibility to verify that all *Subs/Independents* insurance coverage meets or exceeds the insurance requirements outlined in this exhibit/contract. All insurers must maintain a rating of **A-VII** or better as rated by A. M. Best Company. If an A.M. Best rating is not available due to insurance coverage being underwritten by an alternative Risk Financing Method (i.e. Self-Insurance, Pooling, Captive) then the *Contractors* and/or insurer(s) shall provide **Pace** with the most recent audited financial statement, audit report notes, and any applicable State Insurance Department self-insurance approval documents.

**It is important to note that “Additional Insured” endorsements such as CG 2010 & CG 2037 or CG 2026 or comparable endorsement {General Liability}, CA 2048 {Automobile Liability}, and other policy endorsements (or their equivalents) required by this exhibit shall be submitted to Pace with the Acord 25 Certificate of Insurance before award of contract.**

The *Contractors* shall insert the substance of this Insurance Exhibit in subcontracts under this Contract and shall require all *Subs/Independents* to provide and maintain the insurance required. **It is the Contractors’ sole responsibility to ensure all Subcontractors/Independent Contractors insurance is in compliance with these requirements.**

**Minimum** insurance requirements are those paragraphs below marked with an **X**:

- Certificates of Insurance** shall provide evidence of all required insurance coverage, limits and endorsements and shall be issued to **Pace** for the duration of the contract or agreement term **plus** one additional year. If a *Contractors’* warranty or material warranty applies, evidence of insurance coverage shall be provided to **Pace** for the entire length of *Contractors’* warranty, and/or the length of materials warranty, whichever is greater. The *Contractors’* agent, broker, or insurer shall issue an updated Certificate of Insurance accompanied by required endorsements to **Pace** prior to the insurance policy renewal date each year.
- Workers Compensation and Employer's Liability Insurance** affording the following limits: **Coverage A-** Statutory Benefits and **Coverage B-Employer’s Liability**-\$500,000 Each Accident, \$500,000 Disease-Each Employee, \$500,000 Disease-Policy Limit. Executive Officers, Sole Proprietors, General Contractor’s utilizing Independent Contractor labor, and/or others not required by the Illinois Workers Compensation Act to obtain Workers Compensation insurance coverage agree to execute a **hold-harmless agreement**.
- Workers Compensation Waiver of Subrogation**  
The *Contractors* and its insurer shall agree to waive their rights to subrogate against **Pace** and the Regional Transportation Authority. **Pace** shall be scheduled and/or named on the ISO WC 00 03 13 endorsement or equivalent WC Waiver of Subrogation.
- Commercial General Liability Insurance (Broad Form)** with coverage and limits that meet or exceed the following parameters; coverage is written on an ISO CG 00 01 or other equivalent coverage form with the following limits:
  - Each Occurrence-\$1,000,000
  - General Aggregate-\$2,000,000
  - Products/Completed Operations Aggregate-\$2,000,000
  - Personal & Advertising Injury-\$1,000,000



- With respect to the **Commercial General Liability Insurance**, the **Regional Transportation Authority (RTA)** and **Pace, the Suburban Bus Division of the RTA**, shall be added by endorsement as Additional Insureds on the *Contractor's* CGL policy.
- Business Automobile Insurance** with a Combined Single Limit (CSL) of not less than \$1,000,000 per accident for bodily injury and property damage liability arising from owned, non-owned, and hired vehicles.
- With respect to the **Business Auto Liability Insurance**, the **Regional Transportation Authority (RTA)**, and **Pace, the Suburban Bus Division of the RTA**, shall be added by endorsement as Additional Insureds on the *Contractor's* Auto policy.
- Automobile Physical Damage** with coverage afforded for **Comprehensive perils** including losses from fire, theft, vandalism, falling or flying objects, malicious mischief, lightning, windstorm, water, flood, earthquake, hail, impact with animals, missiles, riot, civil commotion, rising water, and breakage of glass (other than when caused by collision), and; **Collision perils**, including upset or collision with another vehicle, person, or any object including the ground or highway; impact with an object on or in the ground. The Physical Damage coverage limit (valuation) shall be based on the **Replacement Cost** value of the vehicle(s). Replacement Cost is defined as cost to replace new with like kind and quality and zero (\$0) in accumulated depreciation.
- If the *Contractors* are leasing **Pace** property or using **Pace**-owned vehicles/property, and are contractually obligated to insure **Pace**-owned property, the *Contractors'* insurer or agent/broker shall name Pace Suburban Bus Service as the **Loss Payee** Pace shall be provided with a BP 12 03 Loss Payee (or equivalent) endorsement that specifically schedules Pace as a Loss Payee.
- Umbrella Liability Insurance** affording limits of not less than **\$5,000,000** each occurrence and **\$5,000,000** aggregate coverage. Such umbrella coverage shall contain the following policy provisions and/or endorsements: defense, investigation, and supplementary payments "outside" or "in addition to" the policy limits, 30 day Notice of Cancellation, Definition of "Who is an insured" (includes "Any person or organization" that is an insured under any policy of underlying coverage) and the *Contractor* must maintain underlying insurance as scheduled when the Umbrella coverage was bound. **Umbrella Liability Insurance is not required when the Primary General Liability policy limits and the Primary Automobile Liability policy limits are equal to or greater than the combined total of the Primary and Umbrella insurance policy limits requirement.**
- Garage Liability/Garage Keepers Coverage** combining Business Auto Liability and Physical Damage Coverage shall provide the following minimum limits: \$1,000,000 CSL-Garage Liability. Garage Keepers written on a Comprehensive Form shall provide a location limit sufficient to cover the Fair Market Value on new **Pace**-owned vehicles/equipment and Replacement Cost Value on pre-driven **Pace** owned vehicles/equipment and all other non-owned vehicles at the specific storage/repair location. The *Contractor* shall also furnish **Pace** with a copy of the **CA 25 14** broadened coverage endorsement. The Garage Liability policy shall include symbols 30 and 31. The Garage policy shall be written on a **CA 00 05** policy form or its equivalent. If **towing services** are included in the scope of work of the contract with **Pace**, then "On-Hook" Coverage of \$500,000 is also required.

**Notice of Cancellation on all Policies**

The Insurer and/or Agent/Broker shall endeavor to provide the written notice of cancellation to **Pace's** Insurance Liaison **10** days prior to the effective date of cancellation. Failure to do so shall impose no obligation or liability of any kind upon the insurer, its agents or representatives.



**Disclosure of a Deductible or Self-Insured Retention (SIR)**

If your company is self-insured or utilizes a Risk Financing Mechanism in which a deductible or SIR (self-insured retention) exceeds \$25,000, **Pace** reserves the right to request the most recent audited financial statements from the contractor and documents from the State Insurance Department granting self-insurance approval.

**Within five (5) business days of Pace's request and prior to contract award the insurance company, or its representative, shall submit an insurance certificate and corresponding endorsements that meet or exceed Pace's requirements.**

Pace, the Suburban Bus Division of the Regional Transportation Authority  
Attn: Insurance Liaison  
550 West Algonquin Road  
Arlington Heights, IL 60005-4412

FAILURE to comply with **Pace's** Insurance Requirements and provide evidence of insurance coverage as required by contract may result in your bid or proposal being rejected as not responsible. The *Contractors'* failure to carry, maintain and/or document required insurance shall constitute a breach of the contract. Any failure by **Pace** to demand or receive proof of insurance coverage shall not constitute a waiver of *Contractors'* obligation to obtain the required insurance. The *Contractors'* expressly agree that these insurance provisions in no way limit the *Contractors'* responsibilities under other provisions of the Contract, including the hold harmless and indemnification clause. *Contractors'* insurance agent shall, upon request by **Pace**, furnish a copy of the insurance policy addressed to the Insurance Liaison. *Contractors* shall not commence work herein until they have obtained the required insurance and has received **Pace's** approval.

**INVITATION FOR BID NO. 419598  
FORTY FOOT DIESEL POWERED MOBILITY DEVICE ACCESSIBLE  
OVER THE ROAD COACHES  
TECHNICAL SPECIFICATION TS OTR 2020**

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**BACKGROUND**

Pace, the Suburban Bus Division of the Regional Transportation Authority (RTA), is a public transit agency based in Arlington Heights, Illinois, providing fixed route, ADA paratransit, Vanpool/rideshare, Dial-a-Ride and Call-n-Ride services in a six-county region of northeastern Illinois made up of Chicago and its suburbs. Total annual ridership across these services is approximately 40 million. The agency was established as a unit of local government in 1983 via state legislation and began operations a year later. Pace is governed by a 13-member board of directors comprised of current and former suburban mayors or village presidents along with the City of Chicago's Commissioner of the Mayor's Office for People with Disabilities. Pace operates one of the ten largest transit fleets in North America and one of the largest ADA paratransit (accessible transportation for people with disabilities) systems in the world.

**GENERAL****TS 1.0 SCOPE**

These specifications, in terms of performance, represent an over the road coach suited to public commuter transit operations. As spelled out and required by the accompanying Invitation for Bid for this procurement, these specifications are intended to cover the following vehicles:

40-ft. Diesel powered mobility device accessible Over the Road Coach which is ADA and Buy America compliant at the time of delivery.

Quantities, optional quantities and options are as listed on the pricing page for the Invitation for Bid.

**TS 1.1 DEFINITIONS**

The following are definitions of special terms used in this specification.

1. **DBA** - Decibels with reference to 0.0002 microbar as measured on the "A" scale.
2. **Audible Discrete Frequency** - An audible discrete frequency is determined to exist if the sound power level in any 1/3-octave band exceeds the average of the sound power levels of the two adjacent 1/3-octave bands by 4 decibels (dB) or more.
3. **Standee Line** - A line marked across the coach aisle in line with the driver's barrier to designate the forward area which passengers may not occupy when the coach is moving.

4. **Free Floor Space** - Floor area available to standees, excluding ingress/egress areas, area under seats, area occupied by feet of seated passengers, and the vestibule area.
5. **Curb Weight** - Weight of vehicle, including maximum fuel, oil, and coolant; and all equipment required for operation and required by this Specification, but without passengers or driver.
6. **Seated Load** - One hundred fifty (150) pounds for every designed passenger seating position and for the driver.
7. **Gross Load** - Total of curb weight, seated load and standees at one hundred fifty (150) pounds per individual passenger.
8. **SLW (Seated Load Weight)** - Curb weight plus seated load.
9. **GVWR (Gross Vehicle Weight Rated)** - Curb weight plus the maximum vehicle weight to which the coach can be safely loaded.
10. **Driver's Eye Range** - The 95th-percentile ellipse defined in SAE Recommended Practice J941, except that the height of the ellipse shall be determined from the seat at its reference height.
11. **Fireproof** - Materials that will not burn or melt at temperatures less than 2,000°F.
12. **Fire-Resistant** - Materials that comply with Federal motor Vehicle Safety Standard (FMVSS) 571.302 - Flammability of interior materials, or having a flame spread index less than 150 as measured in a radiant panel flame test per ASTM-E162-~~75~~ or current revision.
13. **Human Dimensions** - The human dimensions used are defined in SAE Recommended Practice J833.

## TS 1.2 ABBREVIATIONS

The following are abbreviations (acronyms) used in these specifications:

- ASTM:** American Society of Testing and Materials
- SAE:** Society of Automotive Engineers
- ANSI:** American National Standards Institute
- ASHRAE:** American Society of Heating, Refrigerating, and Air Conditioning
- SPI:** Society of the Plastics Industry.
- USDHEW:** United States Department of Health, Education, and Welfare

**JIC:** Joint Industrial Council.

**BMCS:** Bureau of Motor Carrier Safety.

**FMVSS:** Federal Motor Vehicle Safety Standards

**ABS:** Antilock Braking System

**TS 1.3 CLASSES OF FAILURES - *Classes of failures are listed below:***

**Class 1: Physical Safety.** A failure that could lead directly to passenger or driver injury and represents a severe crash situation.

**Class 2: Road Call.** A failure resulting in an en route interruption of revenue service. Service is discontinued until the coach is replaced or repaired at the point of failure.

**Class 3: Coach Change.** A failure that requires removal of the coach from service during its assignments. The coach is operable to rendezvous point with a replacement coach.

**Class 4: Bad Order.** A failure that does not require removal of the coach from service during its assignments but does degrade coach operation. The failure shall be reported by driver, inspector, or hostler.

**TS 1.4 LEGAL REQUIREMENTS**

The coach shall meet all applicable Federal Motor Vehicle Safety Standards and regulations as established by the U.S. Department of Transportation. The manufacturer shall comply with all applicable Federal and State regulations. In event of any conflict between the requirements of this Specification and any applicable legal requirement, then the legal requirement shall prevail.

A current State of Illinois Safety Inspection sticker shall be provided and applied at the time of delivery.

**TS 1.5 OVERALL REQUIREMENTS**

**TS 1.5.1 DIMENSIONS**

**TS 1.5.1.1 PHYSICAL SIZE**

With the exceptions of exterior mirrors, marker and signal lights, bumpers, flexible portions of the bumper, fender skirts, rub rail, and cameras the coach shall have the following overall dimensions.

**Length:** .....40 feet, 0 inches (+12 / -1 in.)

**Width:** .....8 feet, 6 inches (+0 / -1 in.)

**Height:** .....137 inches – maximum loaded or unloaded.

**First Step Height:** ....16.5 inches – Maximum (revised from 15.5)

**TS 1.5.2 UNDERBODY CLEARANCES**

The coach provided shall meet the following underbody clearances:

- Approach angle** .....9.50°
- Breakover angle** .....8.50° (*measured per SAE J689*)
- Departure angle**.....6.20°
- Ground clearance** ...10.00 inches
- Axle clearance (as measured)**.....6.50 inches

**TS 1.5.3 WEIGHT AND AXLE LOADING**

Each vehicle, at a capacity load, shall not exceed the gross vehicle weights or maximum axle weights specified. In the interest of economy in construction and operation it shall be the goal to manufacture the coach as light as possible without degradation of structure, performance, appearance, comfort and reliability. Total vehicle weight shall not exceed the gross vehicle weight rating or axle weight rating at ground as specified.

**TS 1.5.4 CAPACITY**

Rated passenger capacity of the coach shall be as outlined below. Provisions to secure two wheelchair passengers shall also be provided. The overall seating capacity may be reduced when the securement positions are being utilized.

*40 foot/102 inch coach*..... 49 seats

**TS 1.5.5 SERVICE LIFE AND MAINTENANCE**

**TS 1.5.5.1 SERVICE LIFE**

The coach shall be designed to operate in commuter service for at least 12 years or 500,000 miles of revenue service whichever comes first.

**TS 1.5.5.2 MAINTENANCE AND INSPECTION**

Scheduled maintenance tasks shall be related and shall be grouped in maximum mileage intervals. Routine scheduled maintenance actions, such as filter replacement and adjustments, shall not be required at intervals of less than 6,000 miles, except for routine daily service performed during the fueling operations. Higher levels of scheduled maintenance tasks shall occur at even multiples of mileage for lower level tasks.

The manufacturer shall provide a preventive maintenance schedule covering all components upon delivery of the first production vehicle. Each schedule shall be complete and shall adhere to frequency intervals considered normal industry standards.

**TS 1.5.5.3 MEAN MILEAGE BETWEEN FAILURES**

The following are design goals for mean mileage between failures by failure class, provided that all specified preventive maintenance procedures are followed:

**Class 1: Physical Safety.** Mean mileage shall be greater than 1,000,000 miles.

**Class 2: Road Call.** Mean mileage shall be greater than 20,000 miles.

**Class 3: Coach Change.** Mean mileage shall be greater than 16,000 miles.

**Class 4: Bad Order.** Mean mileage shall be greater than 10,000 miles.

#### **TS 1.5.5.4 ACCESSIBILITY**

All systems or components serviced as part of periodic maintenance or whose failure may result in Class 1 or Class 2 failures shall be readily accessible for service and inspection. Removal or physical movement of components unrelated to the specific maintenance and/or repair tasks involved shall be minimized.

#### **TS 1.5.5.5 INTERCHANGEABILITY**

Components with identical functions shall be interchangeable except for windows and baggage bay doors. Components with non-identical functions shall not be, or appear to be, interchangeable.

#### **TS 1.5.6 OPERATING ENVIRONMENT**

The coach shall achieve normal operation in temperature ranges of -10°F to 110°F, at relative humidity between 5% and 100% and at altitudes up to 5,000 feet above sea level. Degradation of performance due to atmospheric conditions shall be minimized at temperatures below -10°F and above 110°F or at altitudes above 5,000 feet. Special equipment or procedures may be employed to start the coach after a 12 hour or more exposure to temperatures below +30°F without the engine in operation. Speed, gradability, and acceleration performance requirements shall be met at, or corrected to, 85°F, 29.00 inches Hg, dry air. Performance degradation at conditions other than the test standard shall not exceed 1% for each 3°F and 4% for 1,000 feet of altitude above the standard.

#### **TS 1.5.7 MATERIALS AND CONSTRUCTION**

For economy in maintenance, it is essential that parts and units be arranged so that rapid assembly and disassembly will be possible for the coach being provided. The dimensions of all parts, unless particularly specified, will be in accordance with current standards of the Society of Automotive Engineers. All units or parts not specified shall be Manufacturer's standard units or parts and shall conform in material, design and workmanship to industry standards and shall meet or exceed all Federal and State motor vehicle safety standards. No advantages shall be taken by the Manufacturer in the omission of any parts or details that make the coach complete and ready for service, even though such parts or details are not mentioned in these specifications.

Workmanship throughout shall conform to the high standard of commercially accepted practice for the class of work and shall result in a neat and finished appearance. All exposed surfaces and edges shall be smooth, free from burrs and other projections, and shall be neatly finished. Exposed metal surfaces, prior to paneling or covering shall be properly prepared and coated with protective material to insure against corrosion or deterioration.

All lubrication points, unless otherwise specified, shall be capable of accepting a high pressure grease gun operated on fittings that permit grease to travel into the lubrication point but does not permit the grease to escape and designed so that when the grease gun is withdrawn, there is a positive barrier preventing dirt from entering the fitting. These fittings shall be of one manufacture and shall be accessible for a grease gun while the vehicle is being serviced on either a lift or a pit.

## **TS 2.0 BODY**

### **TS 2.1 DESIGN**

The coach shall have a clean, smooth, simple design, primarily derived from coach performance requirements and passenger service criteria. Body construction shall not be of a body on chassis type. The exterior and body features, including grilles and louvers, shall be shaped to allow complete and easy cleaning by automatic washing equipment without snagging washer brushes. The retention of water and dirt in or on body feature or the freezing or bleeding out of this dirt and water after leaving the washer shall be minimized. Body and windows shall be sealed to prevent leaking of air, dust, or water under normal operating conditions and during cleaning in automatic washers for the service life of the coach. Accumulation of spray and splash on any window of the coach generated by its wheels on a wet road shall be minimized. Corners, especially at windows, shall be rounded. The undercarriage of the coach shall be sealed off to the maximum extent practicable to significantly reduce the intrusion of road spray.

### **TS 2.2 MATERIALS**

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

### **TS 2.3 FINISH AND COLOR**

All exterior surfaces shall be smooth and free of wrinkles and dents. Exterior surfaces to be painted shall be properly cleaned and primed as appropriate for the paint used, prior to application of paint to assure a proper bond between the basic surface and successive coats of original paint for the service life of the coach.

Paint utilized on the front, rear and sides shall closely match Reflex Blue PPG #18618 FDGU or approved equal, the roof shall be the manufacturers standard gloss white polyurethane enamel or approved equal, that exhibits excellent color and gloss retention, chip, abrasion, stain and mar resistance, chemical and solvent resistance and excellent cleaning characteristics per industrial standards. Paint shall be applied smoothly and evenly with the finished surface free of dirt, runs, sags, "orange peel"-type pebbled surface, and other imperfections.

All exterior finished surfaces shall be impervious to diesel fuel, gasoline, and commercial cleaning agents such as soaps, detergents and degreasing compounds. Finished surfaces shall not be damaged by controlled applications of commonly used graffiti-removing chemicals.

## **TS 2.4 NUMBERING AND SIGNING**

These coaches represent a premium and special service for Pace and the manufacturer shall allow for engineering time for design of a revised exterior elevation paint and logo marking scheme. Monograms, numbers and other signing shall be applied to the inside and outside of the coach as required. Emergency exit information shall be provided in both English and Pictograms. Special signs and decals as required by this Specification shall be applied to the interior and the exterior of the coach. The installation of all decals shall be professional.

Signs and decals provided shall be in compliance with the ADA requirements defined in 49 CFR Part, Subpart B, 38.27.

Preliminary sizes and location for these signs and decals shall be established during pre-production meetings with the contractor.

Decals and reflective vinyl striping may not be applied until it has been demonstrated by random sample installation of decal material that the paint or finish has completed gassing. The area decals will be applied to shall be wiped with a recommended cleaner/degreaser.

All exteriors and some interior signs, logos, fleet numbers and reflective striping shall be durable, fade-, chip-, and peel-resistant. All decals and striping shall be pressure-sensitive material with air channel material with control tack and be pre-spaced on application tape.


International symbols or pictograms shall be utilized to replace wording as required by Pace.

The completed installation shall be free of all imperfections including wrinkles, dirt, oils and bubbles. The decals are to be individually plotter machine cut, stacked or die cut shall not be permitted. The contractor shall provide and install:

#### **TS 2.4.1 PARTIAL WRAP**

The Contractor will provide for sub contract who will work with Pace to design, produce and install a partial wrap as shown in Pace Wrap Exhibit A. Wrap materials and installation shall be warranted to be free of defects for a minimum of 36 months



<b>Required Decals and Information Plates</b>			
<b>Item</b>	<b>Description</b>	<b>Locations</b>	<b>Qty.</b>
1	Pace logo	Front, rear, top, right and left	5
2	Fleet numbers 6"-white	Front, both sides at front, both sides at rear and at rear	8
3	Fleet number 27.5"-blue	Roof	1
4	Fleet number 4"- white	Interior front as directed	1
5	Fleet number 2"- white	Inside of fuel door	1
6	Type of fuel *	Inside of fuel door	1
7	Priority seating with pictogram *	As required by regulation Pace art is work required	6
8	Coach kneels pictogram	Exterior as directed	1
9	 12"-white	Near Lift door	1
10	RTA logo-8"	Each side as directed	2
11	Standee Line*	As required by regulation	1
12	Pictograms for No Eating No Smoking No Radio Playing No Weapons No Open Strollers*	As directed	4
13	Pace self-insurance*	Operator's area	1
14	Roof egress instruction**	Roof hatch	2
15	Emergency egress	As required by regulations	As required

Item	Description	Locations	Qty.
	Pictograms**		
16	Battery Disconnect	Exterior battery compartment door	1
17	Instructions for operating securement systems with pictograms*	Mobility Aid Securement area	2
18	Surge tank warning with pictogram*	Near service point	1
19	Warning not to weld on coach before disconnecting	Inside of battery compartment	1
20	Pictogram for Do not speak to Operator while coach is in motion*	Interior as directed	1
21	Pictogram for Do not cross in front of coach after exiting*	Interior as directed	1
22	8.5" X 11" American Flag	As directed	2
23	Welcome Aboard	As directed	1
24	Watch Your Step* with pictogram	As directed	2
25	Fleet number with Braille, stainless steel	As directed	2
26	Passenger Restraint Message*	Securement Areas	2
27	Use of Restraints Message*	Securement Areas	2
28	Do Not Turn Right in Front of – Pictogram	Rear Exterior	1

Item	Description	Locations	Qty.
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\* Indicates information is to be photo engraved, in a contrasting color, on an anodized aluminum plate. These plates are to have foam adhesive backing and be riveted in position.

\*\* Indicates ALL emergency egress instructions shall be printed on photo luminescent material.

Note-1 Any and all other printed type decals are to be made using UV resistant inks and have a high gloss finish.

Note-2 ALL fleet numbers are four digits

**TS 2.5 PEDESTRIAN SECURITY**

Exterior protrusions greater than 0.250 inches and within 80 inches of the ground shall have a radius no less than the amount of the protrusion. The left and right side rear view mirrors, windshield washer nozzles and required lights and reflectors are exempt from the protrusion requirement. Grilles, doors, bumpers and other features on the sides and rear of the coach shall be designed to minimize the ability of unauthorized riders to secure toeholds or handholds.

**TS 2.6 STRUCTURE**

**TS 2.6.1 STRENGTH AND FATIGUE LIFE**

The structure shall be of a sufficiently strong and efficient design to withstand the conditions of commuter service throughout the service life of the coach. The design shall incorporate all severe service, heavy-duty features available from the contractor.

**TS 2.6.2 DISTORTION**

The coach at GVWR and under static conditions, shall not exhibit deformation or deflection that impairs operation of doors, windows, or other mechanical elements. Static conditions include the vehicle at rest with any one wheel or dual set of wheels on a 6 inch curb or in a 6 inch deep hole.

**TS 2.6.3 RESONANCE**

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

**TS 2.6.4 MATERIAL**

Reinforced fiberglass and plastic materials shall be excluded from structural body construction, except for replaceable panels or doors and for non-load bearing front and rear roof caps and the front lower panel below the windshield and the A-pillar covers and transom panels.

**TS 2.6.5 CORROSION**

The coach shall resist corrosion from atmospheric conditions and road salts. It shall maintain structural integrity and nearly maintain original appearance throughout its service life, provided it

is maintained in accordance with the procedures specified in the service manual. All exposed body panels above and below the floor line shall be aluminum or stainless steel except for the front end upper and lower panels, the rear end upper panels and the upper sidewall panel which are made of fiberglass or galvanized steel. Materials exposed to the elements and all joints and connections of dissimilar metals shall be corrosion-resistant and shall be protected from galvanic corrosion. Bidders proposing a combination of steel tubing and stainless steel tubing for frame construction are required to use stainless steel tubing of comparable cross-section. Proposals shall contain provide the manufacturer's complete corrosion protection plan including a specific identification and illustration of structural and exterior material and their relative corrosion resistance, and will be subject to Pace approval at Pre-Production meetings.

All frame members below the passenger floor that are subject to road splash and are less than 0.10 inch shall be stainless steel for maximum corrosion protection. All other frame members exposed to splash are to be High Strength Low Alloy steel and are to be 0.10 inch thick minimum and shall be coated with permanent undercoating, on all surfaces exposed to road splash for maximum corrosion protection.

Floor supports in the passenger and driver's area, the sidewall structures and roof structures that are not exposed to road spray shall be High Strength Low Alloy and primed prior to incorporation into the coach assembly.

The floor supports and sidewall components shall be painted.

Outer sidewall panels above the passenger floor and below the windows shall be galvanized steel, pre-primed. The roof panels shall be pre-primed aluminum both sides and the front and rear roof caps fiberglass.

The upper rear engine door and louvers may be fiberglass panels mounted to stainless steel frames with powder coated aluminum screens. The upper side corner panels may be fiberglass with powder coated aluminum screens.

The wheelchair lift door may be made of an aluminum frame or other acceptable lightweight material and aluminum exterior panel.

Non-structural underbody panels used for baggage bay floors and to retain insulation in other areas shall be protected using approved undercoated aluminum or may be a combination of stainless steel and composite materials. for maximum corrosion protection. In the wheel well areas, non-structural closeout panels shall be stainless steel.

Before assembling, all metal body parts must be given a thorough anti-corrosion treatment. Joints between dissimilar metals shall be properly insulated with an inert plastic tape to avoid corrosion due to electrolytic action. All nuts, bolts, clips, washers, clamps, and like parts shall be zinc or cadmium plated, phosphate coated, black oxide coated, stainless steel, or nylon to prevent corrosion. All exterior joints and seams must be sealed.

Dissimilar metals must be separated by a non-conductive barrier.

*Non-Conductive Barriers may consist of one of the following:*

- Black elastic compound tape
- Mylar tape
- Double-sided structural adhesive tape

Where tape barriers are not feasible an appropriate sealant shall be used to provide a protective barrier and a water tight seal. This sealer must be used on all panels and assemblies that are susceptible to water leaks.

### **TS 2.6.6 TOWING**

Towing devices shall be provided and be permanently mounted on the front and rear of the coach. The coach may be towed from the front only, but can be recovered from the rear. Recovery shall mean to move the coach into the clear so it can be hooked up and towed from the front. Lift and tow is not required.

Front towing device shall withstand, without permanent deformation, tension loads up to 1.2 times the curb weight of the coach within 20° of the longitudinal axis of the coach. Towing device shall accommodate a crane hook with a 1-inch throat. A minimum of two steel rear skid plates measuring approximately 15.2 x 3.3 inches shall be welded to the underside of the engine rails. Skid plate design shall be durable construction to adequately protect mechanical or other body components from damage due to the coach bottoming out.

