CONTRACT BETWEEN

JACKSONVILLE TRANSPORTATION AUTHORITY

AND

GILLIG LLC

THIS CONTRACT is made this 24 day of May, 2019, by and between the **JACKSONVILLE TRANSPORTATION AUTHORITY** (the "Authority" or the "JTA"), a public body corporate and politic whose principal business address is 121 West Forsyth Street, Suite 200, Jacksonville, Florida 32202, and a **GILLIG LLC** (the "Contractor"), a California Limited Liability Company whose principal business address is 451 Discovery Drive, Livermore, CA 94551. The JTA and the Contractor may hereinafter be referred to individually as a "Party" and collectively as the "Parties".

W I T N E S S E T H

WHEREAS, the Authority has publicly advertised the Request for Proposals, **RFP P-18-005 STATE OF FLORIDA HEAVY DUTY TRANSIT BUS CONSORTIUM** (as amended, the "RFP" or the "Solicitation") and the entire Solicitation package is incorporated herein;

WHEREAS, the Contractor has prepared and submitted its Proposal, dated September 12, 2018 (the "Proposal"), which is incorporated herein;

WHEREAS, the Authority has selected the Contractor, in accordance with all applicable laws, to provide the specific scope of work, services, and goods (and all other items necessary, proper for or incidental thereto) that are described in the Technical Specifications ("**Exhibit A**") and made a part hereof, on the terms herein contained;

WHEREAS, the Contractor hereby represents and warrants to the Authority that the Contractor is a legal entity formed under the laws of the State of California, is authorized to conduct business in the State of Florida, has taken all entity action necessary with respect to the execution and delivery of its obligations under this Contract and the officer of the Contractor who has executed and delivered this Contract is duly authorized with respect thereto;

WHEREAS, the Contractor hereby represents and warrants to the Authority that the Contractor is qualified and responsible regarding the goods and/or services to be provided hereunder, that all Contractor's licenses required and regulated by the Florida Department of Business and Professional Regulation are active and current, that each of the officers, employees, and agents of the Contractor who will perform services in connection with this Contract on behalf of the Contractor meet the conditions of this clause, and that all individuals performing services are properly licensed when required by law;

WHEREAS, the Authority is the agent for other governmental entities within the State of Florida (each a **"Purchaser"** and collectively, the **"Purchasers"**), which may also desire to procure under this Contract according to the requirements in the Solicitation and as further described herein;

WHEREAS, the Authority is the agent of the Purchasers and hence any reference to the Authority also includes by inference the Purchasers;

WHEREAS, the Authority and the Contractor agree that the Purchasers shall be authorized to issue individual purchase orders in accordance with the terms and conditions of the Contract.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Authority and the Contractor do hereby agree as follows:

I. Terms and Conditions

1. Performance of Services. All of the services shall be performed by the Contractor and its authorized subcontractors as identified by the Contractor. Notwithstanding the use of one or more subcontractors by the Contractor, the Contractor acknowledges and agrees that all of the services performed and to be performed hereunder shall be the sole responsibility of the Contractor, and Contractor hereby agrees that it warrants all such work as if such work had been performed directly by the Contractor.

2. Order of Precedence. All of the terms and conditions of the Solicitation are hereby incorporated herein in full. In the event of a conflict between the terms of any of the following, the more stringent requirement shall apply. If the conflict cannot be resolved by following the most stringent requirement, the following order of precedence shall govern: (1) Section VII of the Solicitation that contains the required clauses for federally-assisted contracts, when applicable; (2) properly authorized written Contract Amendments; (3) properly authorized Purchase Orders; (4) this Contract; (5) the Specifications; (6) Special Conditions; (7) the Solicitation Addenda, if any; and (8) the Solicitation. As between the drawings and other specifications, the drawings take precedence over other specifications as to quantity and location and the specifications take precedence over drawings as to quality of materials and workmanship.

3. Review of Work. Any review of the work by the Authority, its other Contractors, or its partner agencies, including the City of Jacksonville, Florida Department of Transportation (FDOT), Federal Highway Administration (FHWA), and Federal Transit Administration (FTA), is for the sole benefit of the Authority. No such review, acceptance, or approval to proceed to the next level of service, nor the payment of any invoice (including the last invoice, release of retainage, or acceptance of final reports or plans and specifications) shall be deemed to constitute: (1) detailed review or checking of design, details, or accuracy of the Contractor's work; (2) a professional approval by the Authority; or (3) a release of the Contractor from any of its obligations and responsibilities for the accuracy of the plans and specifications. The Authority's review, approval, acceptance of, or payment for any of the services under this Contract shall not constitute a waiver of any of the Authority's rights under this Contract or any cause of action it may have arising out of this Contract.