### **TS 2.6.7 JACKING & HOISTING**

It shall be possible to safely jack up the coach, at curb weight, with an 8.5-inch-high hydraulic hand jack or a 10-ton floor jack when a tire or dual set is completely flat and the coach is on a level, hard surface. Jacking from a single point shall permit raising the coach sufficiently high enough to remove and reinstall any wheel and tire assembly. The coach shall be fitted with jacking pads for each tire/wheel locations and shall permit easy and safe jacking with the flat tire or dual set on a 3.5-inch high run-up block not wider than a single tire. The coach will withstand such jacking at any one or any combination of wheel locations without permanent deformation or damage. The coach axles or jacking plates shall accommodate the lifting pads of a post hoisting system. Jacking plates shall be approximately 2.00 inches square, with a turned-down flange not less than 0.5 inch deep on each side. Other pads shall be provided to support the coach on jack stands independent of the hoist.

### **TS 2.6.8 FIRE PROTECTION**

The passenger and engine compartments shall be separated by a bulkhead(s) which shall, by utilization of fire-resistant materials in its construction, be a firewall. This firewall shall preclude or retard propagation of an engine compartment fire into the passenger compartment. Only necessary openings shall be allowed in the firewall, and these shall be fire resistant. Any passageways for climate control system air flow shall be separated from the engine compartment by fire resistant material. Piping through the center tunnel bulkhead shall be copper, steel, nylon air brake tubing (for air and fuel), PVC (closed conduit) or brass and shall be sealed with fire-

resistant material at the firewall. Wiring may pass through the bulkhead only if connectors or other means are provided to prevent or retard fire propagation through the firewall. The conduit and bulkhead connectors shall be sealed with fire resistant material at the firewall. Engine access panels in the firewall shall be fabricated of fire resistant material and secured with fire resistant fasteners. These panels, their fasteners, and the firewall shall be constructed and reinforced to minimize warping of the panels during a fire that will compromise the integrity of the firewall. The coach body shall be adequately sealed to prevent the intrusion of smoke, fuel, and fumes into the coach interior.

### **TS 2.6.9 EXTERIOR AND APPLIED PANELS**

**Roof Panels** - Front roof cap and rear crown panels shall be nominal 0.13-inch-thick fiberglass-reinforced, molded plastic incorporating molded indentations for the marker, clearance and identification lights. Main roof panels shall be 16 gauge, nominal 0.05 inch, high tensile aluminum primed with chromate free epoxy. Roof panels shall be bonded to the roof structure with polyurethane adhesive.

**Front Panels** - The front body panel below the windshield shall be of one-piece molded fiberglass. A removable molded fiberglass trim fascia shall be provided under the windshield. It shall include molded recessed housings for the headlamp, turn signal and clearance lamp assemblies, and identification and clearance lamps.

#### **TS 2.6.9.1 STRENGTH AND INSTALLATION**

Exterior panels above and below the rubrail may be structural components. Panels shall be secured to structural members and shall have a smooth finish with no sharp edges.

#### **TS 2.6.9.2 REPAIR AND REPLACEMENT**

Exterior panels below the rubrail shall be divided into sections that are repairable or replaceable by a mechanic. Baggage doors shall be two part with the joint at or below the rubrail.

#### **TS 2.6.9.3 RAIN GUTTERS**

Gutters shall be provided to minimize water flowing from the roof onto the side windows and passenger doors.

#### **TS 2.6.9.4 LICENSE PLATES**

Mounting areas shall be provided to mount a standard size U.S. license plate on the front and rear of the coach. Provision shall be made to illuminate the surface of the rear license plate.

#### **TS 2.6.9.5 RUBRAILS**

Rub rails shall have a minimum height dimension of 2.50 inches and shall be composed of flexible, resilient material to protect both sides of the coach body from damage caused by minor sideswipe accidents. The rubrail may be discontinued at doorways and the condenser intake grille. A damaged portion of the rubrail shall be replaceable without requiring removal or replacement of the entire rubrail.

**TS 2.6.9.6 MOLDINGS**

**Sash Moldings** – Painted aluminum sash moldings shall be installed along the bottom length of the passenger windows.

**Belt Moldings** – Painted Aluminum belt moldings shall be installed along the left and right hand belt lines of the coach.

**TS 2.6.9.7 PARCEL RACKS**

A minimum 10 module parcel rack without dividers and compartment doors shall be furnished over all two-passenger seating positions except in the wheelchair door area. Retention cords shall run the length of the rack housing except where air conditioning components are housed. These compartments will have dividers and locking doors. The parcel rack edge, running along the full length of the aisle, shall incorporate a handhold for use by standees. Passenger headroom measured from the rack end to the top of the seat headrest, shall be a minimum 17-inches. Interior window post caps shall be ABS, thermo formed plastic, off-white in color to provide a clean finished appearance. The interior of the rack shall be vinyl or carpet covered aluminum to complement the interior. Parcel racks shall be supported by polycarbonate glass filled hangers spaced approximately 40 to 48 inches apart. Total capacity shall be a minimum 109 ft.<sup>3</sup> to allow for ample storage space for carry-on items.

Passenger service modules mounted on the underside of the parcel rack shall include individually controlled and adjustable LED passenger reading lights, and an exit signal push button, red in color and individual air distribution outlets receiving air from the coach HVAC system. These outlets shall be adjustable from fully closed to full open position. A minimum of fifteen (15) ~~twenty-six (26)~~ 5.0 inch, 35 watt, 4-ohm speakers shall also be provided in the cluster panels for the driver controlled public address system. Speakers shall broadcast, in a clear tone, announcements that are clearly perceived from all seat positions at approximately the same volume level. Passengers utilizing the securement systems shall be provided identical amenities as provided for all other passengers except that the parcel rack shall be deleted in the area of the wheelchair lift door. Separate and independent notification will be provided on the dashboard indicator panel for stop request notification from securement positions.

**TS 2.6.9.8 UNDERFLOOR BAGGAGE COMPARTMENTS**

Full width under floor baggage compartments shall be provided between the front and rear axles. Each compartment shall be separated by an aluminum panel except the front and rear bulkheads shall be stainless steel. The compartment doors shall be a two part with the joint at or below the rubrail, fully sealed vertical lift pantograph type. Each door shall include an aluminum or stainless-steel outer panel. Doors shall be spring counter balanced for ease of operation. All baggage doors shall be equipped with air locks. Each baggage door shall have a 4.0 x 10 inch flush mounted breakaway type latch handle located with a center point approximately 38 inches off the ground.

Each under floor compartment shall be pressurized and illuminated automatically with two (2) LED lamps when the doors are opened. The lamp fixtures shall be sealed to preclude the intrusion of dust and moisture into the fixture. The floor of the baggage compartments shall be a composite.

**TS 2.7 INTERIOR****TS 2.7.1 HEADROOM**

Headroom above the aisle shall be no less than 78 inches.

**TS 2.7.2 DRIVER'S BARRIER**

A barrier or bulkhead between the driver and street side front passenger seat shall be provided. The barrier shall eliminate glare and reflections from interior lighting in the windshield directly in front of the barrier during night operation.

The driver's barrier shall be constructed of opaque .472 inch thick acrylic glazing. The barrier shall be a shatter-proof acrylic sheet that meets AS standards AS-4 or AS-5. The glazing shall be indelibly marked with the manufacturer's name and type of material.

The drivers barrier shall extend from below the level of the passenger or driver seat cushion, whichever is lower, to above the level of the seated driver's head and shall fit within 1.5 inches from the coach side window/wall to prevent passengers from reaching the driver or his/her personal effects. The barrier design shall accommodate a minimum of 9.05 inch fore and aft travel of the specified operator's seat.

On the aisle side, the barrier shall be cut out from the vertical stanchions to permit passengers to use the stanchion as a handhold. Any panels above and below the glazing shall be complementary in color to the sidewall material.

**TS 2.7.3 MODESTY PANELS**

Sturdy modesty panels constructed of durable, unpainted, corrosion-resistant material complementing the interior trim shall be provided at the rear of the step well. The modesty panel and its mounting shall withstand normal kicking, pushing, and pulling loads of 200-pound passengers without permanent visible deformation.

**TS 2.7.4 REAR BULKHEAD**

The rear bulkhead paneling shall be contoured to fit the ceiling, side walls and seat.

**TS 2.7.5 CONSTRUCTION**

Interior panels may be integral with, or applied to, the basic coach structure. They shall be decorated in accordance with and compliment the interior specified. Use of moldings and small pieces of trim shall be minimized, and all parts shall be functional. Panels shall be of backed melamine, vinyl-clad aluminum or vinyl-clad steel. Front and rear closures shall be fiberglass with color molded in, and there shall be no painted surfaces. The lower sidewall shall be Melamine covered panels or approved equal, sectionalized for ease of repair.

**TS 2.7.6 FASTENING**

Interior panels shall be attached so that there are no exposed edges or rough surfaces. Panels and fasteners shall not be easily removable by passengers. Interior trim fasteners, where required, shall



be rivets, Phillips, or tamper-proof screws. Removal of all interior fasteners, except for rivets, shall only require the use of two tool types to remove.

## **TS 2.7.7 FLOOR**

### **TS 2.7.7.1 STRENGTH**

The floor deck may not be integral with the basic structure but shall be mounted on the structure securely to prevent chafing or horizontal movement. Sheet metal screws shall not be used to retain the floor. All floor fasteners shall be secured and protected from corrosion for the service life of the coach. The floor deck shall be reinforced as needed to support passenger loads. At GVWR, the floor shall have an elastic deflection of no more than 0.375 inches from the normal plane. The floor shall withstand the application of 3.0 times gross load weight without permanent detrimental deformation.

### **TS 2.7.7.2 EDGES**

The floor shall be essentially a continuous flat plane, except at the step well. Where the floor meets the walls of the coach, the surface edges shall be blended with a circular section of radius not less than 1 inch and a molding or cover shall prevent debris accumulation between the floor and wall.

Interior flooring shall be flat throughout except for an 8 ft. long welded ramp in the aisle section at the front which is sloped 5.35° and has a 3 inch riser under the number 1 RH and number 1 LH passenger seats. The floor is attached to the under frame with adhesive and mono-bolt rivets. Wheel housings may not extend above floor line.

Access openings in the floor shall be sealed to prevent entry of fumes and water into the coach interior. Flooring material shall be flush with the floor and shall be edge-bound with stainless steel to prevent the edges from coming loose. Access openings may be symmetrical if the fasteners are arranged to ensure alignment of the flooring. Fasteners shall be flush with the floor when secured.

Rubber flooring adhesion procedure includes butt cut type edges that are securely bonded to the floor with a waterproof adhesive. Flooring areas which are edge-bound with stainless steel shall include the sidewall on each side, the ramp in the center aisle, the base of rear cross seat, the step up under the number 1 seat, the driver's modesty panel and the RH front passenger's modesty panel.

### **TS 2.7.7.3 FLOOR PROTECTION**

The composite floor, as assembled including the sealer, attachments, and covering, shall be waterproof, non-hygroscopic, resistant to heat, dry rot, mold growth, and impervious to insects. The floor shall be no less than one half-inch thick and subject to Pace approval at Pre-Production meetings.

## **TS 2.7.8 STEPS AND STEPWELL**

### **TS 2.7.8.1 STEPS**

There shall be no more than 4 steps and no step shall be located between the vestibule and passenger compartment. A ramp shall be provided in this area with the rate of rise not to exceed 0.75 inch per foot with a maximum vertical rise of 9.0 inches.

All step treads shall be of uniform depth no less than 11 inches and a uniform height of no less than 9.5 inches. The plane of the step treads shall be parallel to the plane of the floor. Treads shall be covered with flooring that shall remain effective in all weather conditions. Color of the tread covering shall match the vestibule flooring. The edge of the vestibule floor shall have no overhang at the step riser. The edge of the vestibule floor and the edge of each of the step treads shall have a bright, contrasting white band, 2 inches wide, the width of the step. This band shall be uniform in width across the entire step and vestibule edge.

#### **TS 2.7.8.2 STEP WELL CONSTRUCTION**

Step well shall be constructed entirely of stainless steel. The steps shall simultaneously support 300 pound loads evenly distributed over the center half of each step tread without permanent deformation and with elastic deflection of no more than 0.0625 inches. Each step tread shall support a load of 500 pounds evenly distributed over the center half of the tread without permanent deformation. A minimum 1.0 inch thick self-adhesive insulation shall be provided behind the step well area for added control of interior temperature variances and to minimize road noise.

#### **TS 2.7.9 WHEEL HOUSING**

##### **TS 2.7.9.1 CONSTRUCTION**

Wheel housings shall be constructed of stainless steel. Wheel housing, as installed and trimmed, shall withstand impacts of a 2-inch steel ball with at least 200 foot-pounds of energy without penetration.

##### **TS 2.7.9.2 CLEARANCE**

Enough clearance and air circulation shall be provided around the tires, wheels, and brakes to preclude overheating. Tire chain clearance shall be provided on all outer drive wheels in accordance with SAE Information Report J683. Interference between the tires and any portion of the coach shall not be possible in maneuvers up to the limit of tire adhesion with weights from wet to GVWR.

##### **TS 2.7.9.3 FENDER SKIRTS**

Front and rear wheel wells shall be fully skirted with rubber to minimize spray and splash. The fender skirts shall be damage resistant and easily replaceable. They shall be flexible if they extend beyond the allowable body width. Wheels and tires shall be removable without disturbing the fender skirts.

##### **TS 2.7.10 SPLASH APRONS**

Splash aprons, composed of 0.25 inch minimum composition or rubberized fabric or 0.188 inch nylon reinforced rubber, shall be installed behind each front wheel and the rearmost wheels and shall extend downward. Apron widths shall be no less than tire widths. Splash aprons shall be bolted to tapping plates which are welded to the coach understructure. The tapping plates shall support the splash apron across its entire width. Splash aprons and their attachments shall be

inherently weaker than the structure to which they are attached. Splash aprons and their attachments shall not be included in the road clearance measurements. Other splash aprons shall be installed where necessary to protect coach equipment.

#### **TS 2.7.11 PASSENGER ENTRANCE DOOR**

The passenger door shall be an electric controlled, air powered transit type two section bi-part door with a switch located to the left of the operator. An exterior remote external control switch shall also be located in a side wall pocket by the entrance door.

The door shall have positive automatic air lock with overrule. The air lock will be automatically actuated by a micro switch when the door is in the closed position.

The non-symmetrical door will have a clear opening width of 30 inches up to a height of 44 inches. The clear door opening height will be 84.5 inches.

Door projection shall not exceed 7 inches out from the side of the coach while in the fully open position and shall not exceed 10 inches while going through the opening and closing cycle. The forward front door leaf leading edge shall rest within one inch of the front bumper when fully opened.

All door glazing shall be 0.250 inch laminated safety glass tinted the same as the windshield and indelibly marked AS-2. Door glazing shall make up approximately 50% of the surface area of the door.

#### **TS 2.7.12 SERVICE COMPARTMENTS AND ACCESS DOORS**

##### **TS 2.7.12.1 INTERIOR**

Access for maintenance and replacement of equipment shall be provided by panels and doors that appear to be an integral part of the interior. Removal of fixtures or equipment unrelated to the repair task to gain access shall be minimized. Access doors, if hinged, shall be hinged with props, as necessary, to hold the doors up and out of the mechanic's way with the exception of the destination sign box door which hinges down and is held by straps in the open position. Panel fasteners shall be standardized so that only two tools are required to service all special fasteners within the coach. These fasteners shall be captive in the panel except for the engine compartment and antenna access hatches. Access doors for the door actuator compartments shall be secured with hand screws or latches, and shall be sealed to prevent entry of mechanism lubricant into the coach interior. All hinges and props must be designed to preclude accidental closure when the panels are opened.

##### **TS 2.7.12.2 EXTERIOR**

Vertically hinged doors shall be used for the engine compartment and for all auxiliary equipment compartments including doors for checking the quantity and adding to the engine coolant, engine lubricant, transmission fluid and the windshield washer reservoir. The upper engine radiator/C.A.C. compartment door shall be vertically hinged with a locking latch located behind the engine compartment doors. Access to these compartments shall be from outside the coach.

Access openings shall be sized for easy performance of tasks within the compartment including tool operating space. Access doors shall be of rugged construction and shall be capable of withstanding severe abuse throughout the life of the coach. They shall close flush with the body surface. All service/maintenance doors, excluding baggage compartment doors, shall be hinged at the top or on the forward edge and shall be prevented from coming loose or opening during transit service or in coach washing operations. Doors with top hinges shall have security props stored behind the door or on the door frame. All access doors (except vertically hinged access doors) shall be sufficiently retained in the open position by security props or counterbalancing, as with baggage compartment doors. Springs and hinges shall be corrosion-resistant and shall last throughout the service life of the coach. Latch handles shall be sized to provide an adequate grip for opening. Large access doors shall hinge up and out of the way or fold flat against the coach body and shall be easily operable by one person. These doors, when opened, shall not restrict access for servicing other components or systems. Retention devices utilized to hold the engine compartment access doors in the open position shall be heavy duty and designed to last the service life of the coach.

## **TS 2.8 OPERATING COMPONENTS**

### **TS 2.8.1 DOORS**

#### **TS 2.8.1.1 CONTROL**

Operation of, and power to, the passenger door shall be completely controlled by a switch located near the driver to the left of the steering wheel. A control or valve in the driver's compartment shall shut off the power to, and/or dump the air from the front door mechanism to permit manual operation of the front door with the coach shut down. A toggle switch on the exterior of the coach shall permit opening of the front door. The switch shall be concealed behind an unmarked flip up cover. The door switch cover shall be spring loaded so as to be held in the closed position and be located rearward of the entrance door.

#### **TS 2.8.1.2 ACTUATORS**

The nominal door opening and closing speed shall be in the 3-5 second range. The maximum door opening and closing speeds will be regulated using fixed, maintenance free orifices and airline sizes. If required, door speeds can be decreased with the addition of a flow-restricting device. Actuators and the complete door mechanism shall be concealed from passengers, but shall be easily accessible for servicing.

#### **TS 2.8.1.3 MANUAL OPERATION**

In the event of an emergency, it shall be possible to open the door manually from inside the coach after actuating an unlocking device. The nameplate for the entrance door air dump valve shall say: "Emergency Only – To manually open entrance door push knob." All references shall detail the "manual" operation of the door.

### **TS 2.8.2 WINDSHIELD WIPERS AND WASHERS**

#### **TS 2.8.2.1 WINDSHIELD WIPERS**

The coach shall be equipped with variable or multiple speed electric windshield wipers for each half of the windshield with controls for each side integral with the turn signal arm. Both wipers shall park along the center vertical edges of the windshield glass. Windshield wiper motors and mechanisms shall be easily accessible for repairs or service from outside the coach only and shall be removable as complete units. Mounting shall preclude cracking or damage to the windshield frame. Power supply to the wiper motors shall be provided through a dedicated circuit. After each pause, the wiper shall make one complete cycle across the windshield surface and return to the park position automatically.

#### **TS 2.8.2.2 WINDSHIELD WASHERS**

The coach must be equipped with “wet” wiper arms. The windshield washer system shall deposit washing fluid on the windshield and, when used with the wipers, shall evenly and completely wet the entire wiped area. Two separate washer pumps are to be provided.

The windshield washer system shall have a minimum 3.9-gallon translucent reservoir, located for easy refilling. Reservoir pumps, lines and fittings shall be corrosion-resistant, and the reservoir itself shall be translucent for easy determination of fluid level. The windshield washer system shall be protected with an anti-freeze washer solution to -20°F, regardless of season of delivery. The protected solution shall be tinted to provide easy visual indication that anti-freeze is present.

#### **TS 2.8.3 LIGHTING, CONTROLS, INSTRUMENTS**

##### **TS 2.8.3.1 EXTERIOR LIGHTING**

All exterior lighting systems shall be nominal 12VDC. All exterior lamps shall be LED lamp assemblies. All exterior lighting fixtures shall be sealed to prevent entry and accumulation of moisture or dust and each lamp shall be replaceable in less than 5 minutes by a mechanic. Lights if mounted on the engine compartment doors shall be protected from the impact shock of door opening and closing. Lamps, lenses and fixtures shall be interchangeable to the extent practicable, and fixtures shall be corrosion resistant with sockets to be brass or stainless steel or plastic housings. Lamps at the rear of the coach, except the license plate lamp, shall be visible from behind when the engine service doors are opened.

Visual and audible warnings shall inform following vehicles or pedestrians of reverse operation. Visual reverse operation warning shall conform to SAE Standard J593. Audible reverse operation warning shall conform to SAE Recommended Practice J994-Type C or D. Daytime running lights are to be provided.

Two light installation housings shall be located on each side of the coach front containing a single round halogen headlamp, a round LED daytime running light inboard of each headlight and an amber clearance/turn signal light located outboard of each headlight.

Amber colored turn signal lamps shall be provided on both the front and rear of the coach. All lighting shall meet Federal standards (including amended 49 CFR Part 571 effective December 26, 1984). The front right lamp shall be near the front wheel well, above the rubrail line and no higher than the wheel well. The front left side lamp shall be located at the same height and forward

position as the right. The side signal lamps shall be of the armor protected type with unobstructed amber lens. The rear side signal lamps shall be generally located forward of the rear wheel well and shall have amber lenses, any aft of the rear wheel shall be red.

LED roof marker lamps shall be provided at each end of the coach with amber front and red rear lens being provided. Intermediate LED marker lamps with amber lenses shall be provided on each side of the roof line at the center of coach.

Reflectors on the front, sides and rear of coach shall be provided. The front side and center side reflectors shall be amber. The rear side and rear reflectors shall be red. The reflectors shall be permanently affixed to the coach; glue on or pressure sensitive mountings are not acceptable.

#### **TS 2.8.3.2 SERVICE AREA LIGHTING**

Four LED lamps shall be provided in the engine compartment to generally illuminate the area for night emergency repairs or adjustments. The lamps shall be controlled by a switch located near the rear start controls in the engine compartment. These lamp assemblies shall be adequately sealed to prevent the intrusion of moisture or debris during coach operation or normal servicing operations such as steam cleaning. Necessary lights, also sealed, shall be located in other service compartments, and shall be provided with maintain contact switches on the light fixture or convenient to the light.

#### **TS 2.8.3.3 FLUSH MOUNTED CURB LIGHTS**

Flush-mounted curb LED lights shall be installed on the right-hand curbside of the coach. One light shall be installed in the no.1 baggage bay door, two shall be installed in the wheelchair lift door, if this option is chosen and one shall be mounted in the right hand rear engine service door.

The curb lights shall illuminate the curbside area the coach when the entrance door is opened, activated through the door control relay.

The lights shall extinguish automatically approximately 10 seconds after closing the entrance door. The curb light in the no. 1 baggage bay door shall extinguish when the baggage bay door is opened.

#### **TS 2.8.3.4 DRIVER'S LIGHTING**

The driver's area shall have a LED lamp to provide general illumination of the driver's area and shall illuminate the half of the steering wheel nearest to the driver to a level of 15 foot-candles. This lamp shall be controlled by a switch that is conveniently located for access by the driver.

#### **TS 2.8.3.5 PASSENGER INTERIOR LIGHTING**

Indirect interior illumination of the coach shall be provided by a minimum total of thirty-three (33) LED fluorescent style tubes controlled by a 3-position switch on the driver's right-hand control panel. A minimum fourteen (14) installations shall be located at the window sides of the parcel racks. A minimum of nineteen (19) installations shall be located at the aisle sides of the parcel racks. Lighting intensity, measured at a vertical plane 24 inch above the seat cushion, shall be a minimum 15 foot-candles.

All passenger seats except for center seat of rear cross seat shall have a flush mounted adjustable LED lights. A minimum of 6 candlepower will be provided by each reading light cluster to insure adequate visibility with a button for passenger control. A switch to test the function of the reading lamps shall be located on the driver's side console and be labeled "Test." This switch shall be wired so as to override the function of all passengers reading lamp switches and illuminate all reading lamps when it is moved to the test position for the front two rows of reading lights.

A minimum of six blue LED aisle lights shall be provided on the underside of the street side passenger seats. These lamps shall be mounted in such a manner so as to prevent passengers from damaging the light's when they are illuminated.

Additional general lighting required to illuminate the interior for passenger exits and shall be interlocked to activate only when the passenger door is opened.

A step well lighting system shall be wired to illuminate when the front door is opened. The system shall provide no less than 2 foot-candles of illumination at the step tread with the doors open. These lights shall be LED type and shall not glare in the passengers' eyes. Lamp fixtures shall be totally enclosed, splash-proof, designed to provide ease of cleaning as well as lamp and housing removal, and shall not be easily removable by passengers. Stepwell lamps shall be protected from damage caused by passengers kicking lenses or fixtures and shall not be a hazard to passengers.

Three LED lamps shall be provided; a dome at the top of the stepwell, one on each side of the step well with the bottom one to also provide illumination of the ground area located inside and above the entrance door.

#### **TS 2.8.3.6 DRIVER CONTROLS**

All switches and controls necessary for the operation of the coach shall be conveniently located in the driver's area and shall provide for ease of operation. Switches and controls shall be essentially within the hand reach envelope described in SAE Recommendation Practice, J287, Driver Hand Control Reach. Controls shall be located so that boarding passengers may not easily tamper with control settings.

The door control, kneel control, windshield wiper/washer controls, and run switch shall be in the most convenient driver locations. They shall be identifiable by shape, touch, and markings. The passenger entrance door shall be operated by a single control, conveniently located by the driver's left hand on the control console. The location of this control shall be easily determined by position and touch.

All switches and controls shall be marked with easily read identifiers. All panel-mounted switches and controls shall be replaceable, and the wiring at these controls shall be serviceable from the vestibule or the driver's seat.

A momentary engine overrule switch shall be provided on the driver control console to permit the driver to move the coach off the road. All labeling of controls shall be permanent.



A beverage holder shall be located on the side of the left hand control console and will be black in color.

### **Left Hand Control Console**

A control console shall be located immediately to the driver's left and directly under the driver's window. The console shall house the rotary Master Run control switch **or approved Master Run rocker switch (subject to Pace approval at Pre-Production meetings)**, Outside Mirror touchpad controls, Engine Shutdown Override safety-covered switch, Panel Light on-off-dimmer switch and the Reading Light dimmer switch.

### **Transmission Shift Selector Control**

The shift selector control shall be in the switch panel housing to the left of the instrument panel and forward of the left-hand control console. Shifting is totally automatic using the touch pad on the shift selector control module. Trouble codes are also displayed on the shift selector to identify potential problems detected by the ECU.

### **Accelerator, brake pedals and Engine Controls**

These controls shall be designed for ankle motion. Foot surfaces of the pedals shall be faced with wear-resistant, nonskid, replaceable material that is either slipped or glued on.

Controls for engine operation shall be closely grouped within the driver's compartment.

### **TS 2.8.3.7 INSTRUMENTATION**

The speedometer, air pressure gauge(s), and certain indicator lights shall be located on the front cowl immediately ahead of the steering wheel. The steering wheel spokes or rim shall not obstruct the driver's vision of the instruments when the steering wheel is in the straight-ahead position. Illumination of the instruments shall be simultaneous with the marker lamps. Glare or reflection in the windshield, side window, or front door windows from the instruments, indicators, or other controls shall be minimized. Instruments and indicators shall be easily readable in direct sunlight.

**Indicators immediately in front of the driver shall at a minimum include:**

- *Headlamp High Beam*
- *Right Turn*
- *Left Turn*
- ***Hazard Warning or Left Turn and Right Turn indicators flashing simultaneously***
- *Parking Brake Applied*
- *Service Brakes Applied (may be common with parking brake indicator – Tell Tale labeled “Stop Lights.”)*

The instrument panel shall include a speedometer indicating no less than 80 mph and calibrated in maximum increments of 5 mph. The speedometer shall be a rotating point type, with a dial deflection of 220° to 270° and 40 mph near the top of the dial. The speedometer shall be sized and accurate in accordance with SAE Recommended Practice J678. A programmable electronic speedometer, or approved equal with odometer indicating vehicle speed in MPH, between 0 MPH and 80 MPH, shall be supplied. Speedometer speed and odometer mileage readings must be



accurate within limits of plus nothing to minus 2% when coaches are equipped with new tires. The speedometer shall be equipped with an odometer with a capacity reading no less than 999,999 miles.

The instrument panel shall also include air brake reservoir pressure gauge(s) with indicators for front and rear air tanks and voltmeter(s) to indicate the operating voltage across the coach batteries. The instrument panel and wiring shall be easily accessible for service from the driver’s seat or top of the panel. Wiring shall have sufficient length and be routed to permit service without stretching or chafing the wires.