4. Contract Amendment(s). If any modification to the Contract or a Purchase Order is required, the Parties shall execute an Amendment before the Contractor begins performing any additional or changed tasks associated therewith. Reference herein to the Contract includes all Amendments, if any. In such event, the Contractor will have

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the right to submit the dispute to the SVP/Chief Administrative Officer for resolution in accordance with the Disputes Section 9 Paragraph 5 below; however, in no event will the resolution of the dispute through the courts or otherwise, relieve the Contractor from the obligation to timely perform the supplemental work. Notwithstanding the foregoing, the Authority has the right to terminate the Contract if the Parties fail to reach an agreement on an Amendment.

5. Standard of Care and Quality of Goods. The Contractor shall perform (and cause all subcontractors to perform) all services in a manner that is consistent with the level of reasonable care, skill, judgment and ability provided by others providing a similar type of service in the same geographic area. The standard of care shall not be altered by the application, interpretation, or construction of any other provision of this Contract or any document incorporated or referenced herein, including the Solicitation. Unless otherwise expressly allowed by the specifications, all items furnished by the Contractor in connection with the work performed hereunder must be completely new and free from defects.

6. Guarantee/Warranty. Warranty provisions are further detailed in "**Exhibit C"**.

7. Personnel. All of the personnel assigned by the Contractor and all subcontractors shall be qualified and authorized under state and local laws to perform the applicable services, whether by appropriate license, registration, certification, or other authorization. Contractor agrees that it will remove from assignment under this Contract any employee or subcontractor, upon request by the Authority, which may be with or without cause. Any such removal shall not necessarily reflect on the capability or competence of the individual or entity so removed. Nothing herein shall affect the status or responsibilities of the Contractor as an independent contractor solely responsible for the method, manner, and means chosen by it to perform hereunder.

8. Schedule(s). The Contractor agrees that time is of the essence for the performance of each of the Contractor's obligations hereunder. The Contractor shall complete the work in accordance with the schedule set forth in the Solicitation and provide schedule progress reports, if applicable, in a format acceptable to the Authority and at intervals established by the Authority. The Authority will be entitled at all times to be advised, at its request, as to the status of work being performed by the Contractor and of the details thereof. Either Party may request and be granted a conference. If, at any time prior to completion of the work, the Contractor determines that the work is not progressing according to the schedule, the Contractor shall immediately notify the Authority in writing and shall provide a description of the cause of the delay, the effect on the schedule, and the recommended action to meet the schedule. An extension of time for performance shall be the Contractor's sole and exclusive remedy for any delay of any kind or nature caused by the Authority.

9. Corrections and Clarifications. Upon request by the Authority, the Contractor shall promptly make any revisions or corrections that resulted from any error and/or omission by the Contractor or subcontractors, and shall clarify any ambiguities, without additional compensation. Acceptance of the work by the Authority shall not relieve the Contractor of the responsibility for subsequent corrections and clarifications. At any time during any phase of work for which the Contractor or any

relieve the Contractor of the responsibility for subsequent corrections and clarifications. At any time during any phase of work for which the Contractor or any of its subcontractors has performed services for the Authority, or during any phase of work performed by others, based on data furnished by the Contractor to the Authority, the Contractor shall confer with the Authority for the purpose of interpreting the information furnished and/or to correct any errors and/or omissions made by the Contractor or its subcontractors. The Contractor shall perform all services necessary to correct its or its subcontractors' errors and/or omissions without additional compensation, even though final payment may have been received therefore. If any work or service contains an error, omission, deficiency, or mistake, the Authority may back-charge against the Contractor all reasonable costs incurred in identifying, documenting, and remedying any such error, omission, deficiency, or mistake. Such back-charge amounts may be deducted from any payment(s) due the Contractor. If the payment(s) due the Contractor are not sufficient to cover such amount(s), the Contractor shall pay the difference to the Authority. The Contractor shall be liable, and shall reimburse the Authority, for any and all expenses incurred by the Authority, above those that would normally be experienced if the Contractor's or its subcontractors' errors and/or omissions had not occurred.

II. Compensation, Invoices, and Terms of Payment

1. All invoices shall reflect the applicable Proposal prices and shall show details of the computation of the amount requested including detailed descriptions of all items included in each bus.

2. The Contractor agrees to comply with Pre-Award and Post-Delivery Audits 49 USC § 5323(l) and FTA's implementing regulation at 49 CFR Part 663 and to submit the following certifications: 1.) Buy America requirements: The Contractor shall complete and submit a declaration certifying either compliance or noncompliance with Buy America. If the recommended Bidder/Proposer certifies compliance with Buy America, it shall submit documentation that lists (1) component and subcomponent parts of the rolling stock to be purchased identified by manufacturer of the parts, their country of origin and costs; and (2) the location of the final assembly point for the rolling stock, including a description of the activities that will take place at the final assembly point and the cost of final assembly. 2) Solicitation specification requirements: The Contractor shall submit evidence that it will be capable of meeting the bid specifications. 3) Federal Motor Vehicle Safety Standards (FMVSS): The Contractor shall submit (1) manufacturer's FMVSS self-certification, Federal Motor Vehicle Safety Standards, that the vehicle complies with relevant FMVSS or (2) manufacturer's certified statement that the contracted buses will not be subject to FMVSS regulations.

3. The general cost principles and procedures for the negotiation and administration, and the determination or allowance of costs under this Contract will be as set forth in the Code of Federal Regulations, Titles 23, 48, 49, Rule Chapter 14-75, Florida Administrative Code, and other pertinent federal and state regulations, as applicable, with the understanding that there is no conflict between state regulations and federal regulations in that the more restrictive of the applicable regulations will govern.

4. Records of costs incurred under the terms of this Contract shall be maintained by the Contractor and upon written request, made available to the Authority at all times during the period of this Contract and for five (5) years after final payment is made for the work pursuant to this Contract. Copies of these documents and records shall be furnished to the Authority upon request.

5. Records of costs incurred will include: (1) the Contractor's general accounting records and Project records; (2) supporting documents and records of the Contractor and all subcontractors within the scope of this Contract; and (3) all other records related to the Contract that are considered necessary by the Authority for a proper audit of costs.

6. The Authority will have the right to retain, out of any payment due the Contractor under this Contract, an amount sufficient to satisfy any amount due and owing to the Authority by the Contractor on this Contract or any other agreement between the Contractor and the Authority. The Authority may withhold payment on any invoice in when the Contractor is in default under any provision of this Contract, or when the Authority determines that the schedule cannot be met and an extension of time is not warranted. The Authority may also withhold payment when payment from the Contractor is due in connection with indemnification or any other agreement between the Contractor and the Authority. This right to withhold payments will continue until such time as the Authority has been made whole.

6. All invoices requesting payment for subcontractor's services, Contractor's services, reimbursable items, or expense items, must have copies of actual invoices or receipts attached which support the amounts invoiced, in such form and with such supporting detail as the Authority may require.

7. The Authority shall have the right, but not the obligation, based upon sworn statements of accounts from the subcontractors, and in accordance with the Contractor's written request, to pay a specific amount directly to a subcontractor. In such event, the Contractor agrees that any such payments shall be treated as a direct payment to the Contractor’s account.

8. The Authority shall make payments to the Contractor based upon the approved invoices and supporting documentation and deliverables within thirty (30) days of the receipt by the Authority of a complete invoice and acceptance (final or provisional) of the bus(es). Within fifteen (15) days after arrival at the designated point of delivery, each Bus shall undergo testing by the Authority or the applicable Purchaser. If the bus passes these tests, acceptance of the bus by the Authority or the applicable Purchaser occurs on the fifteenth (15^{th}) day after delivery. Acceptance may occur earlier if the Authority or applicable Purchaser notifies the Contractor of early acceptance or places the bus in revenue service. If the bus fails these tests, the Contractor requires written communication of discrepancies for resolution to be issued by the fifteenth (15^{th}) calendar day after delivery. The Authority reserves the right to conditionally or provisionally accept one or more buses subject to the correction of minor deficiencies.

9. All invoices shall be sent to the attention of the Accounts Payable Office at accountspayable@jtafla.com or as directed by other Purchasers. The Authority may request additional documentation from the Contractor prior to payment of any invoice or bill from the Contractor. Invoice payment requirements do not start until a properly

completed invoice is provided to the Authority or the Purchaser. If an invoice is not approved, in whole or in part, the Authority will inform the Contractor of the issue and Contractor will not be paid until the issue has been resolved to the satisfaction of the.