**TS 2.8.3.8 VISUAL AND AUDIBLE WARNING DISPLAY**

Critical systems or components shall be monitored with a built-in diagnostic system. This diagnostic system shall have visual and audible indicators. The diagnostic indicator lamp panel shall be located in clear sight of the driver but need not be immediately in front of the operator and shall incorporate LED telltale lights. The intensity of indicator lamps shall permit easy determination of on/off status in bright sunlight but shall not cause a distraction or visibility problem at night. An audible alarm shall sound when certain malfunctions are detected by the diagnostic system. The audible alarm shall be loud enough for the driver to be aware of its operation and is inclined to discontinue operation of the coach. Malfunction warnings and other indicators listed in **Figure 2** shall also be supplied on the coach. Space shall be provided on the panel for future additions of no less than 4 indicators as the capability of onboard diagnostic systems improves. All diagnostic indicators shall be simultaneously tested by the activation of master switch.

**FIGURE 2: Operator's Status Panel Indicators**

<b>VISIBLE INDICATOR</b>	<b>TYPE of ALARM</b>
<b>BACK-UP INDICATOR</b>	<b>Back-Up Alarm</b>
<b>CHECK ENGINE INDICATOR</b>	<b>None</b>
<b>CHECK TRANSMISSION INDICATOR</b>	<b>None</b>
<b>ABS LAMP</b>	<b>None</b>
<b>NOT CHARGING</b>	<b>None</b>
<b>HAZARD INDICATOR</b>	<b>Click</b>
<b>HEADLIGHT HIGH BEAM INDICATOR</b>	<b>None</b>
<b>KNEEL INDICATOR</b>	<b>Sonalert</b>
<b>LEFT TURN SIGNAL INDICATOR</b>	<b>Click</b>
<b>LOW AIR INDICATOR</b>	<b>Buzzer</b>
<b>PARKING BRAKE INDICATOR</b>	<b>None</b>
<b>RIGHT TURN SIGNAL INDICATOR</b>	<b>Click</b>
<b>STOP ENGINE INDICATOR</b>	<b>Buzzer</b>
<b>STOP REQUEST INDICATOR</b>	<b>Chime</b>
<b>WHEELCHAIR LIFT INDICATOR</b>	<b>Buzzer / Alarm</b>
<b>WHEELCHAIR STOP REQUEST INDICATOR</b>	<b>Chime</b>
<b>REAR RISE INDICATOR</b>	<b>Sonalert</b>

**TS 2.8.3.9 PEDESTRIAN WARNING**

A pedestrian warning system shall be provided and installed. The system shall alert the coach operator and pedestrians in the path of the coach that the coach is turning right and left as well as announce to pedestrians that a turning coach may be coming near. The system shall include visual and audible warnings. The interior and exterior volumes shall be easily adjusted by maintenance personnel through a secure feature or program. The system shall be adjustable for point of turns when the announcements and warnings are made.

**TS 2.9 INTERIOR TRIM****TS 2.9.1 GENERAL REQUIREMENTS**

The interior trim shall be generally pleasing, simple, modern, and free from superficial design motifs. It shall have no sharp depressions or inaccessible areas and shall be easy to clean and maintain. To the extent practicable, all interior surfaces more than 10 inches below the lower edge of the side windows or windshield shall be shaped so that objects placed on them fall to the floor when the coach is parked on a level surface. Handholds, lamps, air vents, armrests, and other interior fittings shall appear to be part of the coach interior design. There shall be no sharp, abrasive edges and surfaces and no unnecessary hazardous protuberances. All plastic and synthetic materials used inside the coach shall be fire-resistant.

Materials shall be selected on the basis of maintenance, durability, appearance, flammability, and tactile qualities. Trim and attachment details shall be kept simple and unobtrusive. Materials shall be strong enough to resist everyday abuse and vandalism; they shall be resistant to scratches and markings. Interior trim shall be secured to avoid resonant vibrations under normal operational conditions.

**TS 2.9.1.1 TRIM PANELS**

Interior side trim panels and driver's barrier shall be textured stainless steel, anodized aluminum, plastic, melamine type material, vinyl-clad aluminum or fiberglass reinforced plastic. The material shall permit easy removal of paint, greasy fingerprints, and ink from felt tip pens. Panels shall be easily replaceable and tamper resistant. They shall be reinforced, as necessary, to resist vandalism and other rigors of commuter coach service. Interior mullion trim, molding, and trim strips shall be textured stainless steel, vinyl-clad aluminum, anodized aluminum or vacuum formed plastic.

The lower sidewall interior trim shall be fabric covered aluminum panels or approved equal, with fabric patterns running horizontally. Panels shall be sectionalized for ease of repair and joined by aluminum extrusion. Ceiling panels shall be fabric covered aluminum or approved equal.

**TS 2.9.1.2 HEADLINING**

Headlining shall be supported to prevent buckling, drumming, or flexing and shall be secured without loose edges. Headlining materials shall be treated or insulated to prevent marks due to condensation where panels are in contact with metal frame members. Molding and trim strips, as required to make the edges tamper-proof, shall be stainless steel, aluminum, or plastic, colored to compliment the ceiling material. The access panel for the antenna base does not require to be

hinged but shall be mounted with tamper-proof screws. Materials for the headlining shall be fabric covered aluminum, except that the front interior cap may be finished in gray fiberglass.

### **TS 2.9.1.3 FRONT END**

The entire front end of the coach shall be sealed to prevent debris accumulation behind the dash and to prevent the driver from kicking or fouling wiring and other equipment with his feet. The front end shall be free of protrusions that are hazardous to passengers standing or walking in the front of the coach during rapid decelerations. Formed metal dash panels shall be painted and finished to exterior quality or may be ABS, fiberglass or vinyl-clad. All parts forward of the driver's barrier shall be finished with a dull matte surface. Colors shall match or coordinate with the balance of the coach interior.

### **TS 2.9.1.4 REAR END**

The rear bulkhead and rear interior surfaces shall be paneled with fiberglass reinforced plastic, trimmed with stainless steel, aluminum, vinyl-clad aluminum, or approved equal.

## **TS 2.9.2 PASSENGER SEATS**

### **2.9.2.1 ARRANGEMENTS**

TS Passenger seats shall be arranged in a transverse, forward facing configuration.

No more than ten total seated positions shall be lost on any seating configuration in order to accommodate two wheelchair passengers occupying the securement positions.

Each transverse, forward facing seat, except the rear seats, shall accommodate two adult passengers. Floor seat tracks shall be stainless steel and shall be welded to the coach frame and be nearly flush with the finished floor. The wall tracks shall be stainless steel or aluminum and shall be bolted or riveted to the sidewall.

### **TS 2.9.2.2 STRUCTURE AND DESIGN**

Passenger seats shall be high back, fully padded, individually reclining seats with movable arm rests. Seat frames shall be constructed of high strength, fatigue resistant, welded steel with a durable powder coated, corrosion resistant colored finish which compliments the coach interior. The seat frame shall be wall mounted with heavy gauge steel brackets and shall be attached to the coach floor with a T Pedestal constructed of heavy duty stainless steel or high strength, fatigue resistant, welded steel with a durable powder coated, corrosion resistant colored finish to match. The seat back shall recline five (5) inches maximum with an infinite number of stops. The reclining seat backs shall be provided with a dress up feature to facilitate coach cleaning. Seat width shall be nominal 40.50 inches. Aisle shall not be less than 14 inches wide.

Seat cushions shall be supported by steel serpentine springs. Seat covering shall be premium grade gray fabric. Backrest back fabric shall be rugged carpet material, fleck gray cord with acrylic backing. Seat armrest shall be dark gray in color.

Seat foam padding shall be ~~molded foam meeting CA-117 standards~~ Neoprene Compound cushioning meeting FTA Docket 90-A which shall be covered with a removable cover with a zipper for ease of maintenance.

Passenger seats shall be equipped with 3-point restraint.

Each two-passenger seat shall be equipped with a dual USB power supply port. The rear seat area shall have two shared USB ports. USB ports shall be individually circuit fused.

### TS 2.9.3 DRIVER'S SEAT

#### TS 2.9.3.1 DIMENSIONS

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 diameter and have a quick disconnect at the back of the seat. The suspension shall have a minimum of 15° 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 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~~ 12° 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~~ 102°. 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 85 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.

### **TS 2.9.3.2 STRUCTURE AND DESIGN**

The driver's seat cushion shall be made of molded silicone or polyurethane foam. The foam shall be constructed to provide lateral support to provide better operator stability in curves and turns. All exposed metal on the driver's seat, including the pedestal, shall be stainless steel. Required seat belts shall be fastened to the seat so that the seat may be adjusted by the driver without resetting the seat belt. Seat belts shall be stored in automatic retractors. The retractor shall be located to the left of the driver; the latch mechanism shall be located on the right. The seat belt shall be designed to allow the operator to "set" the tension on the belt. The belt shall be designed to not creep, making the belt tighter or loose.

Driver's seat shall be covered in a premium black fabric. Seat cushions shall withstand 100,000 randomly positioned 3.50 inch drops of a squirming, 150 pound, smooth surfaced, buttocks-shaped striker with only minimal wear on the seat covering. Seat fabric shall be black in color.

### **TS 2.9.4 FLOOR COVERING**

#### **TS 2.9.4.1 VESTIBULE**

The floor in the vestibule shall be covered with non-slip flooring. The floor covering shall remain effective in all weather conditions for a minimum of seven years. The floor covering as well as transitions of floor material to the main floor and to the step well area and shall be smooth and present no tripping hazards. The standee line shall be white and 2.0 inches wide and shall extend across the coach ramp aisle in line with the driver's barrier. The width of this line shall be uniform in width across its entire length. This line shall be white, same color as the edge of the steps. Color shall be consistent throughout the floor covering.

#### **TS 2.9.4.2 DRIVER'S COMPARTMENT**

The floor in the driver's compartment shall be easily cleaned and shall be arranged to prevent debris accumulation. Floor covering material, dimensions and color shall match the vestibule area of the coach.

#### **TS 2.9.4.3 PASSENGER AREA**

The floor covering in the passenger area shall be the same material, dimensions and color specified for the vestibule. Flooring shall be installed to minimize the quantity of seams. A one-piece aisle center strip shall extend from the rear cross seat running between the rows of transverse seats to

the edge of the center ramp. The ramp will include a separate piece of flooring with a standee line imbedded next to the driver's modesty panel. The floor under the seats shall closely fit to the sidewall panels.

## **TS 2.10 WINDOWS**

### **TS 2.10.1 WINDSHIELD**

The windshield shall be designed and installed to minimize external glare as well as reflections from inside the coach. When the coach is operated at night with the passenger interior lighting on, essentially no reflections shall be visible in the windshield immediately forward of the driver's barrier. Reflections in the remainder of the windshield shall be minimized, and no reflection of any part of the coach interior behind the driver's barrier shall be visible in the windshield. The glazing material shall have single density tint.

### **TS 2.10.2 DRIVER'S SIDE WINDOW**

The driver's side window section shall be divided vertically, and the aft section shall slide in tracks or channels designed to last the service life of the coach. The driver's side window shall not be bonded in place and shall be easily replaceable. The glazing material shall be nominal 0.25 inch laminated, tempered glass with single density tint, the same as the windshield. The side window shall be rated AS-2.

### **TS 2.10.3 PASSENGER SIDE WINDOWS**

Large rectangular passenger side windows shall be provided on each side of the coaches. The side passenger windows will be double-glazed, frameless construction, hermetically sealed, AS-3 laminated float, 76% heat-absorbing safety glass with light and solar transmittance of 24%. A painted aluminum sash molding will be installed along the bottom length of the passenger side windows.

All windows shall be top hinged with push out at the bottom, with the exception of the wheelchair lift door window which is nominally 32 x 37 inches and does not open. All top-hinged windows shall be emergency escape type and include a single motion release bar running the entire width of the window at the lower edge to permit emergency egress. Emergency operating instructions etched on metal plates shall be provided at each seat position for operating the push-out window.

## **TS 2.11 INSULATION**

### **TS 2.11.1 MATERIAL**

#### **TS 2.11.1.1 PROPERTIES**

The insulating materials may be of differing thicknesses and materials to achieve thermal insulating properties and low interior noise levels. These are described following:

- Roof: 2.0 inch thick, compressed at installation, resin coated, medium density non bagged fiberglass.

- Sidewall: Rigid molded polyurethane foam of varying thickness.
- Driver's area: Minimum 0.50 inch high-density fiberglass under the floor in the driver's area.
- Step well area: 1-inch thick urethane foam insulation with Mylar face to minimize interior temperature variances during severe external climatic conditions and for sound deadening.
- Below windshield: 2.0 inch thick, high density fiberglass.
- Complete rear lounge seat area shall be heavily insulated with fiberglass blankets and sound-dampened panels for both noise and heat protection as follows:
  - Behind the rear cross-seat riser and rear cross seat back and cushion are a minimum total of 1.50 inch thick high-density fiberglass blankets.
  - An additional 0.625 inch fiberglass blanket is added behind the rear cross seat back to further impede engine noise propagation to coach interior.
  - Sound barrier with 0.250 inch urethane foam layered on either side of a 0.125 inch urethane elastomer loaded with barium sulfate.
  - Cover panel behind rear cross-seat is 1.0 inch thick foamed polyurethane with Mylar facing.
  - Area behind and below this rear area is 2.0 inch medium density fiberglass with a 0.75 inch thick heavy density fiberglass batting cemented to the inner face of the fiberglass rear panel.

#### **TS 2.11.1.2 THERMAL INSULATION**

The combination of inner and outer panels on the sides, roof, and ends of the coach, and insulating materials shall provide a thermal insulation enough to meet the interior temperature requirements. The coach body shall be thoroughly sealed so that drafts cannot be felt by the driver or passengers during normal operations with the passenger doors closed.

#### **TS 2.11.1.3 SOUND INSULATION**

The combination of inner and outer panels and any material used between them shall provide enough sound insulation so that a sound source with a level of 80 dBA measured at the outside skin of the coach shall have a sound level of 60 dBA or less at any point inside the coach. These conditions shall prevail with all openings, including doors and windows, closed and with the engine and accessories switched off.

Coach generated noise level experienced by a passenger at any seat location in the coach shall not exceed 80 dBA and the driver shall not experience a noise level of more than 70 dBA under the following test conditions. The coach shall be empty except for test personnel, not to exceed 4 persons, and the test equipment. All openings shall be closed and all accessories shall be operating during the test. The coach shall accelerate at full throttle from a standstill to 35 mph on level



commercial asphalt or concrete pavement in an area free of large reflecting surfaces within 50 feet of the coach path. During the test, the ambient noise level in the test area shall be at least 10 dB lower than the coach under test. Instrumentation and other general requirements shall conform to SAE Standard J366. If the noise contains an audible discrete frequency, a penalty of 5 dBA shall be added to the sound level measured.

#### **TS 2.11.1.4 REAR SEAT INSULATION**

Special design consideration shall be given to insulation in the area above the engine compartment. Fiberglass or other suitable material shall be applied, together with adequate ventilation, to provide temperatures consistent with the remainder of the coach.

Seat cushions and seat backs shall be suitably insulated to prevent elevated temperature of the seat itself and no cushion or back shall be measurably hotter as compared to any other seat in the coach.

### **TS 2.12 ANCILLARY FEATURES**

#### **TS 2.12.1 DRIVER'S AREA**

##### **TS 2.12.1.1 VISORS**

Self-supporting roller type sunscreens shall be provided at the roadside windshield and at the driver's side window. The sunscreens shall be shaped to minimize light leakage between the sunshades and windshield pillars. The sunscreens shall not obstruct air flow from the climate control system or obstruct the operation of other equipment such as the radio handset or the destination sign control. Deployment of the sunscreens shall not restrict the vision of the rearview mirrors. Sunscreen adjustments shall be made easily by hand.

##### **TS 2.12.1.2 STOP REQUEST SIGN**

A passenger chime signal audible to the driver and to passengers anywhere inside the coach shall be provided. The chime shall be a push button convenient to seated passengers. A driver-controlled switch shall deactivate the chime system. A stop request sign shall be located in the front center of the coach and fastened to the coach ceiling to permit viewing by all passengers. The sign shall be illuminated when the passenger chime sounds and go off when the entrance door is opened. The passenger chime shall sound once when the sign's light comes on but will not sound again until after the system has been reset by the opening of the entrance door. A passenger chime circuit ON / OFF switch shall be provided in the drivers area.

##### **TS 2.12.1.3 DRIVERS STORAGE**

A double prong hook shall be provided for the drivers' coat in the driver's area with a retention strap.

#### **2.12.2 MIRRORS**

##### **2.12.2.1 OUTSIDE MIRRORS**

The coach shall be equipped with corrosion resistant, heated remote controlled outside rear-view mirrors, on each side of the coach. The mirrors shall be mounted so as to permit the driver to view



the highway along both sides of the coach, including the rear wheels. Mirrors shall be firmly attached to the coach to prevent vibration and loss of adjustment, but not so firmly attached that the coach or its structure is damaged when the mirror is struck in an accident. Outboard maximum overall mirror width dimension shall not exceed 122 inches while providing maximum visibility to the operator.

The roadside mirror shall be a corrosion-resistant, remote outside rear view mirror, adjustable from the driver's seat. Mirrors shall be split view flat and convex glass integrated in the same housing, overall measurement 10 inches by 13 inches. Mirrors shall permit operator view of road surface as well as the rear wheels. Connections on mirror harness shall be Cannon Sure Seal all weather connectors or approved equal. Mirror head shall be attached to arm with ball/collet adjustment, for positive head location. Mirror arm shall be made to breakaway if struck in an accident or to eliminate damage in the wash. Mirror arm shall be hollow aluminum for concealing wire.

The curbside mirror shall be a corrosion-resistant remote outside rear view mirror. Mirrors shall be integral flat and convex with overall measurements of 10 inches by 13 inches and permit driver view of roadway as well as coach rear wheels. Mirror arm shall be spring loaded to break away, should impact occur. Mirror arm shall be made to break away if struck in an accident or to eliminate damage in the wash. Mirror arm shall be hollow aluminum for concealing wire. A mechanical stop shall be provided which prevents contact between the mirror arm and the entrance door. Mirror arm shall also have a five inch convex spot mounted on it to provide a clear view of the front of the coach.

Both mirrors in both housings shall be heated. A switch shall be provided. The switch shall control both mirrors and be provided with pigtail connectors to interface with the wiring harnesses of both remote mirrors. The switch shall be installed in a location that is within easy reach of the operator.

#### **TS 2.12.2.2 INSIDE MIRRORS**

A mirror shall be provided for the operator to observe passengers throughout the coach without leaving his seat and without shoulder movement. With a full standee-load, including standees in the vestibule, the operator shall be able to observe passengers in the rear of the coach and anywhere in the aisle. Inside mirror shall be 6.0 inches x 10.50 inches mounted just below the destination sign box and above the driver's line of sight.

#### **TS 2.12.3 PASSENGER ASSISTS**

##### **TS 2.12.3.1 GENERAL REQUIREMENTS**

Passenger assists in the form of full grip, vertical stanchions or handholds shall be provided for the support and stability of standees and for ingress/egress. Passenger assists shall be convenient in location, shape, and size for both the 95th-percentile male and the 5th-percentile female standee. Starting from the entrance door and moving anywhere in the coach, a horizontal assist shall be provided at the aisle side of the luggage rack that runs the full length of the luggage rack so that a 5th-percentile female passenger may easily move the length of the aisle using one hand and then the other without losing support. Excluding those mounted on the luggage racks, the assists shall be between 1.25 and 1.50 inches in diameter or width with radii no less than 0.25 inches. All

passenger assists except for the luggage rack nosing shall permit full hand grip with no less than 1 .50 inches of knuckle clearance around the assist.

### **TS 2.12.3.2 FRONT DOORWAY**

Front doors, or the entry area, shall be fitted with assists no less than 0.75 inches in width. Assists shall be as far outward as practicable, but shall be no further than 6 inches from the outside edge of lower step tread and shall be easily grasped by a 5th-percentile female boarding from street level. Door assists shall be functionally continuous with the horizontal front passenger assist and the vertical assist on the front modesty panel.

### **TS 2.12.3.3 VESTIBULE**

The aisle of the driver's barrier panel shall be fitted with vertical passenger assists that are functionally continuous with the overhead assists that extend to within 36 inches of the floor. These assists shall have sufficient clearance from the barrier to prevent inadvertent wedging of a passenger's arm and shall be in complete compliance with ADA requirements.

A horizontal passenger assist shall be located in the front of the coach adjacent to the driver's area. The horizontal passenger assist maximum will be no more than 35 inches.

The assists at the front of the coach shall be arranged to permit a 5th percentile female passenger to easily reach from the front door assist to the horizontal assist, then to the vertical assist.

## **TS 2.12.4 PASSENGER INFORMATION SYSTEMS**

### **TS 2.12.4.1 DESTINATION SIGNS**

The sign system shall display and provide optimum visibility of the message display units for passengers and shall meet or exceed applicable ADA requirements defined in 49 CFR, Part 38.39. Each Passenger Information Display Sign System provided shall consist of the following components:

1. A front sign mounted at the top front of the coach, behind windshield protection in an enclosed, weatherproof, but accessible compartment
2. A side sign shall be provided on each side of the coach, located just aft of the front passenger door near the top of an existing window or in a separate enclosed, weatherproof, but accessible compartment
3. A rear sign, the same as the side signs, shall be provided and install in a weather proof box shall be located on exterior rear of the coach
4. A run number sign located on interior front of the coach
5. A System Control Console

ALL signs shall use high intensity amber LED's. Sign mountings and installation shall be durable and vibration free. The front and side destination sign mountings shall provide ability to rotate sign horizontally to enable interior access to destination sign glass. The front and side mounted signs shall be installed in such a manner as to facilitate easy access for replacement of the entire sign assembly, or components electronic control modules, from inside the coach within **30 minutes** by a **3M** mechanic. Side signs can be mounted on either side of coach depending on mounting requirements. The side and rear sign boxes shall be sealed to prevent entry of dirt, dust, water, and insects during normal operation or cleaning with a cyclone cleaner. Rear Route Number sign shall be mounted on the rear exterior of the coach. Run Number sign shall be mounted on the dash in an area to be determined by Pace. The entire display area of all signs shall be clearly visible and readable both in direct sunlight and at night.

All system controls and drive boards shall be enclosed in either the sign housings or the System Control Console. The destination signs can be programmed to display either one common message or each sign can display independent messages. Sign system shall be capable of sequentially displaying two pre-selected destination messages and one public relations message. The operator shall be able to quickly change between pre-selected destination messages without re-entering a message code. Public relations messages shall be capable of being displayed alternately with the regular destination display or displayed separately. The message programming shall provide a means of adjusting the length of time the messages are displayed from one-tenth second to twenty-five seconds duration. The retention time between messages shall also be adjustable from one-tenth second to twenty-five seconds. Each line or blanking time of each message on each sign shall be capable of having a different retention time.

Power to the sign system shall be controlled by the Master Run Switch. The signs shall operate in only the day run and night run positions of this switch.

The intensity of the signs shall be automatically adjusted to be appropriate for the ambient light level. Display areas of signs shall be clearly and highly visible in direct sunlight and/or at night. The readability and the mechanism of the signs shall not deteriorate from continued exposure to sunlight, heat, or cold.

The signs shall be internally protected against voltage transients and RFI interference to ensure proper operation in the coach environment.

The displays shall consist of high intensity amber LED's. The LED's shall be rated by their manufacturer for a 100,000 hour life expectancy.

The characters formed by the LED's shall meet the requirements of the Americans with Disabilities Act (ADA) of 1990 Reference 49 CFR Section 38.39.

The destination message shall be readable by a person with 20/20 vision from a distance of 250 feet. The sign shall have equal readability at 65° on either side of the line perpendicular to the center of the mean plane of the display.

Front sign shall be 16 rows by 160 columns and shall have no less than 2560 LED's with a message display area of not less than 8.0 inches high by not less than 64.6 inches wide.

Side ~~and rear~~ signs shall be 8 rows by 96 columns and shall have no less than 768 LED's with a message display area of not less than 2.8 inches high by not less than 36.3 inches wide. The side sign display must be easily read from the sidewalk and street level. **Rear sign size, location, and mounting shall be subject to Pace approval at Pre-Production meetings.**

The signs shall report diagnostic status to the system control console for maintenance repairs needed.

The system control console shall be used to view and update display messages. The system control console shall utilize keys or touch screen for operator interface design for the harsh transit environment. The system control console shall have front access for simple USB data transfer and be capable of communication interface to other systems using RS232, J1708/1587 and J1939. The system control console shall be capable of remote message list download through AVL or J1708. The system control console shall contain an audio annunciator that beeps to alert the operator to view the display for a message, or beeps indicating that a key is depressed. The system control console shall continuously display the complete message associated with the selected destination code. The system control console shall be reverse compatible to display signs on Pace coaches and buses purchased since 2013. The system shall be programable by Wi-Fi.

#### **TS 2.12.5 LIFT**

The lift assembly shall comply with all current ADA and FMVSS 403 and 404 requirements. The lift shall be installed below the floor line at the number 2 right-hand luggage bay on the curbside of the coach.

The lift shall be controlled by a dash mounted toggle switch and a rear lift area toggle switch, and operated by up/down switches on a pendant mounted to the lift support bracket inside the number 2 baggage bay. The lift Restraint Belt must be buckled before the lift can be raised or lowered. The safety interlock circuit can be energized to operate the lift only if: the transmission is in neutral, the park brake is applied, engine Fast Idle is ON, the dash-mounted Master Switch is ON, the lift Secondary Switch is ON and the lift restraint belt is buckled.

The wheelchair loading system shall provide safe, comfortable and rapid ingress and egress for applicable passengers from the street level or a curb. When not in use, the lift shall stow in the luggage bay. The lift mechanism shall include a Threshold Warning device to provide "passenger on platform" information and prevent stowing the lift platform when a passenger is sensed. The outer barrier shall be automatically controlled and shall be such that it cannot be overridden by the loading system operator. A dash mounted indicator light shall be provided and shall be illuminated when the loading system is activated. The interlock shall apply, the coach shall not move and the engine throttle shall be disabled whenever the wheelchair loading system is activated. If the lift door is open or ajar, the interlock shall remain engaged. Brackets, clamps, screw heads and other fasteners used on the passenger assists shall be anodized aluminum or stainless steel and shall be flush with the surface and free of rough edges.

The lift control mounted on the lift structure shall have push button Up / Down switches. The toggle electrical supply switch shall be located in close proximity to the controller. This toggle switch must be turned "ON" prior to the lift operation. All lift control switches shall be permanently labeled. Decals shall not be permitted. ~~The stow guard switch shall be red in color and the Stow / Deploy switch shall be black in color.~~ These switches shall be incorporated in a hand held 3 or 4 button pendant.

*The lift shall include the following specifications:*

Lifting capacity (main platform) .....	700 pounds
Vertical travel .....	63" maximum
Platform width (chair capacity) .....	32" minimum
Platform depth (chair capacity) .....	48" minimum
Platform side height.....	1.50"
Handrail height - two (2) .....	30" minimum
Cassette stowed dimension (depth) .....	72.25" total
Cassette Width & Height.....	43.5" x 8.375"
Operating controls .....	3 pushbutton
Power source .....	Electro- hydraulic
Voltage .....	24 volts DC
Backup system.....	Emergency hand pump
Construction .....	Steel and aluminum
Stow level to ground cycle time .....	12 seconds at 70° – no load
Ground to floor level cycle time.....	12 seconds at 70° – no load

The lift shall be designed to comply with all applicable Regulations.

The lift shall include a hinged platform to bridge the coach floor to the lift platform. Bridge shall be hinged and locked in an upward position to act as a barrier when the lift is in use. Bridge shall also allow the lift passenger to ingress/egress easily from the platform. Lift travel speeds and lift operation shall be adjusted to the lift manufacturer's specifications upon completion of the lift installation into each coach and before coach delivery. The individual handrails shall incorporate a visual aid to insure that they are folded in the proper order.

The lift shall include an emergency system in case of driver operation malfunction. Should an emergency situation occur, the lift operator shall release the pushbutton switch on the controller to immediately stop the lift operation. Loss of electrical power shall also stop the lift operation regardless of switch position. An emergency auxiliary hydraulic hand pump shall be used to complete the lift cycle. The emergency hand pump handles and pump shall be located in an enclosed box at the rear wall of the number 1 right-hand baggage bay to prevent the accumulation of dust and dirt. The pump shall be easily accessible through baggage bay door. The handle shall be stored adjacent to the pump to allow immediate usage.