10. Prompt Payment Discounts. Discounts for early payment may be offered either in the original Proposal or on individual invoices submitted under the Contract. Discounts that are included in the Proposal become a part of the Contract and are binding on the Contractor for all invoices submitted under the Contract. If the Contractor has offered a prompt payment discount, the Authority will only apply discounts that equal or exceed two percent (2%) of the invoice amount for payments that are made between ten (10) and twenty-nine (29) days after the Authority's receipt of a complete, acceptable invoice. For purposes of this Paragraph, time shall be computed from the date the invoice was received by the Authority and payment shall be considered to have been made on the date which appears on the payment check.

11. All compensation for services under a particular work or Purchase Order is subject to and contingent upon the availability of the federal, state, and/or local funding source that is applicable to the work or Purchase Order.

12. The acceptance of final payment by the Contractor shall be a full release of the Authority or the Purchaser and its members, officers, agents, and employees for any and all claims arising out of or relating to this Contract. The Contractor hereby waives all indirect, incidental, special, and consequential damages in any proceeding arising out of or relating to this Contract.

III. Ownership of Documents and Inspection of Work

1. The Authority will have the right to visit the Contractor's site for inspection of the Contractor's work at any time during reasonable work hours. In addition to the inspection and audit rights set forth herein, the Authority, its agents, and employees may perform inspections of the work at any reasonable time and at any stage of production. Such inspection or failure to inspect on any occasion shall not affect the Authority's rights, or the Contractor's obligations, under warranty or other provisions of this Contract, nor shall such inspection be deemed acceptance of services.

IV. Term of Contract and Termination

1. This Contract shall commence upon execution by the Authority and shall be effective for two (2) years with three (3) one (1) year options to renew.

2. The Contractor shall hold all pricing referenced in "**Exhibit B**" through December 31, 2019. Thereafter, pricing adjustments will be based on the Producer Price Index (PPI) Series ID: WPU1413, Truck and Bus Bodies and will be capped at four and one-half percent (4.5%) per year. Price quotes will be valid for ninety (90) days.

3. The Authority may terminate this Contract, in whole or in part, by delivering to the Contractor a written Notice of Termination. The Authority may terminate the Contract for its convenience or for failure of the Contractor to fulfill any of its obligations hereunder, including without limitation, the Contractor's failure to

complete work within the required time or the Contractor's failure to diligently proceed with the work to the satisfaction of the Authority. The Contractor shall have the opportunity to affect a remedy within fifteen (15) days of the Notice of Termination. Upon the Contractor's receipt of a written Notice of Termination from the Authority, the Contractor shall: (1) immediately stop all further work unless otherwise directed in writing by the Authority as no compensation shall be paid for any work performed after receipt of such notice (provided however that expense of a nature which cannot be immediately terminated shall be reimbursed at the minimum amount which may reasonably be arranged for such termination, if the Authority concurs); and (2) deliver to the Authority's Project Manager copies of all data, drawings, specifications, reports, estimates, summaries, and other information and materials prepared while performing this Contract, whether completed or in process, in both paper and electronic formats acceptable to the Authority. In addition, if the Contractor has possession of Authority goods, it shall immediately provide the Authority with an accounting of same and protect and preserve those goods until surrendered to the Authority or its agent(s) or otherwise disposed of as directed by the Authority.

4. These termination provisions shall be made a part of all subcontracts under this Contract.

5. After the effective date of the Notice of Termination, the Authority will only pay for work/services already performed and goods already delivered and accepted in accordance with the terms of the Contract. At the discretion of the Authority, the Authority may make an equitable adjustment to the compensation due to the Contractor, but under no circumstances shall the Contractor be entitled to payment for any anticipatory profit, for work/services not yet performed, or for goods not accepted by the Authority.

6. The Contractor's obligations to the Authority that arise from the Contractor's improper acts or omissions shall survive the termination of this Contract.

7. In the event that termination is due to default or breach by the Contractor, the Authority may take over and complete the work. In such case, the Contractor shall be liable to the Authority for any additional cost occasioned thereby.

8. Should the Contractor: (1) fail to comply with any federal, state, or local law or regulation, including FTA circular 4220.1F as revised, and 49 CFR Part 18, if applicable; (2) fail to comply with any condition of this Contract; or (3) fail to complete the required work or furnish the required materials within the time required, the Authority reserves the right to purchase in the open market, or to take over and complete, the required item/work at the expense of the Contractor without waiving any right against the Contractor or its Surety, if any.

9. If the total value of the Contract exceeds one million dollars ($1,000,000.00), the Authority may terminate the Contract if the Authority determines that the Contractor: (1) submitted a false certification required by Florida Statutes § 287.135; (2) has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List; or (3) has been engaged in business operations in Syria.