**TS 2.12.5.1 LIFT DOOR**

The lift door shall be a single leaf design that operates in a sliding track mounted both above and below the door leaf. The door shall open by sliding to the rear of the coach and shall remain on a horizontal plane throughout the opening and closing process. No pin hinged doors shall be provided. The transmission must be in neutral and the parking brake activated for the lift to operate. The accelerator shall be automatically disabled and the fast idle system activated when either the lift master switch is turned "ON" or the lift door is open in order to provide maximum safety and security. These features shall be wired to the lift master switch to allow activation only when the transmission is in neutral. The coach directional (Hazard) lights will also flash on/off. After the lift operation is completed, the lift shall be properly stored and secured, with the access door closed and the lift master switch at the dash in the "OFF" position in order to move the coach.

The lift door shall have a window in line with the other passenger windows and shall not detract from the appearance of the coach. The door latch mechanism shall be located in the lower section of the door so that operators in the 5th percentile female range can operate the lift door.

The lift storage door shall not block the visual observation of the lift assembly while utilizing the manual override mode of the lift. A lift door design consisting of a horizontally hinged lift platform egress door mounted within a vertical motion pantograph baggage door is a preferred design.

**TS 2.12.5.2 LIFT INSTALLATION**

The installation of the lift to the coach structure as well as the installation of the lift door into the sidewall of the coach shall not affect the structural integrity of the coach.

The parcel rack module above the wheelchair lift platform area shall be permanently removed to provide additional headroom. The modified rack shall be professionally finished at all ends.

A Threshold Warning module with a red warning light and acoustic sensor shall be mounted in the ceiling structure above the wheelchair lift entrance doorway.

The heating and air ducts shall be rerouted around the lift area to ensure proper interior air conditioning/heating airflow and distribution.

A passenger chime tape switch shall be mounted on the sidewall at the two (2) wheelchair securement positions.

Each coach shall have adequate information decals installed which details the proper lift operation in both the normal and manual modes of operation.

**TS 2.12.5.3 LIGHTING REQUIREMENTS**

Lighting for the lift areas shall be designed to exceed Title 13 and ADA and FMVSS 404 standards. Lighting shall be provided to effectively illuminate the lift area. Light shall be wired through the lift master toggle switch on the driver's dash and shall automatically illuminate when this switch is in the "ON" position. The lighting design shall minimize the effect of glare on passengers entering the coach through the wheelchair lift door. During lift operation, the street surface shall

be illuminated to a minimum of six candlepower a distance of 3 feet beyond the external dimensions of the lift platform once deployed and lowered. Additional lighting shall be provided to insure illumination of the instruction placard and the manual override pump when it is in use.

#### **TS 2.12.5.4 SECUREMENT SYSTEM**

The wheelchair and passenger securement systems shall be Q-Straint model QRT MAX or approved equal. The vehicle interior shall permit the securement of two (2) forward facing wheelchair passengers in which the primary position shall be on the street side of coach directly across from lift. Securement areas shall be a minimum 30 x 48 inches as required by ADA.

A separate three-point belt securement shall be provided to effectively secure wheelchair passengers.

To further secure the passenger during the lift operation, a retractable seat belt strap shall be provided at the ingress / egress area of the lift platform. This seat belt strap must be buckled to disengage the lift electrical interlocks to allow lift operation.

#### **TS 2.13 ROOF ESCAPE HATCHES**

Two roof hatches shall be provided and designed to perform as escape hatches. One escape hatch shall be located in the roof at the front of the coach, another in the roof at the rear of the coach.

### **TS 3.0 CHASSIS**

#### **TS 3.1 PROPULSION SYSTEM**

##### **TS 3.1.1 VEHICLE PERFORMANCE**

###### **TS 3.1.1.1 POWER REQUIREMENTS**

The propulsion system and drive train shall provide power to enable the coach to meet the defined acceleration, top speed, and gradability requirements. Sufficient excess power shall be available to operate all accessories without jeopardizing coach performance or safety parameters.

###### **TS 3.1.1.2 TOP SPEED**

The coach shall be governed at 72 mph road speed, for emergency and passing maneuvers, on a straight, level road at SLW.

###### **TS 3.1.1.3 GRADEABILITY**

Gradeability requirements shall be met on grades with a surface friction coefficient of 0.3 and above at SLW with all accessories operating. The standard configuration power plant shall enable the coach to maintain a speed of 44 mph on a 2% grade and 7 mph on a 16% grade.

###### **TS 3.1.1.4 ACCELERATION**

Vehicle shall accelerate from 0 to 15 mph in five seconds, with the coach at S.L.W.

###### **TS 3.1.1.5 OPERATING RANGE**

The operating range of the coach run on the design operating profile shall be at least 450 miles on a single fill-up of diesel fuel.



### **TS 3.1.1.6 OPERATING PERFORMANCE**

Speed, gradeability, and acceleration performance requirements shall be met at, or corrected to, 85F°, 29.00 inches Hg, dry air. Performance degradation at conditions other than the test standard shall not exceed 1% for each 3°F and 4 % for 1,000 feet of altitude above the standard.

### **TS 3.1.2 POWER PLANT MOUNTING AND ACCESSORIES**

#### **TS 3.1.2.1 MOUNTING**

The power plant shall be mounted in a compartment in the rear of the coach. All power plant mountings shall be mechanically isolated to minimize transfer of vibration to the body structure. Clamps required for securing or supporting lines shall be rubber or plastic coated and properly sized for the line being clamped.

#### **TS 3.1.2.2 SERVICE**

The power plant shall be arranged so that accessibility for all routine maintenance is assured. No special tools, other than dollies and hoists shall be required to remove the power plant. The power plant shall be mounted on a cradle which can be slid into and out of the coach. Two mechanics shall be able to remove, replace and prepare the engine and transmission assembly for service in less than 25 total combined man-hours.

The muffler, exhaust system, air cleaner, air compressor, starter, turbocharger, alternator, radiator, including charge air circuit, all accessories, and any other components requiring service or replacement shall be installed in or above the engine compartment.

The turbocharger, alternator, air compressor, and starter shall be replaceable without dismounting or removing other coach parts and without gaining access through the coach interior.

The cooling system filler caps shall be removable from the filler neck and be held closed with spring pressure or positive locks. The transmission filler tube shall employ a combination dipstick and cap and shall be the minimum length permissible to make fluid checking easier. All fluid fill locations shall be properly labeled to help ensure correct fluid is added and all shall be easily accessible with standard funnels, pour spouts, and automatic dispensing equipment. The power plant shall be equipped with digital, computerized diagnostic capability using available diagnostics for displaying engine and transmission data.

The engine and transmission shall be equipped with sufficient heavy-duty fluid filters for efficient operation and to protect the engine and transmission between scheduled filter changes. To the extent practicable, the filters shall be of the spin-on, disposable type. All filters shall be easily accessible and the filter bases shall be plumbed in a manner so as to assure correct reinstallation. Flexible lines shall be FC-300 Aeroquip hose or approved equal, except in applications where premium hoses are required and shall have standard SAE or JIC brass or steel, crimp-type, swivel end fittings. Hoses shall be individually supported and shall not touch one another or any part of the coach.



**TS 3.1.2.3 AIR CLEANER**

The air cleaner shall be a dry type, horizontally mounted. Airflow through the filter element shall be from the outside in. To service the filter shall take less than 5 minutes, disconnecting an engine air intake duct, air compressor intake duct, or filter housing shall not be necessary. The access cover of the air filter assembly shall be retained to the filter housing with a single wing nut or the Cummins supplied disconnect clip. A mechanical type filter minder air filter restriction indicator shall be provided.

**TS 3.1.2.4 ACCESSORIES**

These accessories shall be unit mounted for quick removal and repair. These accessories shall be driven at speeds sufficient to assure adequate system performance during extended periods of operation. The power steering pump and air compressor shall be flange mounted and gear driven from engine. The power steering reservoir shall be remotely mounted to the coach chassis and shall not be mounted on the drivetrain. Only the 24-volt alternator, and A/C compressor may employ belt drives. Tension on the belt driven A/C compressor shall be maintained by automatic adjuster. The alternator and the fan drive shall be automatically tensioned.

**TS 3.1.2.5 HYDRAULIC DRIVE**

Hydraulic system service tasks shall be minimized and scheduled not more frequently than scheduled tasks for other major coach systems. All elements of the hydraulic system shall be easily accessible for service or unit replacement. All lines shall be compatible with the hydraulic fluid and maximum pressures of the system. Flexible lines shall be minimized in quantity and length. Lines of the same size and with the same fittings as those on other piping systems of the coach, but not interchangeable, shall be tagged or marked for use on the hydraulic system only. Hydraulic lines shall be individually and rigidly supported to prevent chafing damage, fatigue failures, and tension strain on the lines and fitting. Hydraulically driven radiator and charge air cooler fan drive systems are not acceptable.

The hydraulic system shall be configured and/or shielded so that failure of any flexible line shall not allow hydraulic fluid to spray or drain onto any component operable above fluid auto-ignition temperature. The hydraulic system shall utilize the same synthetic fluid as the transmission.

**TS 3.1.3 DIESEL POWER TRAIN****TS 3.1.3.1 EPA CERTIFIED ENGINE**

The engine shall comply with current EPA emissions requirements as applicable at time of manufacture. The engine power rating will be 410 HP nominal with a Maximum Torque Curve of 1520 lb.-ft at 1,200 rpm. The engine shall be designed to operate on number 2 Ultra Low Sulfur diesel fuel and shall be equipped with electronic controls. The engine shall be governed by electronic controls that comply with SAE J-1939 for Serial Data Communications. All cables and electronic devices utilized as part of the electronic engine control system shall be adequately shielded from external interference. The engine shall be monitored by a series of sensors which provide signals to the electronic module indicating pertinent pressures, temperatures, and fluid

levels necessary to preserve the operating life of the engine. The Engine Control Module (ECM) shall provide control for the air and fuel systems on the engine. The engine shall be protected from premature failure by the electronic control module and sensors. If a reading exceeds an acceptable range, a warning light shall notify the operator and the engine operation shall be brought under control or to a controlled stop. The electronic control module shall be equipped with a self-diagnostic system as well as an engine protection system and engine performance diagnostics. A failure shall be retained by the control module for evaluation by garage personnel using diagnostic software. The diagnostics shall be capable of monitoring and evaluating engine system parameters such as intake manifold pressure, oil pressure, oil temperature, coolant level, coolant temperature, engine speed, throttle position and vehicle speed governing. The system shall be equipped with a means to limit the vehicle top speed via the electronic controls. The entire system shall be capable of communicating with the electronically controlled transmission. The primary objective of the system is to provide the capability for the electronic engine controls to reduce power by command of the transmission in the event of transmission malfunction (low oil level/pressure; coolant temperature; etc.).

The engine electronic control module shall be constructed as a weatherproof enclosure on the engine that is protected from the environment. Engine mounted components (excluding wiring connectors) may be exposed to steam cleaning and pressure washing. The engine shall be equipped with fast idle (approx. 950 RPM) and be driver controlled. The devices shall activate only when the transmission is in neutral and parking brake applied. This device may be used to help meet the requirements of coach air conditioning cool down. The engine starter shall be protected by an interlock that prevents its engagement when the engine is running. The starter shall be prevented from engaging when the transmission selector is in any position other than neutral. The engine shall be equipped with a block heater.

### **ENGINE ELECTRONIC CONTROLS**

The engine electronic control system will control the engine as designed by the manufacturer and as detailed below.

### **THROTTLE CONTROL**

The control module shall also be capable of controlling the engine through signals received from an electronic accelerator pedal. The electronic pedal shall be equipped with a sensor that picks up accelerator pedal position at an infinite number of points throughout the range of the pedal. The pedal sends a signal to the engine ECU which commands engine operation. The operation of the pedal shall be completely electronic without mechanical controls or linkage. The pedal shall not have any exposed wiring in the driver's area. The throttle system shall be designed so that in the event the wires are severed between the control unit and the control pedal, the engine will return to an idle position immediately.

### **TS 3.1.3.2 COOLING SYSTEM**

The cooling system shall be sized to maintain fluids at safe, continuous operating temperatures during the most severe operations possible with the coach loaded to GVWR and with ambient temperatures up to 110°. Sufficient reserve capacity shall be provided by the cooling system to provide efficient cooling for the coolant and engine charge air in a degraded condition.

Radiator(s), complete with charge air cooling circuit shall be provided, mounted above the engine compartment. The charge air cooler and the radiator shall be mounted at least 60 inches above the road surface. The physical size and heat rejection capacity of the radiator along with the charge air cooling capacity shall be tested and approved by the engine manufacturer for this application. The radiator system shall be easily serviced through the rear doors. The radiator and charge air cooler shall not be stacked in front of one another. Door shall include hinges which hold the doors in the open position.

The charge air/cooling (CAC) system radiator(s) shall be of durable corrosion-resistant construction. Radiator(s) plumbing shall be stainless steel, copper, aluminized steel or brass tubing and if practicable, rubber hoses shall be eliminated. Necessary hoses shall be premium, silicone rubber type that are impervious to all coach fluids. All coolant hoses shall be secured with constant tension hose clamps. Fan speed shall be regulated to minimize fan noise. No heat producing components or climate control system components shall be mounted between the engine cooling air intake aperture and the radiator(s). All cooling system fittings are to be cast iron, brass or copper.

Multiple and reversible electric fans shall pull outside air through an exterior panel and across the radiator and charge air cooler at a minimum rate approved by the engine manufacturer for maximum cooling efficiency.

Radiator surge tank shall be made of heavy-duty stainless steel. A sight glass to determine satisfactory engine coolant level shall be provided and shall be accessible by opening the radiator access doors. A spring-loaded radiator cap shall also be provided to safely release pressure or vacuum in the cooling system. An engine alarm system will be included in the engine electronic control. If possible, cooling system function shall be controlled electronically through the engine control system. An automatic coolant recovery system will also be provided.

Engine thermostats shall be easily accessible for replacement. The engine cooling system shall be equipped with a properly sized or approved equal cooling system filter with a spin-on, disposable borate element. The engine coolant shall be fully formulated phosphate free. Shutoff valves shall be provided on the coolant filter base which allows filter replacement without coolant loss. Quarter turn valves shall also be provided and installed in the entire cooling system which permits complete shutoff of both lines for the heating and defroster units.

All low points in the water-based cooling system shall be equipped with drain cocks. Air vent lines shall be fitted at high points in the cooling system. Oil and water temperature gauges will be provided in the engine compartment.

### **TS 3.1.3.3 TRANSMISSION**

The transmission shall be a six-speed transmission, equipped with Electronic Controls. Maximum input HP shall be 550 HP. Maximum input torque capability shall be 1650 pound feet of torque. The transmission shall have a one stage, three element, polyphase torque converter and a lock up clutch with a torsional damper. The transmission shall be fully automatic with six forward gear ratios. Shift calibration shall be set so that shifts shall be smooth under all operating conditions.

The transmission shall be dynamometer tested during the assembly process. The transmission shall be filled with synthetic transmission fluids that meets TES-295 specification and have a TES-295 approval number.

**The gearing shall be of the constant mesh, helical, planetary type with the following ratios:**

<i><b>RANGE</b></i>	<i><b>RATIO</b></i>
<b>First</b>	3.51:1
<b>Second</b>	1.91:1
<b>Third</b>	1.43:1
<b>Fourth</b>	1.00:1
<b>Fifth</b>	0.74:1
<b>Sixth</b>	0.64:1
<b>Reverse</b>	4.80:1

A function of the electronic controls shall be provided to prevent premature engagement and operation of the automatic transmission reverse gear.

The transmission shall be governed by electronic controls, which contain a programmable read-only memory (PROM) that will provide basic transmission control functions. All cabling and electronic devices utilized by the electronic transmission control system shall be adequately shielded against interference.

The transmission electronic module shall be capable of communicating with the engine electronic module to maintain maximum efficiency. The control module shall be equipped with a self-diagnostic system. A failure shall be retained by the control module for evaluation by garage personnel.

Modified diagnostics shall provide timely information on transmission oil and filter change requirements and transmission rebuild timeframes.

The electronic controls shall be completely sealed from the environment. The transmission electronic control unit shall be located in a weatherproof box that is protected from environment or potential damage from under floor baggage.

#### **TRANSMISSION ELECTRONIC CONTROLS**

The transmission control shall be designed to protect the transmission from any possible abuse of controls and shall be equipped with the supplier's standard Directional Range Inhibit feature to prevent shifting from forward to reverse or vice-versa under conditions which could damage the transmission. The transmission shall be equipped to prevent starting of the engine unless the transmission is in neutral. The transmission shall be configured to engage "neutral" when the parking brake is applied. The electronic controls shall perform the function of an automatic transmission protection system. The system shall be configured to disengage the transmission or shut off the engine when critical transmission parameter levels extend beyond the boundary

conditions such as when the maximum safe operating temperature is exceeded or when transmission oil pressure is reduced below safe minimum level.

#### **TS 3.1.3.4 ELECTRIC STARTER**

A 24-volt starter motor shall be provided as a basic installation. Planetary gear reduction drive technology produces greater starting torque, rotating the armature at a higher rpm. The starter will have “Soft Start” positive pinion gear meshing technology, which will engage the pinion gear into the ring-gear before the starter begins to turn. The starting system shall be inoperable whenever the master control is in the OFF position, and whenever the emergency shut-off switch is activated or the engine is running. A starter interlock shall be provided that shall prevent the starter motor from engaging the flywheel after the engine is started.

#### **TS 3.1.3.5 ALTERNATOR**

Brushless, air-cooled, self-rectifying alternator(s) will be mounted on the engine. The alternator will be belt-driven off an engine-mounted accessory drive pulley. An automatic tensioner will maintain the required belt tension adjustment.

#### **TS 3.1.3.6 BOOST PUMP**

A boost pump shall be provided as the basic coolant boost pump for coach heating requirements. The pump motor shall be a brushless motor pump operating at 24 volts DC. Coolant flow rate shall be a minimum of eight (8) GPM. The pump operates on demand according to the driver’s heat control valve.

#### **TS 3.1.4 EMISSIONS**

##### **TS 3.1.4.1 MOTOR VEHICLE POLLUTION REQUIREMENTS**

The manufacturer shall provide in writing that:

The engine being provided complies with the Clean Air Act when operated on No. 2 diesel fuel.

The HP of the vehicle is adequate for the speed, range and terrain in which it will be required to operate, and also to meet the demands of all auxiliary power equipment.

##### **TS 3.1.4.2 EXHAUST**

Exhaust gases shall not be discharged on the curbside and shall be directed generally left of centerline of the coach. Exhaust shall not be through the body of the coach, as through a stack, but should be directed toward the street surface. 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 “Regen” (Regeneration) switch activates an internal element within the DPF that burns off the trapped soot and engine oil ash. The tailpipe plenum shall be completely sealed and insulated to prevent fumes or smoke from entering the coach interior and to prevent heat from causing damage to paint work or other components. The exhaust outlet shall not discolor the exterior of the coach and shall extend beyond the body sufficiently to allow fitment of shop exhaust extractor hoses such as found at Pace maintenance facilities.

As applicable the exhaust system shall include after treatment designed to reduce particulate emissions.

## **TS 3.2 FINAL DRIVE**

### **TS 3.2.1 GENERAL REQUIREMENTS**

The two rear axles shall have a load rating enough for the coach loaded to GVWR. Transfer of gear noise to the coach interior shall be minimized.

#### **TS 3.2.1.1 DRIVE AXLE**

The drive axle shall be rated at 22,500 lbs. The bearing journals on each spindle shall be induction hardened for greater durability. Ring gear shall be bolted to case. The drive axle hub end wheel bearings shall be oil lubricated.

#### **TS 3.2.1.2 TAG AXLE**

A tag axle shall be located behind the drive axle. The tag axle shall be an independent sprung, swing arm type with fixed steering. The tag axle shall have single tires the same size as the tires on the front and drive axles. Tag axle weight shall not exceed 10,000 pounds. With full passenger seating capacity, load on any axle shall not exceed 22,400 pounds.

A Tag axle unloading feature will allow full or partial unloading, or dumping of air from the tag axle air spring bellows. This feature enables weight to shift to the drive axle for more traction. Manual unloading valves are located inside the RH rear curbside service door.

#### **TS 3.2.1.3 HUBS**

All axles shall utilize standard wheel bearings complete with factory pre-load bearing/hub assemblies, lubricant and seals.

#### **TS 3.2.1.4 DRIVE SHAFT**

The drive shaft shall be a minimum 3 inches outside diameter, heavy-duty type. The drive shaft shall be guarded to prevent it from striking the floor of the coach or the ground in the event of a tube or universal joint failure. U-joint end cap retaining bolts shall be retained by metal locking plates or high strength LOCKTITE. Both half-round yoke ends shall be attached using self-locking bolts.

## **TS 3.3 SUSPENSION**

### **TS 3.3.1 GENERAL REQUIREMENTS**

The front and rear axle suspension shall be pneumatic and equipped with straight side lobe air suspension bellows. Four suspension bellows shall be provided on the drive axle and two suspension bellows on the front axle. The tag axle shall be equipped with two straight side lobe type air springs, 9.5 inch nominal in diameter. Pressure in the tag axle suspension shall be automatically adjusted as required by the load-sharing system. Manual air dump valves for unloading the tag axle air suspension bellows shall also be provided in the engine compartment.



The basic suspension system exclusive of bellows, height control valves, bushings and shock absorbers, shall last the life of the coach without major overhaul or replacement. Four (4) heavy-duty rubber bushed silent block sleeve type radius rods shall be provided at both the front and rear drive axles to control lateral, longitudinal, and torsional movement. One transverse stabilizing rod shall be provided on front axle for additional support during coach lane changing or turning of corners. The coach shall be equipped with a sway bar designed to reduce body lean and increase bushing life. Items such as bushings and air springs shall be easily and quickly replaceable. Adjustment points shall be minimized and shall not be subject to a loss of adjustment in service. Necessary adjustments shall be easily accomplished without removing or disconnecting the components.

### **TS 3.3.2 SPRINGS AND SHOCK ABSORBERS**

#### **TS 3.3.3 TRAVEL**

The suspension system shall permit a minimum wheel travel of 3.5 inches in jounce and 3 inches in rebound. Elastomeric bumpers shall be provided at the limit of jounce travel. Rebound travel may be limited by elastomeric bumpers or hydraulically within the shock absorbers.

#### **TS 3.3.4 KNEELING**

A driver-actuated kneeling device shall lower the coach floor 3.0 to 6.0 inches during loading or unloading operations regardless of load to a floor height of 42 inches measured at the longitudinal centerline of the front door. The park brake shall prevent movement when the coach is kneeled. The coach shall kneel and rise at a maximum rate of 1.5 inches per second at essentially a constant rate. A flashing indicator visible to the driver shall be illuminated until the coach is raised to a height adequate for safe street travel. An audible warning device that operates with the kneeling system shall be provided. A visual indicator meeting ADA requirements shall be provided on the curbside of the coach and shall activate during the kneeling operation. This indicator shall be appropriately marked and visible to the boarding passenger.

#### **TS 3.3.5 DAMPING**

Vertical damping of the suspension system shall be accomplished by hydraulic shock absorbers mounted to the suspension arms or axles and attached to an appropriate location on the chassis. Damping shall be sufficient to control coach motion to 4 cycles or less after hitting road perturbations. Shock absorbers shall maintain their effectiveness for at least 50,000 miles in normal service. The coach shall be equipped with four shock absorbers on the drive axle and two on each side of the front axle and one on each end of the tag. Shock absorbers shall be interchangeable on each axle, side to side.

#### **TS 3.3.6 LUBRICATION**

All elements of steering, suspension, and drive systems requiring scheduled lubrication shall be provided with grease fittings conforming to SAE Standard J534. These fittings shall be located for ease of inspection, and shall be accessible with a standard grease gun without flexible hose end from a pit or with the coach on a hoist. Each element requiring lubrication shall have its own grease fitting with a relief path. Lubricant specified shall be standard for all elements on the coach serviced by standard fittings. All fittings shall be standard pipe thread.

**TS 3.3.7 UNDERCOATING**

Permanent undercoating shall be applied to the underside of the body, frame, and wheel wells. Undercoating overspray on the exterior of the coach shall be removed prior to delivery. Underbody components such as air suspension bellows and height control valves, shock absorbers, lubrication fittings, air brake system valves, brake lining, muffler and exhaust system components, drive shaft, and engine and transmission sumps shall be protected from undercoating overspray. Composite baggage bay flooring with non-structural stainless steel framing need not be undercoated.

**TS 3.4 STEERING****TS 3.4.1 STRENGTH**

Fatigue life of all steering components shall exceed 1,000,000 miles. No element of the steering system shall fail before suspension system components when one of the tires strikes a severe road hazard. Inadvertent alternations of steering as a result of striking road hazards are steering failures. The steering column shall provide both tilt and telescope features. The steering wheel shall be a wrapped, molded polypropylene. Finger grips shall be provided on the wheel, down and away from the driver.

The front axle shall be a non-driving axle rated at 16,000 pounds and shall be equipped with disc brakes and brake chambers with a load rating sufficient for the coach loaded to GVWR. Front axle shall be a standard, drop center type. King pins shall be the low friction, "Easy Steer" type for longer maintenance intervals.

**TS 3.4.2 TURNING EFFORT**

The steering wheel shall be not less than 18.0 nominal diameter and shall be shaped for firm grip with comfort for long periods of time. The steering wheel shall be removable with a standard or universal puller. Hydraulically assisted power steering shall be provided. The steering gear shall be an integral type with flexible lines eliminated or the number and length minimized. Steering torque applied by the driver shall not exceed 10-foot-pounds with the front wheels straight ahead to turned 10°. Steering torque may increase to 70-foot-pounds when the wheels are approaching the steering stops. Steering effort shall be measured with the coach at SLW, stopped with the brakes released and the engine at normal idling speed on clean, dry, level, commercial asphalt pavement and the tires inflated to recommended pressure. Power steering failure shall not result in loss of steering control. With the coach in operation, the steering effort shall not exceed 55 pounds at the steering wheel rim and perceived free play in the steering system shall not materially increase as a result of power assist failure.

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



**TS 3.5 BRAKES****TS 3.5.1 SERVICE BRAKE****TS 3.5.1.1 ACTUATION**

Service brakes shall be controlled and actuated by an air system. Force to activate the brake pedal control shall be an essentially linear function of the coach deceleration rate. The angle of the pedal shall be ergonomically designed to minimize fatigue. At least 6.0 inches of slack in the airlines shall be available to allow for change out of the brake treadle valve and pedal assembly. The brake pedal shall be slightly higher than the accelerator. Provisions at the front shall be made to activate the brakes from the towing vehicle. Release of the emergency/parking brake shall require one full application of the service brake once the emergency/parking brake release valve is depressed.

**TS 3.5.1.2 FRICTION MATERIAL**

All brakes shall be disc brakes. Brake pads shall be non-asbestos, and must be designed and approved for use on the vehicle being proposed. Brake pads must provide optimum performance with the brake system being used and shall minimize brake noise under all weather conditions.

**TS 3.5.1.3 ANTILOCK BRAKE SYSTEM**

The coach shall be equipped with an antilock brake system electronic controller assembly that will provide full vehicle wheel control braking for the coach. The design of the digital electronics shall provide a high degree of protection from electric spikes, radio and electromagnetic interference.

The ECU shall be remote mounted from the brake valve in a location that permits easy access of the controller for maintenance functions.

The antilock brake system shall provide individual wheel control by using a wheel speed sensor and modulator at the front axle, drive axle and tag axle. The drive axle brakes shall be controlled completely independent of each other and therefore brake application pressure at an individual wheel shall be adjusted solely on the basis of its behavior on the road surface on which it is traveling. Wheel speed sensors shall be provided on the drive axle and will simultaneously control the wheels on the tag axle. A single modulator shall be provided that controls both rear curbside wheels and another modulator shall control the rear roadside wheels.

Inputs to the ECU shall be generated from a tone ring (exciter) by wheel sensors, which generate a signal, which varies in voltage and frequency as the speed of the wheel increases or decreases. The wheel sensor shall provide wheel speed information at the rate of 100 pulses per wheel revolution. The ECU shall simultaneously receive, and individually interpret speed signals from four wheel sensors.

Outputs from the ECU shall be provided to system brake modulators. The modulator shall be capable of receiving signals from the ECU and shall be designed to modify operator applied air pressure to the service brakes. The modulator shall be located near the service actuator(s) it controls and shall be the last air valve through which air passes on its way to the brake actuator. A wiring harness shall connect each modulator to the ECU. Solenoid valves contained in the

modulator shall provide the electrical interface between the controller electronics and the air brake system. The ECU shall be capable of simultaneously and independently controlling four individual modulator assemblies.

The antilock brake system logic shall be designed to respond to component equipment failure using a conservative fail safe philosophy. Any single electrical failure of a component devoted to antilock braking shall result in simultaneous illumination of the antilock condition lamp on the dash, a disabling of all or part of the antilock system, and reversion to standard braking on wheels no longer under the control of antilock. The ECU is divided into two separate parts, each equally controlling a pair of diagonal brakes. When a failure or damage occurs to one half of the ECU, ABS braking function shall be maintained in the wheels that are controlled by the working part of the ECU.

All electrical harnesses utilized to provide the antilock brake system shall be separate and independent of all other coach wiring. Under no circumstances shall antilock brake wiring harnesses, with the exception of 12 volt power and ground wires, the serial interface wiring, and the abs warning light circuit, be combined with or retained in existing harness looms, tape or trunks. The wires that carry information and power into and out of the controller shall be terminated with a weatherproof connector with the wiring sealed to the connector with the exception of the ECU connectors. The wire gauge used shall be sized specifically for the task which it is designed to perform. A dashboard mounted antilock condition lamp shall be provided which shall be controlled by the ECU via the multiplex modules and shall serve as a means of providing the operator with the operating condition of the antilock brake system.

The Data Link function shall be provided which enables the ECU to report its operating condition to an external source. The controller data link configuration shall conform to SAE standard J1708 and the coded language used shall conform to SAE J1587. Two connections in the controller shall be provided.

#### **TS 3.5.1.4 AIR SYSTEM**

The coach air system shall operate all accessories and the braking system with reserve capacity.

The engine drive air compressor or approved equal shall be sized to charge the air system brake reservoir from 0 psi to the governor cutoff pressure of 130 psi±2 psi in less than 3 minutes while not exceeding the engines rated speed. The air compressor shall be set to cut in at a 20 psi delta between cut in and cut out pressure.

Regardless of the systems air pressure, idle up to the rated engine speed shall be available to the driver with the transmission in neutral and the parking brake applied.

With the air system fully charged and the engine shut off, the reservoir capacity shall be sufficient to permit four full brake applications to maintain 60 psig. The pressure relief valve shall be mounted in the compressor cylinder head. The muffler or ping tank shall be mounted in the engine compartment relative to the air compressor discharge port. A drain mounted on the muffler or ping tank shall be directed or piped so as to discharge below the engine cradle or bulkhead level.

Air lines, except necessary flexible lines, shall conform to the installation and material requirements of SAE Standard J844-Type 1 or ASTM B-75 for copper tubing with standard, brass, flared or ball sleeve fittings, or SAE Standard J844-Type 3B for nylon tubing or ASTM D-1248, Type 1, Class C Grade E5 for polyethylene tubing if not subject to temperatures over 200<sup>0</sup> F. Accessory and other noncritical lines may use Type 3A tubing. Nylon tubing shall be installed in accordance with the following color coding standards:

<i><b>HOSE COLOR</b></i>	<i><b>AIR SYSTEM INSTALLATION</b></i>
<i><b>Green</b></i> .....	Indicates primary brakes and supply
<i><b>Red</b></i> .....	Indicates secondary brakes
<i><b>Brown</b></i> .....	Indicates parking brake
<i><b>Yellow</b></i> .....	Indicates compressor governor signal
<i><b>Black</b></i> .....	Indicates accessories
<i><b>Blue</b></i> .....	Indicates suspension

Line supports shall prevent movement, flexing, tension strain, and vibration. Copper lines shall be supported by looms, grommets, or insulated clamps to prevent the lines from touching one another or any component of the coach. To the extent practicable and before installation, the lines shall be pre-bent on a fixture that prevents tube flattening or excessive local strain. Copper lines shall be bent only once at any point, including pre-bending and installation. Rigid lines shall be supported consistent with standard automotive practice. Nylon lines may be grouped and shall be continuously supported.

The compressor discharge line between power plant and body mounted equipment shall be flexible extruded PTFE tube with stainless steel wire braid, Aeroquip 2807, or approved equal. Other lines necessary to maintain system reliability shall be flexible Teflon hose with a braided stainless steel jacket. End fittings shall be standard SAE or JIC brass or steel, flanged, reusable, swivel type fittings. Flexible hoses shall be as short as practicable and individually supported. They shall not touch one another or any part of the coach except for the supporting grommets. Flexible lines shall be supported at 2 foot intervals or less. Airlines shall be installed to minimize air leaks. Each coach shall not leak down more than 1.5 psi as indicated on the instrument panel mounted air gauges, within 15 minutes from the point of governor cut-off.

All reservoir supply and delivery airlines shall be sloped toward reservoirs and routed to prevent water traps. Grommets shall protect the airlines at all points where they pass through understructure components. Provision shall be made to apply shop air to a convenient location in the engine compartment and at the front of the coach and shall include a Schrader standard bore valve. The engine compartment Schrader valve shall be located ahead of a quarter turn valve. Air for the compressor shall be filtered through the main engine air cleaner system. All air reservoirs shall meet the requirements of SAE Standard J10 and shall be equipped with clean-out plugs and quarter-turn drain valves. These valves shall be protected from road hazards by major structural members. The air system shall be protected by a pressure relief valve set at 200 psi at the air dryer and 150 psi at the compressor. The air system shall also be equipped with check valves and pressure protection valves to assure partial operation in case of line failures.

The main airline check valve located between the air compressor and the first reservoir must be accessible for maintenance. Means shall be provided to establish the check valve to be in working order.

Dual model Bendix AD-IP-DLU or **single Wabco SS1200** air dryer shall be provided and installed according to component manufacturer's recommendations. A coalescing filter shall be provided. The coalescing filter shall be installed between the air dryer and the wet tank. Separator shall be within four feet of the air dryer. Inlet air temperature is not to exceed 150° from the compressor.

## **TS 3.6 GENERAL CHASSIS**

### **TS 3.6.1 WHEELS AND TIRES**

#### **TS 3.6.1.1 WHEELS**

Bright finish (both sides) and polished aluminum wheels shall be provided and shall be hub piloted. All wheels shall be interchangeable and shall be removable without a puller. Wheels shall be compatible with tires in size and load-carrying capacity. Front wheels and tires shall be balanced as an assembly. Wheels shall be capable of accommodating Load Range L radial tires.

One spare wheel, complete with mounted tire shall be provided.

The wheel nuts shall meet all physical property requirements defined in ASTM A 194-2H, ISO and SAE standards. The nut shall be phosphate coated for corrosion resistance. The bench testing requirements for the lug nuts shall satisfy MIL-STD 1312 vibration test 7 and the Junkers dynamic test. Front and tag axle lug nuts shall be standard Meritor components.

#### **TS 3.6.1.2 TIRES**

The tires shall be supplied by the vehicle manufacturer. Tires, including spare, shall be XZA2 Energy or **FS400** tubeless radial, 315/80R - 22.5, 20 ply, load range L. **The manufacturer will be required to contact Pace's Tire Lease Contractor and use the current requested tire model.** Tires shall be suitable for the conditions of commuter service and sustained operation at the maximum speed capability of the coach. Load on any tire at GVWR shall not exceed tire supplier's rating. Tires shall provide the ride, noise, and handling characteristics associated with the demands of commuter service. A mounted spare tire shall be provided.

### **TS 3.6.2 FUEL SYSTEM**

#### **TS 3.6.2.1 FUEL TANK**

A polyethylene fuel tank **or approved equal, (aluminum or stainless steel)** shall be provided and securely mounted to the coach to prevent movement during coach maneuvers and shall be easily removable for cleaning or replacement. The fuel tank will have a total volume of 173 US gallons with a useable 95 % maximum capacity of 164 US gallons.

The fuel tank shall be equipped with an external, hex head, brass drain plug. The drain plug shall be at least 0.375 inch size and shall be located at the lowest point of the fuel tank. Access covers

shall not be provided. The tank shall be baffled internally to prevent fuel sloshing noise regardless of fill level. Baffles shall run the full height and length of the tank.

The baffles and fuel pickup location shall assure continuous full power operation on a 6% upgrade for 15 minutes starting with no more than 25 gallons of fuel over the unusable amount in the tank. The fuel pickup tube shall be perforated and mounted to the bottom face of the tank.

The fuel tank shall have a permanently affixed plaque stating manufacturer, certification, capacity and date of manufacture. The plaque shall be clean and legible after the undercoating process, and shall comply with EPA requirements. The plaque shall be substantially visible when the fuel fill door is opened. A non-heated Fuel Pro™ fuel filter shall also be provided. A clear cover will allow visual inspection of filter and fuel condition and fuel flow.

### TS 3.6.2.2 FUEL FILLER

An Emco-Wheaton or approved equal “Dry Break” shall be provided and installed. The fuel filler shall be designed to fill the fuel tank to the fill point, shall automatically shut off when fueling is complete, and shall eliminate foaming and blow back. The filler cap shall be recessed into the body so that spilled fuel will not run onto the outside surface of the coach. The filler shall accommodate a fill rate of 25 GPM of foam-free fuel without causing the nozzle to shut off before the tank is full. An audible signal shall indicate when the tank is essentially full.

### TS 3.6.3 BUMPER STRUCTURES

#### TS 3.6.3.1 LOCATION

Bumpers shall provide impact protection for the front and rear of the coach up to 26 inches above the ground. The bumpers shall wrap around the coach to the extent practicable without exceeding allowable coach width.

#### TS 3.6.3.2 FRONT AND REAR BUMPERS

The **front bumper** assembly, nominally 20 inches high, shall consist of three energy absorbing modules that are self-restoring black urethane with minimum 1700 psi tensile strength, 250% elongation, and 350 psi tear strength. The hollow ribbed black urethane cover will have excellent resistance to tears, abrasion, salt, hydro-carbons, detergents, sunlight, and will be repairable. An inner support structure constructed of aluminum or high strength steel shall provide a single, full length structural support for bumper the modules. The bumper assembly shall be hinged at the bottom for access to the spare tire, with the bumper release lever located at the top of the front roadside service compartment.

The **rear bumper** will be nominally 11 inches high consisting of a rigid steel and aluminum inner support structure with a repairable hollow ribbed black urethane cover. The bumper shall be shaped to wrap around the coach rear corners to protect the engine compartment doors and will also incorporate an anti-ride, or pinning feature to prevent unauthorized riders.

~~The damping system built into the bumper will operate on air at atmospheric pressure to absorb and dissipate impact forces applied to the bumper in the event of a minor collision.~~ The outer

bumper cover will have excellent resistance to tears, abrasion, salt, hydro-carbons, detergents, and sunlight. The complete assembly will be self-contained, self-restoring and maintenance-free.

### TS 3.6.4 ELECTRICAL SYSTEM

#### TS 3.6.4.1 GENERAL REQUIREMENTS

The basic coach electrical control and wiring system shall be I/O Controls T-2 DINEX or Parker/Vansco Multiplex System. ~~or approved equal.~~ Versatility and future expansion of the system shall be provided for by expandable system architecture. The system shall be SAE J1708 compatible. Gateway devices used to interface the vehicle level control system shall utilize the above recommended industrial standard with the communication protocol being either full or half duplex.

The system components shall be capable of reliable operation in an environment of between minus 30°C to plus 80°C while encountering mobile shock and vibration. Each module shall be adequately shielded to prevent interference by EMI and RFI. Each module that requires an ID shall be equipped with an Intelligent Key feature. This eliminates the need of electronically writing the ID or the need to provide a unique wire harness for each module. At the time a module needs to be replaced, the Intelligent Key can be transferred to the new module by hand further eliminating the need for special tools at all maintenance intervals.

The multiplex power source is isolated thereby avoiding any ground noise. A built in self-test (BIST) system utilizes the left and right turn signal telltales to flash diagnostic codes when activated. The BIST will check for module communication failures or output feedback problems within the system, and display module faults on the right turn signal telltale or module output faults on the left turn signal telltale. The BIST is activated with the engine override switch and will self-terminate after it has completed one cycle.

The components of the multiplex system shall be of modular design thereby providing for ease of replacement by field maintenance personnel. Furthermore, each module shall utilize LED's to indicate circuit integrity and assist in rapid circuit diagnostics and verification of the load and wiring integrity. Each circuit shall be capable of providing a current load of up to 10 amperes of continuous load or 20 Amperes intermittent. The internal controls device shall be a solid state device, providing an extended life service cycle. Protection to each individual circuit shall be provided be either non-self-resetting circuit breakers or fuses. Programmable time delay functions and integrated flasher capabilities shall be contained in the control module.

The electrical system shall provide and distribute power to ensure satisfactory performance of all electrical components. The system shall supply a nominal 24 volts of direct current. Precautions shall be taken to minimize hazards to service personnel. Transient voltages above 220 volts may be used in fluorescent lighting systems.

The power generating system shall be rated to provide sufficient power. A 24 volt, 320 amp nominal alternator shall be provided with the basic commuter coach package. All circuits shall be protected by circuit breakers, fuses or solid state devices. One ground may be the coach body and



framing and shall be attached to ground studs. Grounds shall not be carried through hinges, bolted joints (except those specifically designed as electrical connectors), or powerplant mountings. Wiring and electrical equipment necessarily located under the coach shall be insulated from water, heat, corrosion, and mechanical damage.

All electrical connectors shall be packed with approved dielectric grease.

#### **TS 3.6.4.2 MODULAR DESIGN**

Design of the electrical system shall be modular so that each major component, apparatus panel, or wiring bundle is easily separable with standard hand tools or by means of connectors. Each module, except the main body wiring harness, shall be removable and replaceable in less than 30 minutes by a mechanic. Power plant wiring shall be an independent wiring module. Replacement of the engine compartment wiring module(s) shall not require pulling wires through any bulkhead or removing any terminals from the wires.

#### **TS 3.6.4.3 JUNCTION BOXES**

All relays, controller, flashers, and other electrical components shall be mounted in easily accessible junction boxes. The boxes shall be sealed to prevent moisture from normal sources, including engine compartment cleaning, from reaching the electrical components and shall prevent fire that may occur inside the box from propagating outside the box. If a rear junction box is required, it shall be located away from the surge tank or properly protected from coolant overflows. The components and circuits in each box shall be identified and their locations recorded on a schematic drawing permanently glued to or printed on the inside of the box cover or door. The drawing shall be protected from oil, grease, fuel, and abrasion. A rear start and run control box shall be mounted in an accessible location in the engine compartment. No electrical controls shall be located where spillover from the surge tank can wash over the electrical controls or enter junction boxes.

Care shall be taken to route electrical harnesses from junction boxes to facilitate troubleshooting and to reduce defects. Terminal strips not blocks shall be used to make connections. Wiring under the coach floor, from the front to the rear, in the baggage area shall be routed in an enclosed raceway or trough which shall allow for replacement / repair of existing harnesses.

#### **TS 3.6.4.4 WIRING AND TERMINALS**

All wiring between major electrical components and terminations, except battery wiring, shall have double electrical insulation, shall be waterproof, and shall meet specification requirements of SAE Recommended Practice J555 J1292 and J1128 Type TXL or GXL. All wiring harnesses manufactured for coaches purchased under this contract shall be designed and manufactured for the operation of all sub components installed on the coaches. Harnesses shall be properly designed and sized to the coach. Battery wiring shall conform to specification requirements of SAE Standard J1127-Type SGX, SGT or SGR and SAE Recommended Practice J541.

All wiring shall be properly grouped, numbered, and color-coded full length. Numbering shall be stamped at least every three (3.0) inches. Installation shall permit ease of replacement. All wiring harnesses over 5-feet long and containing at least five (5) wires shall include at least 2 or 10%

excess wires whichever is greater for spares, excluding the battery cables. **Manufacturer harnesses considered as “non-serviceable” shall be subject to Pace approval at Pre-Production meetings.** In addition, twelve (12) spare wires distributed proportionally between the lightest and heaviest gauge used (excluding battery cables) shall be provided between the front and rear junction boxes. Wiring harnesses shall not contain wires of different voltages unless all wires within the harness are sized to carry the current and insulated for the highest voltage wire in the harness.

Double insulation shall be maintained as close to the terminals as practicable. The requirements for double insulation shall be met by wrapping harnesses with plastic electrical tape or by sheathing all wires and harnesses with nonconductive, rigid or flexible conduit. Grommets of elastomeric materials shall be provided at points where wiring penetrates the metal structure. Wiring supports shall be nonconductive. Precautions shall be taken to avoid damage from heat, water, solvents, or chafing. Wiring length shall allow replacement of end terminals twice without pulling, stretching, or replacing the wire.

Battery cables and alternator/generator output cables shall utilize AMP terminal ends or approved equal. Except for those on large wires such as battery cables, terminals shall be crimped to the wiring. Terminals shall be full ring type or interlocking and corrosion-resistant. T splices may be used when it is less than 25,000 circular mills of copper in cross-section; a mechanical clamp is used in addition to solder on the splice; the wire supports no mechanical load in the area of the splice; and the wire is supported to prevent flexing.

**TS 3.6.5 ELECTRICAL COMPONENTS**

**TS 3.6.5.1 GENERAL REQUIREMENTS**

All electrical components, including switches, relays, flashers, and circuit breakers, shall be heavy-duty designs. To the extent practicable, these components shall be designed to last the service life of the coach and shall be replaceable in less than twenty five (25) minutes by a mechanic. Sockets of plug-in components shall be polarized where required for proper function and the components shall be positively retained. Any manual reset circuit breakers critical to the operation of the coach shall be mounted in a location best suited to the application with visible indication of open circuits. The electric motor shall be heavy-duty either wound field type or permanent magnet, as listed below. Electric motors shall be located for easy replacement and except for the cranking motor the brushes shall be replaceable in less than fifteen (15) minutes without removing the motor. Provision shall be made to ensure that the lubrication line for alternator bearing is secured to prevent lubricant leaks.

<i><b>SYSTEM MOTOR</b></i> (minimum)	<i><b>TYPE</b></i>
<i><b>Main Evaporator</b></i> .....	Brushless
<i><b>Condenser Motors</b></i> .....	Brushless
<i><b>Driver’s Heater and Defroster</b></i> .....	Permanent Magnet
<i><b>Coolant Recovery Pump Motor</b></i> .....	Permanent Magnet
<i><b>Windshield Wiper Motor</b></i> .....	Permanent Magnet
<i><b>Windshield Washer Motor</b></i> .....	Permanent Magnet



Dual electric horns shall be provided. Horns shall be positioned to be protected from road hazards and the elements. The horn trumpets shall be down turned to assure drainage of any moisture that may have entered.

#### **TS 3.6.5.2 BATTERIES**

Batteries shall be easily accessible for inspection and serviceable only from outside the coach. Batteries shall be of premium construction and shall be fitted with threaded stud terminals. Batteries shall Group 31 AGM with minimum 1350 cold cranking amp capacity with 450 CCA reserve minimum. Batteries shall have Bluetooth diagnostics. Battery terminals shall be located for access in less than thirty (30) seconds with jumper cables. No less than four AGM (Absorbed Glass Mat) shall be provided. Battery cables shall be flexible and sufficiently long to reach the batteries in extended positions without stretching or pulling on any connection and shall not lie on top of the batteries. Battery cables are black with red for 24 v (+), blue terminals for 12 v (+) and black terminals for ground (-). A slave connection to the batteries shall provide a direct connection to the batteries for jump starting.

#### **TS 3.6.5.3 MASTER BATTERY SWITCHES**

A master battery switch shall be provided near the batteries to provide complete, simultaneous disconnecting of the batteries from all coach 12- & 24-volt electrical systems. The master switch shall be located behind a dedicated access door and shall be accessible in less than ten (10) seconds for operation. The master switch shall be capable of carrying and interrupting the total circuit load. Opening the master switch with the power plants operating shall not damage any component of the electrical system. Pace fare box, camera systems, IBS and communication systems shall be direct wired to the batteries and bypass any and all disconnects. Pace fare box shall be connected to a source that does not power down for a minimum of thirty minutes.

#### **TS 3.6.5.4 RADIO NOISE SUPPRESSION**

Proper suppression equipment shall be provided in the electrical system to eliminate interference with radio and television transmission and reception. This equipment shall not cause interference with any electronic system on the coach. Suppression shall be in accordance with SAE Practice J1708 and FCC standards.

### **TS 3.7 INTERIOR CLIMATE CONTROL**

#### **TS 3.7.1 CAPACITY AND PERFORMANCE**

The climate control system shall be highly reliable since most failures are Class 2. Manually controlled shut-off valves shall be installed in the refrigerant lines before and after the filter dryer to allow isolation of the dryer for service. Manually controlled shut-off valves in the refrigerant lines shall allow isolation of the receiver and compressor for service. Self-sealing couplings or manual shut-off valves shall be used to break and seal the refrigerant lines during removal of major components such as the refrigerant compressor or condenser. Condenser and evaporator fans shall have a protective guard to prevent contact between mechanics and rotating fan blades. The appropriate safety warning labels shall be permanently affixed at this location.

Interior climate control system shall be provided and operate on refrigerant R134A. It shall maintain the interior of the coach at a level suitable for climate conditions found in the continental United States. The heating, ventilating, and cooling systems shall maintain an average passenger compartment temperature between 60°F and 80°F with a relative humidity of 50% or less. The system shall maintain these conditions in a ambient temperature range of 10°F to 100°F, with a ambient humidity range of 5 to 100% while the coach is running. In ambient temperatures of 95°F to 115°F with relative humidity greater than 50%, the system shall maintain a temperature gradient of 20°F while the coach is running. In ambient temperatures of 10°F to -10°F, the average interior temperature shall not fall below 55°F when the coach is running with no passengers.

The air conditioning (AC) compressor shall be a four cylinder, short stroke. The compressor head and body shall be of rust proof aluminum construction, providing a light weight, compact and efficient unit. The connecting rods shall be of one piece construction for easy, long-life maintenance. Exchangeable cylinder liners shall be used in the cylinder bores for long service life and easy and efficient maintenance. The compressor shall be belt driven through a bi-directional & maintenance free magnetic clutch.

Compressor drive belts shall be manufactured from Kevlar<sup>®</sup> material to provide longer service life. A manually (or automatic as approved by the engine manufacturer) adjustable belt tensioning device shall be provided to maintain proper belt tension.

The main air conditioning system capacity shall be at least 90,000 Btu's/hr. with R134A. Driver's A/C capacity shall be at least 10,800 Btu's/hr.

The condenser fan motors with shrouded axial fans shall be brushless type with totally enclosed grease lubricated bearings. Motor shall be 24 volt, minimum 2 HP and operate only when the A/C is on for maximum efficiency. The condenser core shall be located to the rear of the number 2, baggage bay and include copper tubes and copper fins and have approximately 1,200 in<sup>2</sup> of condensing surface. The receiver tank shall be equipped with a refrigerant sight gauge to be viewed through a window in the left-hand number 3 baggage compartment.

The evaporator shall be mounted under floor in the same compartment as the heater core for "Reheat Cycle" and humidity control and shall include copper tubes and aluminum fins.

A separate control shall be provided for the front dash heating and air conditioning, as well as for the main under floor unit. A HVAC system control panel is required for the main under floor system. Control shall be within easy reach of the operator. The system shall allow the driver to set a specific interior coach temperature between the range of 60°F and 80°F. The outside temperature can be displayed by switching between interior and exterior on the control panel. The HVAC controller shall monitor the temperature so that the interior temperature selected is maintained consistently. Where practicable, all controls shall be of a solid state design.

The system shall be designed with return air ducts at both front and rear of coach for balanced airflow. The system shall introduce a minimum of 10% fresh outside air when the fresh air intake is open.

Heat shall be applied to the front step tread to prevent accumulation of snow, ice, or slush. Step well heat shall be supplied and controlled by the driver's heater and defroster system. The manufacturer shall provide and install two Schrader style valves or approved equal with caps near the air conditioning compressor.

All electric motors which are part of the climate control system shall be permanent magnet type, except the Condenser and Main Evaporator motors, which shall be brushless type. Motors shall have double sealed, pre-lubricated anti-friction, replaceable ball bearings with moisture resistant grease. 3/8 inch and 5/16 inch diameter zinc terminal studs with bonded internal motor leads and anti-rotation insulators shall be used except driver's evaporator and parcel rack evaporators.

### **TS 3.7.2 CONTROLS**

The heating, cooling, ventilating and off operational modes of the interior climate control system shall be controlled by switches or displays conveniently located to the driver. In the heating and cooling modes, the system shall be governed by an electronic control that regulates the amount of cooling and heating capacity available to the passenger area. The temperature will be adjustable between 60°F and 80°F. The temperature sensors used must be suitable for transit service and accurate to +/- 1°F.

### **TS 3.7.3 AIR FLOW**

#### **TS 3.7.3.1 PASSENGER AREA**

The cooling mode of the interior climate control system shall introduce air into the coach up along the sidewall at a minimum rate of 25 CFM per passenger based on the standard configuration coach with full standee load. This air shall be composed of no less than 10% outside air. Airflow shall be evenly distributed throughout the coach with air velocity not exceeding 60 FPM on any passenger.

Heated air introduced into the coach shall contain no less than 10% outside air. In the heating mode, the fans will activate immediately to assure an air outlet temperature of 70°F. Outside airflow may be cut off during initial warm up/cool down, provided that manual adjustment is not required.

#### **TS 3.7.3.2 DRIVER'S AREA**

The coach interior climate control system shall deliver at least 200 CFM of air to the driver's area when operating in the ventilating and cooling modes. Adjustable nozzles shall permit variable distribution or shut down of the airflow. A separate heater or windshield defroster unit shall be capable of diverting heated air to the driver's feet and legs. The defroster motor shall be a permanent magnet type motor. The defroster or interior climate control system shall maintain visibility through the driver's side window. A separate evaporator, fan and control shall supply conditioned air to the driver's area. Drivers area shall not be controlled or operated by cables to control water valves or to divert the air flow.

### **TS 3.7.3.3 AIR INTAKE**

Outside openings for air intake shall be located to ensure cleanliness of air entering the climate control system, particularly with respect to exhaust emissions from the coach and adjacent traffic. All intake openings shall be baffled to prevent entry of snow, sleet, or water. Outside air shall be filtered before discharge into the passenger compartment. More efficient air filtration may be provided to maintain efficient heater and/or evaporator operation. The air filter shall be easily removed for service. Moisture drains from air intake openings shall be located so that they will not be subjected to clogging from road dirt but shall be accessible for cleaning and inspection.

## **TS 3.8 AUXILIARY EQUIPMENT AND SYSTEMS**

### **TS 3.8.1 FARE BOX**

Space and installation shall be provided for Pace's current fare box system. Based on a template and installation instruction to be provided to the contractor during pre-construction meetings the contractor shall drill mounting and conduit for wiring into the floor close to the front dash. Provision shall include a fused 30-amp power supply and ground which does not go to sleep until 30 minutes after the coach has been turned off.

### **TS 3.8.2 VENTRA**

The contractor shall provide pre wiring and rough in installation for Pace's Ventra fare system. The contractor shall provide from Cubic a dump module for the power supply of the Ventra unit. Pre drilling, wiring with all connectors, and routing for the Ventra unit shall be provided for the Driver Terminal, and the Mobile Validator. Provision shall include a power supply for the dump module and ground which does not go to sleep until 60 minutes after the coach has been turned off.

### **TS 3.8.3 INTELLIGENT BUS SYSTEM (IBS)**

Pace's current IBS system shall be pre wired into the coach. The contractor shall contract Trapeze in order to provide and install at the Contractor's manufacturing plant all harnesses, conduits, raceways, brackets, passenger counting sensors, antennas, handset, speakers, power supplies with all connectors to match Pace's current IBS system. The installation of Pace owned equipment to complete the Pace IBS system, the radio(s), IVLU and MDT monitors shall be installed by Pace after delivery. The radio(s), IVLU and MDT are not to be supplied by the contractor as part of this contract.

Supply of components shall include all brackets, hardware, fasteners, wiring, connectors, communications cabling, antennas, cabinets, switches, position sensors, circuit protection, handsets, terminals and distribution panels. The pre-installation by the Contractor shall incorporate a sensor mounted overhead in the door header which shall supply input signals to be used by the APC unit.

The Contractor shall be responsible for contracting Trapeze to install and test all required wiring before Pace installs the IBS systems and sub-systems. Contractor and Trapeze installed materials which fail to function after delivery shall be the responsibility of the Contractor to correct.

Preparations shall include the following:

1. Provide and install secure locking placement for the protection of the equipment. One lock per required compartment door.
2. The cabinets shall have four (4) individual separate latching sliding or tilt trays or racks for component installations. Trays, slides and or racks shall be secured with Nyloc nuts.
3. Provide and install separate and dedicated 3.0 inch minimum, or equal in size, flexible watertight conduit or raceway from:
  - a. The operator's right-side console to inside of the equipment cabinet.
  - b. The operator's left side console to inside of the equipment cabinet.
  - c. The passenger door headers to inside of the equipment cabinet.
  - d. The inside of the destination sign compartment area to inside of the equipment cabinet.
  - e. Pull wires shall be supplied from each location in each conduit.
4. Provide and install separate and dedicated 1.0-inch flexible watertight conduit from:
  - a. Inside of the equipment cabinet to an area typical and to be determined for a 700 MHz radio antenna.
  - b. Inside of the equipment cabinet to an area typical and to be determined for a 800 MHz radio antenna.
  - c. Inside of the equipment cabinet to an area typical and to be determined for a GPS antenna.
  - d. Inside of the equipment cabinet to an area typical and to be determined for a WAN antenna.
  - e. Pull wires shall be supplied in each conduit.
5. Provide and install fuse protected dedicated 12 VDC with power and ground direct from the battery with no splices, connections or interruptions from the battery compartment to the equipment cabinet. The battery 12 VDC power and ground shall terminate at an adequately sized terminal strip which will allow for 30 amps of service to be distributed from this connection.

6. Provide and install an information interpreting gateway for input output signals from analog to digital and back for the purpose of communication from the coach systems information (speedometer pulse, odometer pulse, passenger door position, brake applied status, engine warning, transmission warning, stop request, Public Address microphone, wheelchair and fire warning).
7. Install connections from the gateway to the terminal connector in the equipment cabinet for speedometer pulse, odometer pulse, passenger door position, brake applied status, engine warning, transmission warning, stop request, Public Address microphone and fire warning.
8. Four (4) interior antenna access plates shall be installed in the interior ceiling panel to allow for ready service for each of antenna connections.
9. Provide and install for both a 700 and an 800 MHz transmission equipment separate low profile, high gain antennas.
10. Provide and install a GPS antenna compatible with the IVLU.
11. Provide and install a WLAN antenna compatible with the IVLU.
12. Antenna mounts shall be pre drilled to a size to be determined during pre-production meetings with the Contractor and sealed weather tight.
13. The Contractor shall pre drill for and install rivet nuts for securing:
  - a. Four (4) fasteners each for two radio transceiver retainers.
  - b. Four (4) fasteners for radio power filter retainer.
  - c. Four (4) fasteners for radio handset/headset plate retainer.
  - d. Four (4) fasteners for MDT plate.
  - e. Four (4) fasteners for IVLU plate.
  - f. Two (2) fasteners for interior speaker plate.
  - g. Four (4) fasteners for exterior speaker plate.
  - h. Four (4) fasteners for one-line sign plate.
  - i. Eight (8) fasteners in the passenger door header plate for overhead sensing of motion and movement. With two pre drilled installation openings.

14. The Contractor shall pre drill and install grommets for installation of a covert microphone.
15. Provide and install a twenty-four (24) connection terminal strip with easily readable identifiers.

The Contractor and Trapeze are responsible to supply and install all components to match the current Pace IBS system. The following is provided for information and reference and does require verification and may require upgrade;

1	10T0014-001	SIGN, ADAPTIVE, ONE LINE, ADDRESS 1	10T0014-001
1	24T0016-001	COVERT MIC	24T0016-001
1	24T0058-001	COVERT SWITCH	24T0058-001
2	24T0085-003	Diode, Rectifier, 1 Amp, 200V	24T0085-003
1	24T0486-002	ANTENNA, DUAL-BAND, GPS / WLAN	24T0872-001
2	24T0662-001	ANTENNA, 3 db GAIN, 760-870 MHz, BLACK	24T0662-001
1	25T0128-103	HANDSET, 36" ARMORED CABLE	25T0128-103
5	27T0012-001	Wire, Automotive, 16 Awg, Black	27T0012-001
1	32T0163-002	KIT, INSTALLATION HARDWARE, AFTERMARKET, FIXED ROUTE	32T0163-002
1	45T0152-021	MATRIX SENSOR, FLUSH MOUNT, DOOR 1	45T0152-021
1	50T0009-001	SPEAKER, LARGE, MODIFIED	50T0009-001
1	50T0035-001	J1708 DISTRIBUTION BOX	50T0035-001
2	50T0040-001	Relay Assembly, PA Interface	50T0040-001
1	61T1481-001	Plate, MDT RAM, Speaker, MCI	61T1481-001
1	65T0125-003	Ram Dbl Socket Arm 4.5" LG	65T0125-003
1	65T0125-010	Base, Ram Mount, 1.50 Dia Ball	65T0125-010
1	75T1561-008	CABLE, MDT, LVDS, MDR, MALE TO MALE, 8M	75T1561-008
1	75T0135-010	Safety Cable, MDT Wall Mount, 10"	65T0236-001
1	75T0352-001	CABLE, POWER, J1708, 25 FT	N/A
1	75T0369-020	Cable Ext, J1708 to Destination Sign, 20 FT	75T0369-020



1	75T0417-025	Cable, Extension, J1708 Box to Farebox, 25 FT	75T0417-025
1	75T0510-008	CABLE, RELAY HARNESS, ELDORADO - PACE	N/A
2	75T0553-020	CABLE, ANTENNA, MINI-UHF to N 90 Deg, 20 FT	75T0553-020
1	75T0793-025	CABLE, GPS, FAKRA CONN, 25 FT	75T0819-025
1	75T0793-125	CABLE, WLAN, FAKRA CONN, 25 FT	75T1106-025
1	75T1223-110	CABLE, ETHERNET M12 M to RJ45, 10M	75T1770-110
1	75T1342-020	Cable, Extension, J1708 Box, 20 FT	75T1342-020
1	75T1507-W1A	Cable, V8 IVLU, W1A, Fixed Route, Pace	75T1818-001
1	75T1507-W1C	Cable, V8 IVLU, W1C, Fixed Route, Pace	75T1822-001
1	75T1507-W1D	Cable, V8 IVLU, W1D, Fixed Route, Pace	75T1820-001
1	75T1507-W2	Cable, V8 IVLU, W2, Power, 2-Radio, Pace	75T1833-001
0.5	85T0028-003	Din Rail	85T0028-003
1	25T0251-100	SURFACE MOUNT BRACKET FOR MATRIX SENSOR	25T0251-100
1	25T0251-201	BRACKET, SPACER, IRMA MATRIX	25T0251-201
1		POWER DISTRIBUTION BOX, RADIO & MODEM Power Cable, Tait, Hi Power	50T0197-003 75T 1657-001

**TS 3.8.4 PUBLIC ADDRESS SYSTEM**

A public address system which functions through the Pace IBS Trapeze system shall be installed that enables the driver to address passengers either inside or outside the coach. A total of 27 interior speakers shall broadcast, in a clear tone, announcements that are clearly perceived from all seat positions at approximately the same volume level. Speaker shall be provided outside above the entrance door so that announcements can be clearly heard by passengers standing near the door(s). A driver controlled switch shall select inside or outside announcements. A separate volume control shall be provided for the outside system if volume adjustment would otherwise be necessary when switching from inside to outside. The system shall be muted when not in use. The microphone shall not interfere with the operation of the mobile radio system or the Pace IBS system which uses the same speakers. A separate wireless microphone with holder and charger shall be installed in an overhead and enclosed, secure compartment.

**TS 3.8.5 VIDEO SURVEILLIANCE SYSTEMS**

**TS 3.8.5.1 LYTX DRIVECAM**

Pre installation wiring, switches and brackets shall be provided and installed for DriveCam LYTX Model SF 300.



**TS 3.8.5.2 APOLLO SURVEILLANCE SYSTEM 4K HD or Approved Equal**

The coach shall be equipped with no less than eight (8) cameras, four (4) interior ( a 360° in close proximity to the wheel chair loading area, a 360° in the center aisle approximately 8' from the rear of the coach, a 360° in the center of the aisle above the standee line, a 360° to be determined during pre-production meetings with the contractor) and four (4) exterior views (forward from front center of coach, rearward from rear of coach, roadside from aft of operator forward at the roof line, and curbside from above the entrance door at the roof line towards the back of the coach) and associated wiring provisions to allow continuous monitoring of the coach for purposes of safety and security. The cameras shall be mounted to provide a clear view of entire passenger compartment, operators area and cameras and the system shall be protected to prevent tampering and vandalism. The system shall record on a MIL spec certified recorder with removable hard drive, storage of not less than four (4) terabyte shall be provided. The recorder system shall meet all SAE JE 1455 shock and vibration testing. The digital event recorder must be capable of recording up to a minimum of 8 high resolution color cameras simultaneously at up to 24 FPS and allow for the possible expansion to twelve (12) cameras in the future. Systems that require a camera switcher or external multiplexer to achieve the video input specifications will not be considered. The digital event recorder must be capable of recording audio during operation through two (2) standalone or camera incorporated microphones. Audio pick up shall be near the coach operator area and aft of the wheel chair lift door in the passenger area.

The system shall run self-diagnostics at start up and report any problems with cameras, power supply, recorder and storage media as a minimum.

The DRD must utilize a Removable Hard Drive for retrieving recorded video. The removable hard drive must be housed in a non-plastic shock and vandal resistant casing that may be quickly removed from the coach to allow video to be played back at a PC workstation. Hard drive removal keys are a security item and shall be treated as such. Keys shall not be left in the unit during construction of the coaches. The keys shall be shipped to Pace under separate cover.

The digital event recorder must utilize a Remote LCD system display that provides system status. A panic/event button will be installed to allow the driver to tag events. The system shall include an accel/decel sensor that shall automatically tag and record any impacts or hard braking.

The system shall include multiple inputs for recording brakes, turn signals, headlamps and door activation.

Video recorded in AVI, MOV, MPEG, JPEG, and MJPEG formats is not acceptable.

All recorded data must be digitally watermarked for authentication purposes and to prevent tampering and recorded in a format that is not recognized by off the shelf media player software (this ensures integrity of the data and courtroom admissibility).

The digital event recorder must include and be capable of interfacing with a GPS receiver to provide GPS Longitude, GPS Latitude, GPS Heading, and GPS speed of the coach always.

The system module shall be in a secured, sealed compartment with adequate provisions for easy removal/replacement of hard drive for downloading of recorded information. Locks shall be keyed same as radio compartment.

A minimum of four decals/signs notifying passengers of surveillance cameras on-board shall be installed in plain view throughout the coach.

**Note:** The Contractor must provide Pace with a list of all installed Video Surveillance System components and their associated serial numbers.

Each coach will be equipped with eight stand-alone CCD high resolution color cameras, six for the interior, one for the roadside exterior and one for the curbside exterior. Cameras must be high resolution, have a minimum of 470 lines of resolution and LED's for night vision. The cameras must be protected by and enclosed in heavy-duty water resistant, tamper proof housings. Cabling shall be RG-59 minimum and wiring for cameras, audio and power supply shall be highest quality commercially available and utilize standard connectors for camera interchangeability.

Viewing software shall be WEB based. The viewing software must be capable of viewing video from up to eight (8) cameras simultaneously. The viewing software must allow for the user to play back surveillance video clips to the playback stations hard drive. The viewing software must have a zoom mode that allows for the user to zoom up to ten (10) times using both a zoom slide bar or "rubber banding" within an image. The viewing software shall display the fleet ID number, camera number, and time and date of recorded video. The viewing software shall allow for synchronized playback of audio with multiple audio filtering options. The viewing software shall allow for searching for specific video via date and time.

### **TS 3.8.6 TIRE PRESSURE MONITOR**

A wireless tire pressure monitor system shall alert the operator when any tire's air pressure or temperature goes outside of the tire manufacturers recommended parameters.

### **TS 3.8.7 FLEETWATCH SYSTEM**

Pace's current Fleet Watch system, model JX55 with a baud rate of 500k shall be provided and installed according to its manufacturers requirements and instructions.

### **TS 3.8.8 FIRE SUPPRESSION**

The engine compartment, exhaust area and high current electrical areas at rear of coach shall be equipped with an automatic fire sensing and suppression system. The purpose of the suppression system is to ensure coach and passenger safety and survivability in the event of a fire. The fire suppression system shall be self-contained. **A minimum of four** Temperature-sensitive sensors shall be provided; these sensors shall be temperature sensitive, weatherproof, miniature thermostats, housed in stainless steel spring material, shall be in the engine compartment. **A minimum of two sensors shall be made up of a 10-foot linear detection device protected by a**

~~stainless steel spring cover.~~ The sensors shall be located under horizontal bulkheads, above and downwind of the major heat sources, and in areas likely to be wetted by leaking flammable fluids. The sensors shall detect over-temperature in the critical areas and shall activate the audible alarm and warning lamp in the driver's compartment, activate the fire suppression system and shut down the engine. The sensors shall return to normal setting and deactivate alarms when the temperature returns to normal. ~~The number of thermal and linear~~ sensors shall be supplied per the manufacturer's recommendation to sense fires or extreme temperatures or conditions that are enough to ignite combustible materials in the monitored areas. The system control module shall provide a fault signal to the status indicator located in the operators' area in the event of a sensor failure and shall provide traceability to individual sensor failures during diagnostic work. The system control module shall; perform system self-testing, perform event recording, provide data logging, and keyboard programming capable.

The system shall automatically discharge as designed by the system manufacturer. The system may also be activated manually by actuating a switch or button labeled "fire" mounted in the driver's area. The manual actuation button shall be protected from accidental triggering. The system shall discharge through a minimum of four brass nozzles strategically placed for effectiveness in the event of a fire. The nozzles shall be brass and shall be in the engine compartment, fitted with dust caps that, upon actuation, are displaced to allow unrestricted chemical flow. The system may utilize ABC dry chemical, systems requiring chemical recharge (servicing) at intervals of less than six years will not be accepted. The charged chemical container shall be installed by the Contractor in a luggage bay or a location that is a minimum **60 inches** high and allows for easy viewing of its pressure gauge and protection from road spray. Each cylinder shall have a pressure gauge with easy to read "Go-No-Go" type indicator which is visible when the cylinder(s) is installed on the coach. A minimum **25-pound** capacity agent cylinder of the stored pressure type shall be furnished and be constructed of welded steel and must conform to DOT specification 4BW and be rated for **12-year** minimum hydrostatic retest. The agent cylinder shall be installed in a readily and easily access compartment with a hinged door with standard quarter turn fasteners.

The system shall have a monitoring panel located above the operators' side console. Monitor panel shall include visual indicators for a) Operational Status, for sensors, harness, and extinguishers, b) Fire or system discharged, and c) Power Failure.

The system shall bypass the battery cut off switch and be activated automatically by the system sensors. The system shall provide a programmable time-delayed signal to the engine shut-down controls following detection of a fire. The system-initiated engine shut-down shall include an integrated Engine Stop Over-Ride to permit the operator more time, if required, to slow and stop the coach.

The Contractor shall provide a certification from the fire suppression system manufacturer that all installation requirements have been met, all placement information has been recorded and no changes may be made without prior approval.

**TS 3.8.9 BIKE RACK**

A polished stainless-steel bike rack of modular construction shall be capable of carrying two bicycles with wheelbase measurements up to 48 inches. The lifting weight to operate the rack shall not exceed 20 pounds and shall be easy to operate. The rack shall have an active lock that secures it in the stowed position. The rack shall be mounted on the front of the coach and have a quick release feature for easy removal. An amber bike rack deployed indicator on the driver's console shall inform the driver when the bike rack is deployed. A three inch round convex spot mirror shall be placed so the driver can see when a passenger is loading a bike.

In the event a collision mitigation system requires the front of the coach to be obstruction free then the required bike rack shall be installed in the first luggage bay.

**TS 3.9 EMERGENCY EQUIPMENT**

On board emergency equipment, per Federal Motor Carrier Safety Regulations Part 393, shall be provided with each coach. The equipment shall be mounted out of the way of passengers but shall be readily accessible:

*Fire Extinguisher* - 5 pound (2.3 kg) capacity, Underwriter's Laboratories rating of A, B, C or more, marked as such with charge indicator, mounted in a cradled bracket.

*Emergency Warning Triangles* - Three bi-directional emergency reflective triangles conforming to the FMVSS 125 in a case and mounted in the battery compartment.

**TS 3.10 COLLISION MITIGATION**

WABCO ON-GUARD Collision Mitigation system or approved equal shall be provided and installed. The system shall use radar activated collision mitigation warning and feature adaptive cruise control.

**TS 4.0 DELIVERY REQUIREMENTS****TS 4.1 FUEL AND FLUIDS**

All fluids and the fuel tank shall be full at time of delivery to Pace.

**TS 4.2 STATE INSPECTION**

An Illinois State Safety Inspection shall have been completed and its sticker affixed to the coach at time of delivery.

**TS 4.3 DELIVERY CONDITION**

The coaches shall be delivered show room level of clean, inside and out.

**TS 4.3 DELIVERY LOCATION**

The coaches shall be delivered to:

Pace  
405 W Taft Drive  
South Holland, IL 60473

Deliveries are ONLY accepted by scheduled appointment between the hours of 9AM and 3PM, Monday through Friday excluding National US Holidays.

**INVITATION FOR BID NO. 419598  
FORTY FOOT DIESEL POWERED MOBILITY DEVICE ACCESSIBLE  
OVER THE ROAD COACHES  
TECHNICAL SPECIFICATION TS OTR 2019  
QUALITY ASSURANCE PROVISIONS**

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**1.0 IN-PLANT QUALITY ASSURANCE REQUIREMENTS**

**1.1 QUALITY ASSURANCE ORGANIZATION**

**1.1.1 Organization Establishment**

The Contractor shall establish and maintain an effective in-plant quality assurance organization. It shall be a specifically defined organization and should be directly responsible to the Contractor's top management.

**1.1.2 Control**

The quality assurance organization shall exercise quality control over all phases of production, from initiation of design through manufacture and preparation for delivery. The organization shall also control the quality of supplied articles.

**1.1.3 Authority and Responsibility**

The quality assurance organization shall have the authority and responsibility for reliability, quality control, inspection planning, establishment of the quality control system, and acceptance/rejection of materials and manufactured articles in the production of the transit buses.

**1.2 QUALITY ASSURANCE ORGANIZATION FUNCTIONS**

**1.2.1 Minimum Functions**

The quality assurance organization shall include the following minimum functions:

1. Work instructions: The quality assurance organization shall verify inspection operation instructions to ascertain that the manufactured product meets all prescribed requirements.
2. Records maintenance: The quality assurance organization shall maintain and use records and data essential to the effective operation of its program. These records and data shall be available for review by the resident inspectors. Inspection and test records for this procurement shall be available for a minimum of one year after inspections and tests are completed.
3. Corrective action: The quality assurance organization shall detect and promptly ensure correction of any conditions that may result in the production of defective transit buses.

These conditions may occur in designs, purchases, manufacture, tests or operations that culminate in defective supplies, services, facilities, technical data or standards.

### **1.3 BASIC STANDARDS AND FACILITIES**

The following standards and facilities shall be basic in the quality assurance process:

1. Configuration control: The Contractor shall maintain drawings, assembly procedures, and other documentation that completely describe a qualified bus that meets all of the options and special requirements of this procurement. The quality assurance organization shall verify that each transit bus is manufactured in accordance with these controlled drawings, procedures, and documentation.
2. Measuring and testing facilities: The Contractor shall provide and maintain the necessary gauges and other measuring and testing devices for use by the quality assurance organization to verify that the buses conform to all specification requirements. These devices shall be calibrated at established periods against certified measurement standards that have known valid relationships to national standards.
3. Production tooling as media of inspection: When production jigs, fixtures, tooling masters, templates, patterns, and other devices are used as media of inspection, they shall be proved for accuracy at formally established intervals and adjusted, replaced, or repaired as required to maintain quality.
4. Equipment use by resident inspectors: The Contractor's gauges and other measuring and testing devices shall be made available for use by the resident inspectors to verify that the buses conform to all specification requirements. If necessary, the Contractor's personnel shall be made available to operate the devices and to verify their condition and accuracy.

### **1.4 MAINTENANCE CONTROL**

The Contractor shall maintain quality control of purchases:

1. Supplier control: The Contractor shall require that each Supplier maintains a quality control program for the services and supplies that it provides. The Contractor's quality assurance organization shall inspect and test materials provided by Suppliers for conformance to specification requirements. Materials that have been inspected, tested, and approved shall be identified as acceptable to the point of use in the manufacturing or assembly processes. Controls shall be established to prevent inadvertent use of nonconforming materials.
2. Purchasing data: The Contractor shall verify that all applicable specification requirements are properly included or referenced in purchase orders of articles to be used on transit buses.

## **1.5 MANUFACTURING CONTROL**

1. **Controlled conditions:** The Contractor shall ensure that all basic production operations, as well as all other processing and fabricating, are performed under controlled conditions. Establishment of these controlled conditions shall be based on the documented Work instructions, adequate production equipment and special working environments if necessary.
2. **Completed items:** A system for final inspection and test of completed transit buses shall be provided by the quality assurance organization. It shall measure the overall quality of each completed bus.
3. **Nonconforming materials:** The quality assurance organization shall monitor the Contractor's system for controlling nonconforming materials. The system shall include procedures for identification, segregation and disposition.
4. **Statistical techniques:** Statistical analysis, tests and other quality control procedures may be used when appropriate in the quality assurance processes.
5. **Inspection status:** A system shall be maintained by the quality assurance organization for identifying the inspection status of components and completed transit buses. Identification may include cards, tags or other normal quality control devices.

## **1.6 INSPECTION SYSTEM**

The quality assurance organization shall establish, maintain and periodically audit a fully documented inspection system. The system shall prescribe inspection and test of materials, Work in process and completed articles. As a minimum, it shall include the following controls:

1. **Inspection personnel:** Sufficient trained inspectors shall be used to ensure that all materials, components and assemblies are inspected for conformance with the qualified bus design.
2. **Inspection records:** Acceptance, rework or rejection identification shall be attached to inspected articles. Articles that have been accepted as a result of approved materials review actions shall be identified. Articles that have been reworked to specified drawing configurations shall not require special identification. Articles rejected as unsuitable or scrap shall be plainly marked and controlled to prevent installation on the bus. Articles that become obsolete as a result of engineering changes or other actions shall be controlled to prevent unauthorized assembly or installation. Unusable articles shall be isolated and then scrapped. Discrepancies noted by the Contractor or resident inspectors during assembly shall be entered by the inspection personnel on a record that accompanies the major component, subassembly, assembly, or bus from start of assembly through final inspection. Actions shall be taken to correct discrepancies or deficiencies in the manufacturing processes, procedures or other conditions that cause articles to be in nonconformity with the requirements of the Contract specifications. The inspection personnel shall verify the corrective actions and mark the discrepancy record. If

discrepancies cannot be corrected by replacing the nonconforming materials, then the Agency shall approve the modification, repair or method of correction to the extent that the Contract specifications are affected.

3. Quality assurance audits: The quality assurance organization shall establish and maintain a quality control audit program. Records of this program shall be subject to review by the Agency.

## **2.0 INSPECTION**

### **2.1 INSPECTION STATIONS**

Inspection stations shall be at the best locations to provide for the Work content and characteristics to be inspected. Stations shall provide the facilities and equipment to inspect structural, electrical, hydraulic and other components and assemblies for compliance with the design requirements.

Stations shall also be at the best locations to inspect or test characteristics before they are concealed by subsequent fabrication or assembly operations. These locations shall minimally include underbody structure completion, body framing completion, body prior to paint preparation, water test, engine installation completion, underbody dress-up and completion, bus prior to final paint touchup, bus prior to road test and bus final road test completion.

### **2.2 RESIDENT INSPECTOR'S ROLE**

The Agency shall be represented at the Contractor's plant by resident inspectors, as required by FTA. Resident inspectors may be Agency employees or outside contractors. The Agency shall provide the identify of each inspector and shall also identify their level of authority in writing. They shall monitor, in the Contractor's plant, the manufacture of transit buses built under the procurement. The presence of these resident inspectors in the plant shall not relieve the Contractor of its responsibility to meet all of the requirements of this procurement. The Agency shall designate a primary resident inspector, whose duties and responsibilities are delineated in "Pre-Production Meetings," "Authority" and "Pre-Delivery Tests," below. Contractor and resident inspector relations shall be governed by the guidelines included as Attachment A to this Exhibit E, Quality Assurance provisions.

### **2.3 PRE-PRODUCTION MEETINGS**

The primary resident inspector may participate in design review and pre-production meetings with the Agency. At these meetings, the configuration of the buses and the manufacturing processes shall be finalized, and all Contract documentation provided to the inspector.

No less than thirty (30) days prior to the beginning of bus manufacture, the primary resident inspector may meet with the Contractor's quality assurance manager and may conduct a pre-production audit meeting. They shall review the inspection procedures and finalize inspection checklists. The resident inspectors may begin monitoring bus construction activities two weeks prior to the start of bus fabrication.



## **2.4 AUTHORITY**

Records and data maintained by the quality assurance organization shall be available for review by the resident inspectors. Inspection and test records for this procurement shall be available for a minimum of one year after inspections and tests are completed.

The Contractor's gauges and other measuring and testing devices shall be made available for use by the resident inspectors to verify that the buses conform to all specification requirements. If necessary, the Contractor's personnel shall be made available to operate the devices and to verify their condition and accuracy.

Discrepancies noted by the resident inspector during assembly shall be entered by the Contractor's inspection personnel on a record that accompanies the major component, subassembly, assembly or bus from start of assembly through final inspection. Actions shall be taken to correct discrepancies or deficiencies in the manufacturing processes, procedures or other conditions that cause articles to be in nonconformity with the requirements of the Contract specifications. The inspection personnel shall verify the corrective actions and mark the discrepancy record. If discrepancies cannot be corrected by replacing the nonconforming materials, the Agency shall approve the modification, repair or method of correction to the extent that the Contract specifications are affected.

The primary resident inspector shall remain in the Contractor's plant for the duration of bus assembly Work under this Contract. Only the primary resident inspector or designee shall be authorized to release the buses for delivery. The resident inspectors shall be authorized to approve the pre-delivery acceptance tests. Upon request to the quality assurance supervisors, the resident inspectors shall have access to the Contractor's quality assurance files related to this procurement. These files shall include drawings, assembly procedures, material standards, parts lists, inspection processing and reports, and records of Defects.

## **2.5 SUPPORT PROVISIONS**

The Contractor shall provide office space for the resident inspectors in close proximity to the final assembly area. This office space shall be equipped with desks, outside and interplant telephones, Internet access, file cabinet and chairs.

## **2.6 COMPLIANCE WITH SAFETY REQUIREMENTS**

At the time of the Pre-Production meeting, the Contractor shall provide all safety and other operational restrictions that govern the Contractor's facilities. These issues will be discussed and the parties will agree which rules/restrictions will govern the Agency's inspector(s) and any other Agency representatives during the course of the Contract.

### **3.0 ACCEPTANCE TESTS**

#### **3.1 RESPONSIBILITY**

Fully documented tests shall be conducted on each production bus following manufacture to determine its acceptance to the Agency. These acceptance tests shall include pre-delivery inspections and testing by the Contractor and inspections and testing by the Agency after the buses have been delivered.

#### **3.2 PRE-DELIVERY TESTS**

The Contractor shall conduct acceptance tests at its plant on each bus following completion of manufacture and before delivery to the Agency. These pre-delivery tests shall include visual and measured inspections, as well as testing the total bus operation. The tests shall be conducted and documented in accordance with written test plans approved by the Agency.

Additional tests may be conducted at the Contractor's discretion to ensure that the completed buses have attained the required quality and have met the requirements in Section 6: Technical Specifications. The Agency may, prior to commencement of production, demand that the Contractor demonstrate compliance with any requirement in that section if there is evidence that prior tests have been invalidated by the Contractor's change of Supplier or change in manufacturing process. Such demonstration shall be by actual test, or by supplying a report of a previously performed test on similar or like components and configuration. Any additional testing shall be recorded on appropriate test forms provided by the Contractor and shall be conducted before acceptance of the bus.

The pre-delivery tests shall be scheduled and conducted with thirty (30) days notice so that they may be witnessed by the resident inspectors, who may accept or reject the results of the tests. The results of pre-delivery tests, and any other tests, shall be filed with the assembly inspection records for each bus. The under floor equipment shall be available for inspection by the resident inspectors, using a pit or bus hoist provided by the Contractor. A hoist, scaffold or elevated platform shall be provided by the Contractor to easily and safely inspect bus roofs. Delivery of each bus shall require written authorization of the primary resident inspector. Authorization forms for the release of each bus for delivery shall be provided by the Contractor. An executed copy of the authorization shall accompany the delivery of each bus.

#### **3.3 VISUAL AND MEASURED INSPECTIONS**

Visual and measured inspections shall be conducted with the bus in a static condition. The purpose of the inspection testing includes verification of overall dimension and weight requirements, that required components are included and are ready for operation, and that components and subsystems designed to operate with the bus in a static condition do function as designed.

### **3.4 TOTAL BUS OPERATIONS**

Total bus operation shall be evaluated during road tests. The purpose of the road tests is to observe and verify the operation of the bus as a system and to verify the functional operation of the subsystems that can be operated only while the bus is in motion.

Each bus shall be driven for a minimum of fifteen (15) miles during the road tests. If requested, computerized diagnostic printouts showing the performance of each bus shall be produced and provided to the Agency. Observed Defects shall be recorded on the test forms. The bus shall be retested when Defects are corrected and adjustments are made. This process shall continue until Defects or required adjustments are no longer detected.

**Attachment A: New Bus Manufacturing Inspection Guidelines**

<b>Pre-Building Phase</b>	
<p style="text-align: center;"><b><u>Bus Manufacturer’s Expectations</u></b></p> <ol style="list-style-type: none"> <li>1. All inspectors must be given all Contract documentation before beginning the inspection process.</li> <li>2. The bus manufacturer’s inspection process should be reviewed at pre-production audit meeting. Inspectors should be present and understand the difference among various manufacturing processes. At least one key customer and manufacturer representative who will follow the entire procurement from start to finish should be present.</li> <li>3. When change orders are required, they need to be made as early in the process as possible. If change orders have an impact on the delivery schedule, consideration should be given to a delivery schedule revision.</li> <li>4. Inspection forms should be provided to manufacturers prior to the build so that the manufacturers will know what items the customer believes are critical. The inspection forms should be provided to the manufacturer after completion so that the Defects to be corrected can be identified.</li> <li>5. The parties should agree on what necessitates a line shutdown before the build begins.</li> </ol>	<p style="text-align: center;"><b><u>Pace Expectations</u></b></p> <ol style="list-style-type: none"> <li>1. Manufacturers should have a formal, approved quality assurance (QA) program and must adhere to the program. Any changes in the approved program must be resubmitted to the transit system for approval.</li> <li>2. At the pre-production audit meeting with Pace: <ul style="list-style-type: none"> <li>• Representatives from contracts, engineering, quality, and production should be represented.</li> <li>• Manufacturers should ensure good communication among their departments regarding Contract requirements.</li> <li>• A formal sales release must be ready for review at the meeting, and a final sales release must be ready before production.</li> <li>• Manufacturers should supply test information and other documents required to meet expectations.</li> </ul> </li> <li>3. Manufacturers should have application and installation approvals from Suppliers whenever possible. On installations of new major components, the sub-Supplier must be present at initial production.</li> <li>4. Manufacturers should read and understand the specification prior to bid. Specification clarifications should be made during the approved equal’s process. Ask the appropriate questions at pre-bid meetings.</li> <li>5. The manufacturer’s service representative should be involved with the pre-production audit meeting and initial production, and/or at final acceptance.</li> <li>6. Prior to build, the manufacturer should be able to provide Pace a complete Bill of Materials for the buses to be built.</li> </ol>

**Process During Building Phase**

**Bus Manufacturer's Expectations**

1. One person should be the primary inspector from start to finish. The primary inspector should be included in the design review process and pre-production meetings. The rotation of personnel with different expectations and standards causes difficulties. The first or second bus should stay at the manufacturer's location as a quality standard and be delivered last.
2. An adequate number of experienced inspectors should be available to prevent production line movement delays.
3. Inspectors should be available to support the manufacturing effort Monday through Friday, consistent with the manufacturer's production personnel hours.
4. Inspection should be conducted in a cooperative, professional manner. The inspector must want to solve problems.
5. Only one person should be able to make stop ship calls, and the reason for the stop ship must be immediately available. The stop ship should be in writing.
6. Problems identified should be brought to the attention of the manufacturer at the stage when they occur rather than at a future stage or when the vehicle is complete.

**Pace Expectations**

1. The resident inspector should have access to a complete set of engineering drawings and documents for the bus being built. Engineering or manufacturing changes must be formally documented and included in documents provided to transit systems.
2. Manufacturers should maintain the build schedule if possible. Changes in the build schedule and requests for overtime and weekend Work must be communicated as early as possible.
3. Buses that are not ready or complete should not be presented for final inspection.
4. Manufacturers should have a formal internal/external communications process and feedback for inspection problems and resolutions. Manufacturers should provide early resolution of problems identified by inspectors. QA procedures must be revised to reflect problem corrections.
5. The attitude of manufacturers and QA personnel is important; remember who the customer is. However, there must be mutual respect.
6. Pace is not responsible for redesigning the bus, correcting problems or providing manufacturing quality. It audits only. Manufacturers should not need a learning period to determine acceptable quality standards.
7. Buses should be identical and interchangeable within an order unless provided by the transit system.
8. Inspection Work should be spread evenly during the workday to the extent possible.

<b>Post-Building Phase</b>	
<p style="text-align: center;"><b><u>Bus Manufacturer's Expectations</u></b></p> <ol style="list-style-type: none"><li>1. To ensure prompt payment, the transit system should increase the rate of the final acceptance process.</li><li>2. The on-property final acceptance inspection should be primarily for shipping damage and Defects that occur during shipment. It should not be a complete vehicle inspection with criteria different from those used at the plant.</li></ol>	<p style="text-align: center;"><b><u>Pace Expectations</u></b></p> <ol style="list-style-type: none"><li>1. Defects noted at final inspection should be Repaired in a timely and acceptable manner.</li></ol>

**CONTRACTOR PROFILE INFORMATION**

The information supplied to the following questions will be used to evaluate bidder's qualifications to complete the work required by Pace as specified. Please respond to the following questions or topics in the format presented below. **All information must be provided below and submitted with Contractor's bid documents.** Attach additional pages, if necessary. Failure to submit this information may be cause for the bid to be considered non-responsive.

**A. COMPANY INFORMATION**

Contractor Name: Motor Coach Industries, Inc.

Status:          X   Corporation                                           Individual Owner

Contractor Address: 200 East Oakton Street  
Des Plaines, IL 60018

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Primary Contact: Richard DeYoung

Secondary Contact: Tom Wagner

Contractor Phone #: 847-274-1344    FAX #: N/A

Emergency Phone #: 847-274-1344    Cell Phone #: 847-274-1344

E-mail Richard.deyoung@mcicoach.com

Number of employees: Mgt 28                                Supervision 58                                General 506

**B. Contractor References**

Please provide four (4) references where you have provided similar vehicles as outlined in this IFB.

1.     Name           New Jersey Transit  
       Address       One Penn Plaza East Newark, NJ 07105  
       Phone #       973-491-7649 \_\_\_\_\_ Contact Person Chris Moog
  
2.     Name           Houston Metro  
       Address       5700 Easttex Freeway Houston, TX 77208  
       Phone #       713-652-8907           Contact Person Andrei Dragomir
  
3.     Name           Roaring Fork Transit Authority  
       Address       51 Service Center Drive Aspen, CO 81611  
       Phone #       970-384-4959 \_\_\_\_\_ Contact Person Kenny Osier
  
4.     Name           Potomac and Rappahannock Transportation Commission  
       Address       14700 Potomac Mills Road Woodbridge, VA 22192  
       Phone #       703-580-6162 Contact Person Perrin Palistrant



**TRANSIT VEHICLE MANUFACTURER (TVM) DISADVANTAGED BUSINESS ENTERPRISE**  
**IMPORTANT: This form must be properly completed and submitted with all bids**

Pursuant to the provisions of Section 105(f) of the Surface Transportation Assistance Act of 1982, each bidder for this contract must certify that it has complied with the requirements of 49 CFR Part 26.49, regarding the participation of disadvantaged business enterprises in FTA-assisted procurement of transit vehicles. Absent this certification, properly completed and signed, a bidder shall be deemed non-responsive.

Certification: I hereby certify, for the bidder named below, that it has complied with the provisions of the 49 CFR Part 26.49 and that I am duly authorized by said bidder to make this certification.

Motor Coach Industries, Inc.

Company Name

Authorized Signature

April 23, 2020

Date

BIDDER'S SERVICE AND PARTS SUPPORT DATA

**Location of nearest Technical Service Representative to Pace**

Name Motor Coach Industries, Inc. \_\_\_\_\_

Address 200 East Oakton Street, Des Plaines, IL 60018 \_\_\_\_\_  
\_\_\_\_\_

Telephone 847-285-2354 \_\_\_\_\_

Offeror to describe technical services readily available from said representative.

All services. \_\_\_\_\_  
\_\_\_\_\_

**Location of nearest Parts Distribution Center to Pace**

Name Motor Coach Industries, Inc.

Address 200 East Oakton Street, Des Plaines, IL 60018

Telephone 847-285-2354 \_\_\_\_\_

Offeror shall describe the extent of parts available at said center.

Full service parts. \_\_\_\_\_  
\_\_\_\_\_

**Policy for Delivery of Parts and Components to be Purchased for Service and Maintenance**

See Attached. \_\_\_\_\_  
\_\_\_\_\_

Regular Method of Shipment Express Ground \_\_\_\_\_

Cost to Pace No charge \_\_\_\_\_

(Attach additional pages/documents if necessary)

**The Aftermarket Parts Company, LLC (“NFI PARTS”)**  
**Ordering Policy/Procedures and Warranty Terms and Conditions**

**ORDERING POLICY/PROCEDURE**

**Sales Policy**

Prices listed herein are valid within the domestic United States and Canada and subject to change without notice. NFI Parts is required to charge applicable state tax, provincial sales tax and local tax on every item for which sales tax exemption certification has not been provided.

**Payment Terms**

NFI Parts accepts Mastercard, Visa, and American Express. For customers with approved credit, terms are net thirty (30) calendar days. A delinquency charge of 1% per month of the unpaid balance remaining after the 30<sup>th</sup> day following the invoice date until paid in full, (but not in excess of the lawful maximum per annum), will be applied to the account.

**Freight Policy**

Standard freight to all destinations in the continental United States and Canada is prepaid by NFI Parts. Incremental costs for emergency deliveries will be added to the Customer's invoice or the freight will be shipped freight collect at the discretion of NFI Parts. Prepaid service is not available on COD orders.

**Concealed Shortages and Freight Damage**

When a discrepancy is found in the Customer's shipment regarding a shortage, damage, or incorrect part, it must be reported to NFI Part' Customer Service Department within five (5) business days of receipt of product for consideration.

Shipping damages and or loss must be noted on the carrier waybill at the time of receipt of shipment. A copy of the carrier waybill and or carrier inspections report must be submitted with the Customer's claim within five (5) business days of receipt of shipment to NFI Parts Customer Service.

Only after an investigation can a credit or reimbursement occur.

If damage is concealed, contact NFI Parts Customer Service. Based on the findings of the inspection, a decision will be made whether to issue a credit and whether the part will either be scrapped or returned to NFI Parts.

**Return Material Policy**

To obtain a Return Materials Authorization (RMA), contact NFI Parts Customer Service with the following information:

1. Part number and quantity
2. Original customer purchase order number
3. Reason for return

The RMA number MUST appear on all documents, correspondence, and shipping containers in order for the Customer's return to be processed. Parts returned without prior authorization will be returned to the

Customer “freight collect.” A 20% restocking charge will apply to incorrectly ordered parts or surplus parts return. All returned products are subject to inspection by NFI Parts prior to issuance of credit. NFI Parts reserves the right to refuse the return of specialty items and custom fabricated parts. Returned shipments must be received within thirty (30) calendar days of the RMA date and must be accompanied by the RMA form for processing.

### **Materials**

Freight may need to be prepaid by the Customer.

### **Non-Stock Parts (Special Order Items)**

Due to limited usage or other constraints, certain items are not stocked, but may be available for sale via special order. Orders for non-stock items are non-cancelable, subject to lead-time and are not eligible for return. Customer’s Customer Service Representative will advise if an item on the Customer’s order is a non-stock part.

### **Core Returns**

Attach the pre-printed label from the RMA to the shipping carton. The RMA core tag must be completed and attached when returning the core. Clearly mark the outside of each carton or box with the RMA number.

To receive full credit, cores should be clean, drained of oil and other liquids, and returned in usable condition. Cores must be returned within thirty (30) calendar days. Cores returned that are other than the model purchased that are damaged, or in non-rebuildable condition, will be subject to an adjusted core credit. Contact NFI Parts Customer Service for return instructions.

### **PARTS WARRANTY (the “Warranty Agreement”)**

Products sold by NFI Parts are warranted against defects in material and workmanship for a period of six (6) months from the date of purchase. All parts vendor/manufacturer’s warranties to end users in connection with any part sold will flow through to the Customer. In such case, NFI Parts will act solely to assist the Customer with its claim and shall have no liability to the Customer in connection with such warranty. If the vendor/manufacturer’s warranty provides less coverage than NFI Parts limited warranty, then only NFI Parts warranty described herein shall apply.

**SUBJECT TO THE TERMS AND CONDITIONS HEREOF, THE CUSTOMER ACKNOWLEDGES THAT ITS WARRANTY RIGHTS, IF ANY, WILL BE AGAINST EITHER THE VENDOR/MANUFACTURER OF THE PART OR NFI PARTS, BUT NOT BOTH.**

If NFI Parts warranty applies, the obligation is limited to repair, replacement, and/or credit of the item under warranty, at its sole option. A NFI Parts Customer Service Representative will advise which items will be repaired, returned or scrapped in conjunction with issuing an RMA.

Unless otherwise instructed by an NFI Parts Customer Service Representative, the Customer shall ship all items required to be returned for warranty consideration to NFI Parts for review and evaluation at the Customer’s expense.

If the manufacturer/vendor of the product denies the warranty claim(s), the Customer will be notified of the vendor/manufacturer’s decision and the Customer’s account will be charged for the cost of the product (if previously credited), as well as any freight expense incurred by NFI Parts to return the product to the

manufacturer. If the Customer wants the parts returned for further review and evaluations after a warranty claim has been denied, it must notify NFI Parts at the time it submits the original warranty claim.

The Customer acknowledges that this Limited Warranty shall not apply to any part that, in NFI Parts reasonable opinion:

- (i) has been altered, modified, changed, reworked, combined with another part or replaced in a manner that would likely affect serviceability in any respect; or
- (ii) has been subject to abuse, neglect, or damage from an accident, or from intentional acts; or
- (iii) has not been serviced and maintained at reasonable intervals according to its supplier's recommendations; or
- (iv) has had installed replacement parts not recommended by NFI Parts and which have been substituted in such a way as to affect serviceability; or
- (v) has not been used for its intended purpose.

**ENFORCEMENT OF THE FOREGOING OBLIGATIONS OF NFI PARTS SHALL BE THE CUSTOMER'S SOLE AND EXCLUSIVE REMEDY AGAINST NFI PARTS WITH RESPECT TO THE PARTS. THIS LIMITED WARRANTY AND NFI PART'S OBLIGATIONS HEREUNDER ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL NFI PARTS BE LIABLE FOR ANY OTHER OBLIGATIONS OR LIABILITIES, INCLUDING LIABILITY FOR ANY GENERAL, SPECIAL, DIRECT, INDIRECT, INCIDENTAL, PUNITIVE, ENHANCED, RELIANCE, OR CONSEQUENTIAL DAMAGES OF ANY KIND WHATSOEVER (INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS AND/OR LOSS OF USE) AND IN NO EVENT SHALL SUCH LIABILITY EXCEED THE PRICE PAID FOR THE PART FOR WHICH THE WARRANTY CLAIM IS MADE. NO PERSON IS AUTHORIZED TO CHANGE OR OTHERWISE MODIFY THIS LIMITED WARRANTY OR ASSUME ANY OTHER LIABILITY ON BEHALF OF NFI PARTS UNLESS SUCH CHANGE, MODIFICATION OR ASSUMPTION IS MADE IN WRITING AND SIGNED BY AN OFFICER OF NFI PARTS.**

Further details on the NFI Parts Warranty and Procedures are available upon request from the NFI Parts Customer Service Team at 1-800-665-2637. For warranty information in respect of NFI Parts Kinetik® products or parts, please refer to the NFI Parts Kinetik® Satisfaction Guarantee or call the NFI Parts Customer Service Team at the above-referenced number.

In the event that any terms in the Warranty Agreement conflict with another written agreement between the parties, the terms of the Warranty Agreement shall govern.

CERTIFICATE OF COMPLIANCE WITH VEHICLE TESTING REQUIREMENT

The undersigned certifies that the vehicles offered in this procurement comply and will, when delivered, comply with 49 U.S.C. § 5323(c) and FTA's implementing regulation at 49 CFR Part 665 according to the indicated one of the following three alternatives.

(mark one and only one of the three blank spaces with an "x")

1. X The vehicles offered herewith have been tested in accordance with 49 CFR Part 665 on April 2011 date). The vehicles being sold should have the identical configuration and major components as the vehicle in the test report, which must be submitted with this Offer. If the configuration or components are not identical, the manufacturer shall provide with its Offer a description of the change and the manufacturer's basis for concluding that it is not a major change requiring additional testing.
2.  The manufacturer represents that the vehicle is "grandfathered" (has been used in mass transit service in the United States before October 1, 1988 and is currently being produced without a major change in configuration or components), and submits with this Offer the name and address of the recipient of such a vehicle and the details of that vehicle's configuration and major components.
3.  The vehicle is a new model and will be tested and the results will be submitted to Pace prior to acceptance of the first vehicle.

The undersigned understands that misrepresenting the testing status of a vehicle acquired with Federal financial assistance may subject the undersigned to civil penalties as outlined in the Department of Transportation's regulation on Program Fraud Civil Remedies, 49 CFR Part 31. In addition, the undersigned understands that FTA may suspend or debar a manufacturer under the procedures in 49 CFR Part 29.

Date: April 23, 2020

Signature: \_\_\_\_\_

Company Name: Motor Coach Industries, Inc.

Title: Executive Vice-President, Sales, Marketing & Service

**INVITATION FOR BID NO. 419598  
FORTY FOOT DIESEL POWERED MOBILITY DEVICE ACCESSIBLE  
OVER THE ROAD COACHES  
TECHNICAL SPECIFICATION TS OTR 2019  
WARRANTY PROVISIONS**

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**1.0 WARRANTY REQUIREMENTS**

**1.1 BASIC PROVISIONS**

**1.1.1 Contractor Warranty**

Warranties in this document are in addition to any statutory remedies or warranties imposed on the Contractor. Consistent with this requirement, the Contractor warrants and guarantees to Pace each complete bus and specific subsystems and components as follows. Performance requirements based on design criteria shall not be deemed a warranty item. The Contractor shall supply a simple easy to use email format for notification of “In Service” date based on the VIN of the vehicle.

**1.1.2 Complete Bus**

The complete bus, propulsion system, components, major subsystems and body and chassis structure are warranted to be free from Defects and Related Defects for one year or 50,000 miles, whichever comes first, beginning on the date of revenue service but not longer than 15 days after delivery . The warranty is based on regular operation of the bus under the operating conditions prevailing.

**1.1.3 Body and Chassis Structure**

1. Body, body structure, structural elements of the suspension and engine cradle are warranted to be free from Defects and Related Defects for **SEVEN year** or **350,000** miles, whichever comes first.
2. Primary load-carrying members of the bus structure, including structural elements of the suspension, are warranted against corrosion failure and/or Fatigue Failure sufficient to cause a Class 1 Failure for a period of 12 years or 500,000 miles, whichever comes first.

**1.1.4 Propulsion System**

Propulsion system components, specifically the engine and transmission shall be warranted to be free from Defects and Related Defects for;

Engine - **FIVE** years or **300,000** miles, whichever comes first and based on the engine manufacturers published warranty Policy(s) as of the date of the bid opening for this project.

Transmission - **FIVE** years or **300,000** miles, whichever comes first and based on the transmission manufacturers published warranty Policy(s) as of the date of the bid opening for this project.

### **1.1.5 Emission Control System (ECS)**

In addition to warranties required by the EPA, the Contractor warrants the emission control system for **Two (2)** years with unlimited mileage. The ECS shall include, but is not limited to, the following components:

1. Complete after-treatment device
2. Components identified as emission control devices.

### **1.1.6 Subsystems**

Other subsystems shall be warranted to be free from Defects and Related Defects for two years or 100,000 miles for replacement parts ONLY, whichever comes first. Other subsystems are listed below:

1. Drive axle complete and inclusive of driveshaft.
2. Front axle complete.
3. Tag axle complete.
4. Brake system: Foundation brake components, including advancing mechanisms, as supplied with the axles, excluding friction surfaces
5. Destination signs: All destination sign equipment for the front, side and rear signs, power modules and operator control
6. Heating, ventilating: Roof and/or rear main unit, floor heaters and front defroster
7. AC unit and compressor: Roof and/or rear main unit only, excluding floor heaters and front defroster
8. Door systems: Door operating controls, actuators and linkages, replacement parts ONLY after the first year
9. Air compressor
10. Air dryer system
11. Wheelchair ramp system
12. Starter



13. Alternator: Alternator only. Does not include the drive system
14. Charge air cooler: Charge air cooler including core, tanks and including related surrounding framework and fittings
15. Fire suppression system including tank and extinguishing agent dispensing system
16. Hydraulic systems: power steering as applicable
17. Engine cooling systems: Radiator including core, tanks and related framework, including surge tank
18. Transmission cooler
19. Passenger seating excluding upholstery
20. Fuel storage and delivery system
21. Surveillance system including cameras and video recorders

#### **1.1.7 Serial Numbers**

Upon delivery of each bus, the Contractor shall provide a complete electronic list of ALL serialized units installed on each bus to facilitate warranty tracking. The list shall include, but is not limited to:

1. Engine
2. Transmission
3. Radiator
4. CAC
5. Alternator
6. Starter
7. A/C compressor and condenser/evaporator unit
8. Steer axle
9. Drive axle
10. Power steering units, pump and gear

11. Fuel tank
12. Air compressor
13. Wheelchair ramp
14. Driver's Seat

The Contractor shall provide updated serial numbers resulting from warranty campaigns. The format of the list shall be approved by Pace prior to delivery of the first production bus.

#### **1.1.8 Extension of Warranty**

If, during the warranty period, repairs or modifications on any bus are made necessary by defective design, materials or workmanship but are not completed due to lack of material or inability to provide the proper repair for thirty (30) calendar days, the remaining warranty period shall apply.

#### **1.1.9 Voiding of Warranty**

The warranty shall not apply to the failure of any part or component of the bus that directly results from misuse, negligence, accident or repairs not conducted in accordance with the Contractor-provided maintenance manuals and with workmanship performed by adequately trained personnel in accordance with recognized standards of the industry. The warranty also shall be void if the Pace fails to conduct normal inspections and scheduled preventive maintenance procedures as recommended in the Contractor's maintenance manuals and if that omission caused the part or component failure.

#### **1.1.10 Exceptions and Additions to Warranty**

The warranty shall not apply to the following items:

1. Scheduled maintenance items
2. Normal wear-out items
3. Items furnished by Pace

In the event Pace requires the use of a specific product and has rejected the Contractor's request for an alternate product, then the standard Supplier warranty for that product shall be the only warranty provided to Pace. This product will not be eligible under "Fleet Defects," below.

The Contractor shall not be required to provide warranty information for any warranty that is less than or equal to the warranty periods listed.

#### **1.1.11 Pass-Through Warranty**

Should the Contractor elect to not administer warranty claims on certain components and wish to transfer this responsibility to the sub-Suppliers, or to others, the Contractor shall request this waiver.

Contractor shall state in writing that Pace's warranty reimbursements will not be impacted. The Contractor also shall state in writing any exceptions and reimbursement including all costs incurred in transport of vehicles and/or components. At any time during the warranty period, the Contractor may request approval from Pace to assign its warranty obligations to others, but only on a case-by-case basis approved in writing by Pace. Otherwise, the Contractor shall be solely responsible for the administration of the warranty as specified. Warranty administration by others does not eliminate the warranty liability and responsibility of the Contractor.

#### **1.1.12 Superior Warranty**

The Contractor shall pass on to Pace any warranty offered by a component Supplier that is superior to that required herein. The Contractor shall provide a list Pace noting the conditions and limitations of the Superior Warranty not later than the start of production. The Superior Warranty shall not be administered by the Contractor.

### **1.2 FLEET DEFECTS**

#### **1.2.1 Occurrence and Remedy**

A Fleet Defect is defined as cumulative failures of twenty-five (25) percent of the same components in the same application in a minimum fleet size of twenty (20) or more buses where such items are covered by warranty. A Fleet Defect shall apply only to the base warranty period in sections entitled "Complete Bus," "Propulsion System" and "Major Subsystems."

For the purpose of Fleet Defects, each option order shall be treated as a separate bus fleet. In addition, should there be a change in a major component within either the base order or an option order, the buses containing the new major component shall become a separate bus fleet for the purposes of Fleet Defects.

The Contractor shall correct a Fleet Defect under the warranty provisions defined in "Repair Procedures." After correcting the Defect, Pace and the Contractor shall mutually agree to and the Contractor shall promptly undertake and complete a work program reasonably designed to prevent the occurrence of the same Defect in all other buses and spare parts purchased under this Contract. Where the specific Defect can be solely attributed to particular identifiable part(s), the work program shall include redesign and/or replacement of only the defectively designed and/or manufactured part(s). In all other cases, the work program shall include inspection and/or correction of all of the buses in the fleet via a mutually agreed-to arrangement. The Contractor shall update, as necessary, technical support information (parts, service and operator's manuals) due to changes resulting from warranty repairs. Pace may immediately declare a Defect in design

resulting in a safety hazard to be a Fleet Defect. The Contractor shall be responsible to furnish, install and replace all defective units.

As the definition of fleet defect applies items listed in 1.1.5 and 1.1.6 of this section is applicable to only the first year.

### **1.2.2 Exceptions to Fleet Defect Provisions**

The Fleet Defect warranty provisions shall not apply to Pace supplied items, such as radios, fare collection equipment, communication systems.

## **2.0 REPAIR PROCEDURES**

### **2.1 REPAIR PERFORMANCE**

The Contractor is responsible for all warranty-covered repair Work. To the extent practicable, Pace will allow the Contractor or its designated representative to perform such Work. At its discretion, Pace may perform such Work if it determines it needs to do so based on transit service or other requirements. Such Work shall be reimbursed by the Contractor.

### **2.2 REPAIRS BY THE CONTRACTOR**

When Pace detects a Defect within the warranty periods defined in this section, it shall, within thirty (30) days, notify the Contractor's designated representative. The Contractor or its designated representative shall, if requested, begin Work on warranty-covered repairs within five calendar days after receiving notification of a Defect from the Pace. Pace shall make the bus available to complete repairs timely within an agreed upon repair schedule.

The Contractor shall provide at its own expense all spare parts, tools and space required to complete repairs. At Pace's option, the Contractor may be required to remove the bus from Pace property while repairs are being affected. If the bus is removed from Pace property, repair procedures must be diligently pursued by the Contractor's representative.

### **2.3 REPAIRS BY PACE - PARTS**

When Pace performs the warranty-covered repairs, it shall correct or repair the Defect and any Related Defects utilizing parts supplied by the Contractor specifically for this repair. At its discretion, Pace may use Contractor-specified parts available from its own stock if deemed in its best interests.

Pace may require that the Contractor supply parts for warranty-covered repairs being performed by Pace. Those parts may be remanufactured but shall have the same form, fit and function, and warranty. The parts shall be shipped prepaid to Pace from any source selected by the Contractor within fourteen (14) days of receipt of the request for said parts and shall not be subject to a handling charge.

## **2.4 DEFECTIVE COMPONENT RETURN**

The Contractor may request that parts covered by the warranty be returned to the manufacturing plant. The freight costs for this action shall be paid by the Contractor. Materials should be returned in accordance with the procedures outlined in “Warranty Processing Procedures.”

## **2.5 FAILURE ANALYSIS**

The Contractor shall, upon specific request of Pace, provide a failure analysis of Fleet Defect or safety-related parts, or major components, removed from buses under the terms of the warranty that could affect fleet operation. Such reports shall be delivered within 60 days of the receipt of failed parts.

## **2.6 REIMBURSEMENT FOR LABOR AND OTHER RELATED COSTS**

Pace shall be reimbursed by the Contractor for labor. The amount shall be \$85.00 per hour, which includes fringe benefits and overhead adjustments, plus the cost of towing the bus if such action was necessary and if the bus was in the normal service area. Labor hours claimed by Pace shall be fair and reasonable. Towing cost are applicable to the first year only.

## **2.7 REIMBURSEMENT FOR PARTS**

Pace shall be reimbursed by the Contractor for defective parts and for parts that must be replaced to correct the Defect. The reimbursement shall be at the current price at the time of repair and shall include taxes where applicable, plus fifteen (15) percent handling costs. Handling costs shall not be paid if part is supplied by Contractor and shipped to Pace .

## **2.8 REIMBURSEMENT REQUIREMENTS**

The Contractor shall respond to the warranty claim with an accept/reject decision including necessary failure analysis no later than sixty (60) days after Pace submits the claim and defective part(s), when requested. Reimbursement for all accepted claims shall occur no later than sixty (60) days from the date of acceptance of a valid claim. Pace may dispute rejected claims or claims for which the Contractor did not reimburse the full amount. The parties agree to review disputed warranty claims during the following quarter to reach an equitable decision to permit the disputed claim to be resolved and closed. The parties also agree to review all claims at least once per quarter throughout the entire warranty period to ensure that open claims are being tracked and properly resolved.

## **2.9 WARRANTY AFTER REPLACEMENT/REPAIRS**

If any component, unit or subsystem is repaired, rebuilt or replaced by the Contractor or by Pace with the concurrence of the Contractor, the component, unit or subsystem shall have the

unexpired warranty period of the original. Repairs shall not be warranted if the Contractor-provided or authorized parts are not used for the repair, unless the Contractor has failed to respond within five days, in accordance with “Repairs by the Contractor.”

## **2.10 WARRANTY PROCESSING PROCEDURES**

One failure per bus per claim is allowed. The following list represents information that Pace shall supply for processing warranty claims:

1. Bus number and VIN
2. Total vehicle life mileage at time of repair
3. Date of failure/repair
4. Acceptance/in-service date
5. Contractor part number and description
6. Component serial number when applicable
7. Description of failure
8. All costs associated with each failure/repair including:
  - a. Towing
  - b. Road calls
  - c. Labor
  - d. Materials
  - e. Parts
  - f. Handling
  - g. Troubleshooting time

Invoices may be required for third-party costs.

### **2.10.1 Forms**

The Contractor shall supply all warranty forms and any tags required. Electronic submittal may be used if available from the Contractor.

### **2.10.2 Return of Parts**

When returning defective parts to the Contractor, Pace shall tag each part with the following:

1. Bus number and VIN

2. Claim number
3. Part number
4. Serial number (if available)

Each claim must be submitted no more than thirty (30) days from the date of failure and/or repair, whichever is later. All defective parts must be returned to the Contractor, when requested, no more than thirty (30) days from date of repair.

### **2.10.3 Reimbursements**

Reimbursements are to be transmitted to the following address:

Pace / Warranty Admin  
405 Taft Drive  
South Holland, IL 60473

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IFB No. <u>419598</u>	Request #: <u>  1  </u>	
Exhibit: D _____	Page: 34 of 67	Section: <u>  TS 2.12.4.1 Destination Signs  </u>
Questions/Clarification or Request for Changes and Approved Equals:		
Regarding the rear sign, <i>bidder</i> requests a size of 6x48 in lieu of 8x96. As the approximately 45 inch wide Rear Destination Sign will not fit on a single door, mounting the sign in the vent panel portion of the doors where the sign would span the coach between the high mount turn lamps was suggested. Luminator does not offer an 8x96 Destination Sign that is designed for exterior application in the Rear Rad/Motor Doors.		
Pace Response:		
Accepted.		



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IFB No. <u>419598</u>	Request #: <u>  2  </u>		
Exhibit: D _____	Page: 10 of 67	Section: TS 2.6.5 Corrosion	
Questions/Clarification or Request for Changes and Approved Equals:			
<i>Bidder</i> requests the removal of the requirement to undercoat the baggage bay areas as the baggage bay area is a combination of stainless steel and composite. Neither of these materials require undercoating for corrosion protection.			
Pace Response:			
Accepted.			

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IFB No. <u>419598</u>	Request #: <u>  3  </u>		
Exhibit: D _____	Page: 10 of 67	Section: TS 2.6.5 Corrosion	
Questions/Clarification or Request for Changes and Approved Equals:			
<p><i>Bidder requests removal of the sentence: “Bidders proposing steel tubing frame construction are required to use stainless steel tubing of comparable cross section.”</i></p> <p><i>Bidder’s frame is constructed with a combination of stainless and mild steel. Any areas where stainless steel is not used, bidder provides corrosion resistant coating. The frame construction contemplated by bidder is Altoona tested and approved and is consistent with previously delivered coaches to PACE.</i></p>			
Pace Response:			
Accepted.			

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IFB No. <u>419598</u>	Request #: <u>4</u>	
Exhibit: D	Page: 14 of 67	Section: 2.6.9.7 Parcel Racks
Questions/Clarification or Request for Changes and Approved Equals:		
<p><i>Bidder</i> requests approval for the following which is consistent with coaches previously delivered to PACE:</p> <ol style="list-style-type: none"><li>1. parcel rack support struts spaces at 48” rather than 40”</li><li>2. non adjustable LED reading lights in lieu of adjustable reading lights</li><li>3. a minimum of 15 speakers in lieu of 26 speakers</li><li>4. use of carpet covering for interior of parcel rack in lieu of vinyl.</li></ol>		
Pace Response:		
Accepted.		

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IFB No. <u>419598</u>	Request #: <u>5</u>		
Exhibit: D _____	Page: 23 of 67	Section: TS 2.8.3.7	
Questions/Clarification or Request for Changes and Approved Equals:			
<p><i>Bidder</i> requests the removal of the dedicated Hazard Warning indicator as it is not available. The hazard warning will be presented with both left turn and right turn indicator flashing simultaneously.</p>			
Pace Response:			
Accepted.			

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IFB No. <u>419598</u>	Request #: <u>6</u>	
Exhibit: D _____	Page: 27 of 67	Section: TS 2.9.3.1 Driver’s Seat Dimensions
Questions/Clarification or Request for Changes and Approved Equals:		
<i>Bidder</i> requests approval for the clarification the seat back shall be infinitely adjustable from 90 degrees to 102 degrees. The recline stop is 12 degrees rather than 24.5 degrees so as to not interfere with the driver’s barrier.		
Pace Response:		
Accepted.		

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IFB No. <u>419598</u>	Request #: <u>  7  </u>	
Exhibit: D	Page: 28 of 67	Section: TS 2.9.3.2
Questions/Clarification or Request for Changes and Approved Equals:		
<i>Bidder</i> requests approval that the driver’s seat cushion be made of polyurethane foam in lieu of silicone foam. Polyurethane is an industry preferred option and is consistent with our standard process and previous deliveries.		
Pace Response:		
Accepted.		

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IFB No. <u>419598</u>	Request #: <u>  8  </u>		
Exhibit: <u>_D</u>	Page: 47 of 67	Section: TS 3.3.7 Undercoating	
Questions/Clarification or Request for Changes and Approved Equals:			
<i>Bidder</i> requests the removal of the requirement to undercoat the baggage bay areas as the baggage bay area is a combination of stainless steel and composite. Neither of these materials require undercoating for corrosion protection.			
Pace Response:			
Accepted.			

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IFB No. <u>419598</u>	Request #: <u>  9  </u>	
Exhibit: D _____	Page: 54 of 67	Section: TS 3.6.4.2 Modular Design
Questions/Clarification or Request for Changes and Approved Equals:		
<p><i>Bidder</i> requests approval for the clarification that the powerplant wiring will require pulling wires through the bulkhead but will not require removing terminals from the wires. The bulkhead is foamed to prevent smoke leaks into the baggage and passenger compartment. Replacement of this harness in 30 minutes cannot be achieved.</p>		
Pace Response:		
Accepted.		



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IFB No. <u>419598</u>	Request #: <u>10</u>	
Exhibit: D _____	Page: 40 of 67	Section: TS 3.1.2.3 Air Cleaner
Questions/Clarification or Request for Changes and Approved Equals:		
<i>Bidder</i> requests approval for the Cummins supplied quick disconnect clip in lieu of a single wing nut.		
Pace Response:		
Accepted.		

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IFB No. <u>419598</u>	Request #: <u>11</u>	
Exhibit: D _____	Page: 52 of 67	Section: TS 3.6.2.1 Fuel Tank
Questions/Clarification or Request for Changes and Approved Equals:		
In order to accommodate the Emco-Wheaton fast fill requested in TS 3.6.2.2 Fuel Filler, <i>Bidder</i> must provide an aluminum fuel tank in lieu of polyethylene and requests approval of this exception.		
Pace Response:		
Accepted.		

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IFB No. <u>419598</u>	Request #: <u>  12  </u>		
Exhibit: D _____	Page: <u>  7  </u> of 67	Section: TS 2.4.1 Partial Wrap	
<b>Questions/Clarification or Request for Changes and Approved Equals:</b>			
<ol style="list-style-type: none"> <li>1. <i>Bidder</i> requests approval to provide all requested items as decals and not riveted plates. This is consistent with previous deliveries to PACE.</li>   <li>2. <i>Bidder</i> requests approval for the removal of the requirement that certain decals be photo luminescent. This is consistent with previous deliveries to PACE.</li> </ol>			
<b>Pace Response:</b>			
<ol style="list-style-type: none"> <li>1. Denied. Interior and exterior decals as specified have been successfully supplied and installed by bidder on previous orders.</li>   <li>2. Denied. Interior photo luminescent decals enhance passenger safety in low light conditions and are commercially available.</li> </ol>			

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IFB No. <u>419598</u>	Request #: <u>13</u>	
Exhibit: D _____	Page: 38 of 67	Section: TS 3.1.1.2 Top Speed
Questions/Clarification or Request for Changes and Approved Equals:		
<i>Bidder</i> requests approval to govern the speed at 72MPH in lieu of the requested 78MPH. 72MPH is consistent with speed rating as specified by the tire manufacturer.		
Pace Response:		
Accepted.		

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IFB No. <u>419598</u>	Request #: <u>14</u>	
Exhibit: <u>D</u>	Page: 16 of 67	Section: TS 2.7.7.3 Floor Protection
Questions/Clarification or Request for Changes and Approved Equals:		
<p><i>Bidder</i> requests removal of the requirement the floor be made of composite material. Composite flooring may be required for transit style buses where the floor is where the floor is subjected to environmental conditions (rain, snow, road salt, etc.). The passenger flooring in an <i>bidder</i> coach is not subjected to such environmental conditions.</p>		
Pace Response:		
Accepted.		

**INVITATION FOR BID NO. 419598  
FORTY FOOT DIESEL POWERED MOBILITY DEVICE ACCESSIBLE  
OVER THE ROAD COACHES  
REQUEST FOR CHANGES TO SPECIFICATIONS / OR EQUALS**

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IFB No. <u>419598</u>	Request #: <u>15</u>	
Exhibit: D _____	Page: 23 of 67	Section: TS 2.8.3.6 Driver Controls
Questions/Clarification or Request for Changes and Approved Equals:		
<i>Bidder</i> requests approval for rocker switches in lieu of rotary master switch. Upgrades and improvements to the design of the dash, have replaced rotary switches with rocker switches.		
Pace Response:		
Accepted.		

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IFB No. <u>419598</u>	Request #: <u>16</u>	
Exhibit: D _____	Page: 27 of 67	Section: TS 2.9.2.2 Structure and Design
Questions/Clarification or Request for Changes and Approved Equals:		
<i>Bidder</i> requests approval for the requirement for the seat pedestal to be stainless steel be optional. This is due to some manufacturers not offering a stainless steel pedestal.		
Pace Response:		
Pace will accept seat pedestals of stainless steel or powder coated/painted mild steel.		

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IFB No. <u>419598</u>	Request #: <u>17</u>	
Exhibit: D _____	Page: 51 of 67	Section: TS 3.6.1.2 Tires
Questions/Clarification or Request for Changes and Approved Equals:		
<p><i>Bidder</i> requests approval for the use of Firestone FS400 tires in lieu of Michelin XZA2. With recent changes to Buy America rules, the threshold is now 70%. In order for a manufacturer to meet 70%, American products must be sourced. Firestone meets Buy America while Michelin does not.</p>		
Pace Response:		
<p>Accepted. Bidder will be required to contact Bridgestone/Firestone and use the requested tire model from Pace’s tire lease contract.</p>		



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IFB No. <u>419598</u>	Request #: <u>18</u>		
Exhibit: D _____	Page: 36 of 67	Section: <u>TS 2.15.5 Lift</u>	
Questions/Clarification or Request for Changes and Approved Equals:			
It is uncertain prior to the RFA deadline if a 3 button controller pendant is available for the wheelchair lift. To avoid uncertainty, <i>bidder</i> requests approval for either a 3 button or 4 button controller pendant.			
Pace Response:			
Accepted.			

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IFB No. <u>419598</u>	Request #: <u>19</u>	
Exhibit: D _____	Page: 36 of 67	Section: TS 2.15.5 Lift
Questions/Clarification or Request for Changes and Approved Equals:		
<i>Bidder</i> requests approval for a black stow guard switch in lieu of red. This is consistent with supplier offerings.		
Pace Response:		
Accepted.		

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IFB No. <u>419598</u>	Request #: <u>  20  </u>		
Exhibit: D _____	Page: 45 of 67	Section: TS 3.2.1.4 Drive Shaft	
Questions/Clarification or Request for Changes and Approved Equals:			
<i>Bidder</i> requests approval for the removal of the requirement to provide metal locking plates on the U joints. <i>Bidder</i> applies LOCKTITE to the fasteners negating the need for a metal locking plate.			
Pace Response:			
Accepted.			

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IFB No. <u>419598</u>	Request #: <u>  21  </u>	
Exhibit: D _____	Page: 51 of 67	Section: TS 3.5.1.4 Air System
Questions/Clarification or Request for Changes and Approved Equals:		
<i>Bidder</i> requests approval for a single Wabco SS1200 plus air dryer in lieu of the dual Bendix AD-IP		
Pace Response:		
Accepted.		

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IFB No. <u>419598</u>	Request #: <u>  22  </u>		
Exhibit: D _____	Page: 53 of 67	Section: TS 3.6.4.1 General Requirements	
Questions/Clarification or Request for Changes and Approved Equals:			
<i>Bidder</i> requests approval for the Parker MUX system in lieu of I/O controls.			
Pace Response:			
Accepted.			

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IFB No. <u>419598</u>	Request #: <u>  23  </u>		
Exhibit: D _____	Page: 54 of 67	Section: TS 3.6.4.4 Wiring and Terminals	
Questions/Clarification or Request for Changes and Approved Equals:			
<p><i>Bidder</i> requests approval for the following clarifications.</p> <ol style="list-style-type: none"> <li>1. SAE Recommended Practice J1292 replaced J555. SAE J1128 Type GXL wiring insulation will be used in general. SAE J1128 Type TXL wiring insulation will be used as specified by the component vender such as Allison Transmission</li> <li>2. Battery wiring shall conform to specification requirements of SAE Standard J1127-Type SGX, SGT or SGR and SAE Recommended Practice J541.</li> <li>3. All wiring harnesses over 5-feet (1.50 meters) long and containing at least five (5) wires shall include at least 2 or 10 percent excess wires whichever is greater for spares, excluding the battery cables and the harness located in the front interior area and parcel rack area which are not serviceable.</li> </ol>			
Pace Response:			
<ol style="list-style-type: none"> <li>1. Accepted.</li> <li>2. Accepted.</li> <li>3. Accepted.</li> </ol>			

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IFB No. <u>419598</u>	Request #: <u>  24  </u>	
Exhibit: D _____	Page: 56 of 67	Section: TS 3.6.5.2 Batteries
Questions/Clarification or Request for Changes and Approved Equals:		
While commercially available, this technology is new to <i>bidder</i> and we would require opportunity to evaluate, test, and incorporate into our design. <i>bidder</i> requests the requirement that batteries have Bluetooth diagnostics be optional and reviewed during the pre-production meeting.		
Pace Response:		
Clarification: Bluetooth diagnostics is part of the battery design and does not require bidder interaction.		

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IFB No. <u>419598</u>	Request #: <u>  25  </u>		
Exhibit: D _____	Page: 56 of 67	Section: TS 3.6.5.3 Master Battery Switches	
Questions/Clarification or Request for Changes and Approved Equals:			
<p><i>Bidder</i> requests approval to remove the requirement that the fare box bypass any and all disconnects. Wiring the fare box “hot” increases the battery draw when the coach is not in operation and could potentially have a negative impact on the battery lifecycle.</p>			
Pace Response:			
<p>Accepted, providing the Farebox Circuit is connected to a source that does not power down for a minimum of thirty minutes.</p>			



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IFB No. <u>419598</u>	Request #: <u>26</u>	
Exhibit: D _____	Page: 57 of 67	Section: TS 3.7.1 Capacity and Performance
Questions/Clarification or Request for Changes and Approved Equals:		
<i>Bidder</i> requests approval for the removal of the requirement of a manually adjustable belt tensioning system. <i>Bidder's</i> system is automatic, so a manual system is not required. Furthermore, Cummins does not approve the use of a manually adjustable system.		
Pace Response:		
Accepted.		

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IFB No. <u>419598</u>	Request #: <u>27</u>	
Exhibit: D _____	Page: 59 of 67	Section: TS 3.8.1 Fare Box
Questions/Clarification or Request for Changes and Approved Equals:		
<i>Bidder</i> requests clarification if voltage requirements are 12V or 24v.		
Pace Response:		
Voltage requirements are 12V.		

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IFB No. <u>419598</u>	Request #: <u>28</u>		
Exhibit: D _____	Page: 59 of 67	Section: TS 3.8.2 Ventra	
Questions/Clarification or Request for Changes and Approved Equals:			
<p>More information required from <i>bidder</i> is requested:</p> <ol style="list-style-type: none"> <li>1. Please provide part number of Cubic dump module for power supply that contractor needs to provide.</li> <li>2. Please provide part number for harnesses from Cubic for the Ventra validator and Driver Terminal that contractor needs to provide.</li> </ol>			
Pace Response:			
<ol style="list-style-type: none"> <li>1. 5700-01024 Cubic Dump Load Module.</li> <li>2. 5700-06069 Cubic Mobile Validator Communication Harness. 5700-06071-3 Cubic Mobile Validator Power Harness. 5700-10008-1 Cubic Driver Terminal Harness.</li> </ol>			

**INVITATION FOR BID NO. 419598**

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IFB No. <u>419598</u>	Request #: <u>  29  </u>		
Exhibit: D _____	Page: 52 of 67	Section: TS 3.6.3.2 Front and Rear Bumpers	
Questions/Clarification or Request for Changes and Approved Equals:			
<p><i>Bidder</i> requests the deletion of the reference to a ‘damping system’ when describing the bumpers. This is inconsistent with the design of our bumpers.</p>			
Pace Response:			
Accepted.			

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IFB No. <u>419598</u>	Request #: <u>30</u>	
Exhibit: D _____	Page: 65 of 67	Section: TS 3.8.8 Fire Suppression
Questions/Clarification or Request for Changes and Approved Equals:		
<i>Bidder</i> requests approval for an Amerex system with 3 spot sensors but, and without linear sensors. this configuration would be consistent with the configuration approved by Amerex which and was provided on previous orders.		
Pace Response:		
Accepted.		

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IFB No. <u>419598</u>	Request #: <u>31</u>		
Exhibit: A _____	Page: 2 of 10	Section: 10 Indemnification	
Questions/Clarification or Request for Changes and Approved Equals:			
Section: (1) the first sentence of this paragraph should be revised to read “Except as provided below, the Contractor shall . . .” and, (2) a new sentence be added to the end of the paragraph to read as follows: “The foregoing shall not apply to the extent that the injuries, losses, claims, suits, costs and expenses arise out of the acts or omissions of Pace, its agents, officials or employees”.			
Pace Response:			
Accepted.			

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IFB No. <u>419598</u>	Request #: <u>32</u>	
Exhibit: B _____	Page: 3	Section: 3 Indemnification
Questions/Clarification or Request for Changes and Approved Equals:		
Section: (1) the first sentence of this paragraph should be revised to read “Except as provided below, the Contractor shall . . .” and, (2) a new sentence be added to the end of the paragraph to read as follows: “The foregoing shall not apply to the extent that the injuries, losses, claims, suits, costs and expenses arise out of the acts or omissions of Pace, its agents, officials or employees”.		
Pace Response:		
Accepted.		

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IFB No. <u>419598</u>	Request #: <u>33</u>	
Exhibit: A _____	Page: 4 of 10	Section: 15 Termination for Insufficient Funds
Questions/Clarification or Request for Changes and Approved Equals:		
<p><i>Bidder</i> expects Pace not to issue a signed contract or PO until they have secured funding. Once a contract is signed, or a PO is received, <i>bidder</i> expects a valid agreement with both parties fulfilling their obligations. <i>Bidder</i> requests the removal of this clause as adequate flexibility for termination is contemplated in Section 6 of Exhibit B</p>		
Pace Response:		
Accepted.		



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IFB No. <u>419598</u>	Request #: <u>34</u>	
Exhibit: B _____	Page: 3	Section: 6 Termination
Questions/Clarification or Request for Changes and Approved Equals:		
The third sentence of this paragraph shall read “If Pace terminates this Contract other than for breach thereof by the Contractor, Pace agrees to pay the contractor for all Coaches, parts and/or other items ordered and delivered, plus cancellation charges equal to its costs and contract close-out costs, including but not limited to, any and or all claims or costs (i) incurred settling outstanding liabilities, purchase orders and/or supply contracts; (ii) of work in process, completed work, supplies, and other material produced as part of, or acquired in connection with the performance of, the portion of the contract terminated; (iii) incurred to rework or otherwise make the coaches subject to the termination for convenience ready for resale; (iv) incurred for labor and administrative time to perform, identify, and account for the items in subsections (i), (ii), and (iii); or, (v) otherwise incurred or arising out of, or as a result of, the termination.”		
Pace Response:		
Denied. Pace make each order for Coaches once funding is approved and received, not before.		

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OVER THE ROAD COACHES  
REQUEST FOR CHANGES TO SPECIFICATIONS / OR EQUALS**

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IFB No. <u>419598</u>	Request #: <u>  35  </u>		
Exhibit: A _____	Page: 3	Section: 11 Payment/Invoicing	
Questions/Clarification or Request for Changes and Approved Equals:			
<p>Beginning with the Roman numeral I paragraph of this Section 11, delete “Pace shall make...” through and including the paragraph following Roman numeral III, “...to verify said progress.” and replace with the following:</p> <p>Pace shall make payment for each coach within thirty (30) calendar days of delivery and acceptance of each coach.</p> <p>Pace shall make payments for spare parts and/or equipment at the unit prices itemized in the price schedule upon the delivery and acceptance of said spare parts and/or equipment and within thirty (30) calendar days of receipt of a proper invoice. Title for spare parts and/or equipment shall transfer to Pace upon payment. Said title shall be free of all encumbrances.</p>			
Pace Response:			
<p>Denied. Pace will make payments for the Coaches through 95% and 5% milestones, not 100% at one time. Spare parts and/or equipment are not covered under this Contract unless they are covered under the warranty.</p>			

**INVITATION FOR BID NO. 419598  
FORTY FOOT DIESEL POWERED MOBILITY DEVICE ACCESSIBLE  
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IFB No. <u>419598</u>	Request #: <u>36</u>		
Exhibit: D _____	Page: 26	Section: TS 2.9.2.2 Structure and Design	
Questions/Clarification or Request for Changes and Approved Equals:			
<p>“Seat foam padding shall be molded foam meeting CA-117 standard”. We believe CA-117 is listed in error. It is a discontinued flammability standard that was used for furniture and bedding products, never transportation.</p> <p>Our suggestion is that the seating components be compliant with Docket 90-A, which is the Federal Transit Administration suggested fire safety criteria. The foam cushioning is the greatest fuel load in the interior of vehicles, and the use of Docket 90-A eliminates the risk of rapid combustion when exposed to minor ignition sources, as well as toxic, black smoke. The use of any less of a flammability standard put ridership, drivers, and equipment at serious risk.</p> <p>We request the following modification under Cushioning Materials: “Seat foam padding shall be Neoprene Compound cushioning, meeting FTA Docket 90-A.”</p>			
Pace Response:			
Accepted.			

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IFB No. <u>419598</u>	Request #: 1		
Exhibit: <u>_D_____</u>	Page: 3 of 67	Section: TS 1.5.1.1 Physical Size	
<b>Questions/Clarification or Request for Changes and Approved Equals:</b>			
<p><i>Bidder</i> Requests a First Step Height of 16.5 inches in lieu of the requested 15.5”</p> <p>The step height of 16.5” is consistent with the current build of our coaches. It is also consistent with previously delivered coaches to PACE. We believe this level of consistency is beneficial to PACE as it will provide that consistency throughout the PACE fleet.</p>			
<b>Pace Response:</b>			
Accepted.			

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IFB No. <u>419598</u>	Request #: 2		
Exhibit: n/a	Page: n/a	Section: n/a	
<b>Questions/Clarification or Request for Changes and Approved Equals:</b>			
<p><i>Bidder</i> is in the process of renewing its product variants, specifically the current platform. <i>Bidders’</i> Commuter Coach is currently in operation with PACE. The Commuter Coach is expected to continue in production through the middle of 2023. The successor product is an updated and enhanced Commuter Coach reflecting the future needs of the public sector commuter market. The production start date for this model may not begin until 2025 or later and as such <i>bidder</i> is requesting approval to submit its proposal based on either fulfilling all PACE quantity requirements by July 2023 or submitting pricing for the new model.</p>			
<b>Pace Response:</b>			
<p>See update to <i>Exhibit A, Section 2, Contract Term</i>.</p>			

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IFB No. <u>419598</u>	Request #: <u>_3</u>		
Exhibit: n/a	Page: n/a	Section: n/a	
Questions/Clarification or Request for Changes and Approved Equals:			
<p><i>Bidder</i> requests the removal of the requirement for ‘wet signatures’.</p> <p><i>Bidder</i> has responded to many bids and RFPs using scanned or photocopied signatures. We request the same flexibility for this response. Both contractually and legally, a photocopied signature retains the same level of authority as that of a ‘wet signature’.</p> <p>Demanding original signatures places a significant administrative burden on the response process. Our signatory and response group are in different physical locations. This requires several additional overnight courier trips. Given the current environment, it places additional risk on the successful completion of the bid. To fulfill your needs we would be pleased to provide such wet signatures should we be the successful bidder.</p>			
Pace Response:			
<p>See update to <i>Exhibit A, Contract Signature Page</i>.</p>			

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IFB No. <u>419598</u>	Request #: <u>_4</u>		
Exhibit: D	Page: 2	Section: TS 1.1 Definitions	
Questions/Clarification or Request for Changes and Approved Equals:			
<p>Item 12. Definition states “or having a flame spread index of less than 150 as measured in a radiant panel flame test as per ASTM E-162-75”.</p> <p>This test method is not used alone by itself. The industry suppliers use it in conjunction with a smoke test as specified in Docket 90 A. This is a vertical flame test and FMVSS 302 is horizontal in orientation. We ask for this to be removed and to add Docket 90 to the specification as appropriate safety level.</p>			
Pace Response:			
<p>ASTM E-162 is still a requirement in the transit industry and remains a valid test.</p>			

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IFB No. <u>419598</u>	Request #: <u>_5</u>	
Exhibit: D	Page: 26	Section: TS 2.9.2
<b>Questions/Clarification or Request for Changes and Approved Equals:</b>		
<p>Specification states: “Seat foam padding shall be molded foam meeting CA-117 standards” CA-117 has been discontinued and it was used for furniture, not transportation grade materials. We ask for Docket 90 test methods to be used for fabric and cushioning to provide a recognized level of passenger safety.</p>		
<b>Pace Response:</b>		
<p>Per <i>Exhibit D, Technical Specifications, TS 2.9.2.2 Structure and Design</i>, “seat foam padding shall be Neoprene Compound cushioning meeting FTA Docket 90-A.”</p>		



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IFB No. <u>419598</u>	Request #: <u>_6</u>		
Exhibit: D	Page: 26	Section: TS 2.9.2	
<b>Questions/Clarification or Request for Changes and Approved Equals:</b>			
<p>Section states “Driver seats shall be covered in premium black fabric”          Can you provide durability specifications?          material composition, warranty expectations?          We provide a 5-yr. warranty on upholstery products provided to the Transportation market.</p>			
<b>Pace Response:</b>			
<p><i>Exhibit D, Technical Specifications, TS 2.9.3, Driver’s Seat</i> provides the durability and all other required specifications for the driver’s seat.</p>			

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IFB No. <u>419598</u>	Request #: <u>_7</u>	
Exhibit: D	Page: 28	Section: TS 2.9.3.2
<b>Questions/Clarification or Request for Changes and Approved Equals:</b>		
<p>Camira has several “premium grade gray fabrics and rugged carpet materials. fleck grade cord with acrylic backings”. Can you provide durability specifications? material composition, warranty expectations? We provide a 5-year warranty on all upholstery products provided to the Transportation market.</p>		
<b>Pace Response:</b>		
<p><i>Exhibit D, Technical Specifications, TS 2.9.2, Passenger Seats</i> provides the durability and all other required specifications for the passenger seats.</p>		