10. For the purposes of this Contract, an event of insolvency with respect to either Party hereto shall be deemed to be a default under this Contract by such Party. The term "event of insolvency" shall mean any of the following:

    A. The insolvency;
    B. The making of a general assignment for the benefit of creditors, the appointment of a receiver for the business or assets of such entity, or the application for the appointment of a receiver therefore;
    C. The filing of a petition by or on behalf of, or against such person or business in any bankruptcy court or under any bankruptcy or insolvency law; or
    D. The dissolution, liquidation or winding up of business.

V. Records and Audit

1. The Contractor agrees to maintain appropriate records with respect to work performed and other items reimbursable hereunder, and such records shall be supported by payrolls, invoices, vouchers, and other documents evidencing in proper detail the nature and propriety of the charges. All checks, payrolls, invoices, and other documents pertaining in whole or in part to the work shall be clearly identified, readily accessible, and to the extent feasible, kept separate and apart from all other such documents not related to the work.

2. The Contractor shall provide access to records and reports in accordance with the following which are incorporated herein by reference: 49 U.S.C. 5325, 49 CFR 18.36(i), and 49 CFR 633.17, as applicable.

3. The Contractor shall permit the Authority, the FDOT, the FHWA, the FTA, the State of Florida, the U.S. Government, and the authorized representatives of these agencies to inspect and audit all technical and economic project applicable data and records of the Contractor relating to its performance and its subcontracts under this Contract from the date of Contract through and until the expiration of five (5) years after completion or termination of the Contract, except in the event of litigation or settlement of claims arising from performance of this Contract, in which case the Contractor agrees to maintain same until all said and affected agencies and their authorized representatives have disposed of all such litigation, appeals, claims, or exceptions related thereto.

4. The Contractor shall provide, upon receipt of reasonable notice, free access to its books and records by the proper officers and representatives of the Authority, the FDOT, the FHWA, the FTA, the State of Florida, the U.S. Government, and the authorized representatives of these agencies during reasonable business hours. Further, the said agencies and their authorized representatives shall have the right, pursuant to an inspection, to review, audit, reproduce, or copy excerpts and transcriptions therefrom as necessary, and to inspect all work data, documents, proceedings, and activities related to this Contract. The Contractor shall include provisions similar to this Paragraph in all subcontracts which it awards, including, but not limited to, the additional provisions of allowing the Contractor, the Authority, the FDOT, the FHWA, the FTA, the State of Florida, the U.S. Government, and the

authorized representatives of these agencies equal access to subcontractors' books and records.

VI. Conflict of Interest

1. The Contractor shall not promise any employee of the Authority, whose duties include matters relating to or affecting the subject matter of this Contract, compensation of any kind or nature from the Contractor, while such employee is employed by the Authority, or for one (1) year thereafter.

2. The Contractor affirms that it will not take part in any activities that will be a conflict of interest with the Authority or that would appear to compromise the integrity of the Authority. The Contractor shall provide written notice to the Authority immediately upon occurrence or first identification of any potential conflict-of-interest situation.

3. Upon request by the Authority, the Contractor shall execute any Conflict-of-Interest Certification that may be required.

VII. Debarred Proposers

The Contractor has a continuing obligation to inform the Authority whether it is or has been placed on any debarred, suspended, or excluded parties list maintained by the United States Government or the State of Florida. Should the Contractor, including any of its officers or holders of a controlling interest, be included on such a list during the performance of this Contract, the Contractor shall immediately inform the Authority. This obligation must be included in all subcontracts.

VIII. Indemnification

1. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Authority and its Board of Directors, officers, and employees, from liabilities, damages, losses, and costs, including but not limited to reasonable attorneys' fees, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the Contractor and other persons or entities employed or utilized by Contractor in the performance of this Contract. The provisions of this Paragraph shall survive the termination of this Contract. The indemnification obligation hereunder shall not be limited in any way by amount or type of damages, compensation or benefits payable under workers' compensation acts, disability benefits acts, or other employee benefit acts.

2. In the event applicable law renders any provision of this Section unenforceable, then solely to the extent necessary to conform such provision to the requirements of law to remedy such unenforceable matter, such provision is deemed revised so as to be enforceable under law.

3. In addition to the Contractor's indemnification obligation, the Contractor shall be responsible for all liability for loss or damages, and it shall also be responsible for the payment of any fines imposed by any federal, state, or local agency as a result of the Contractor's actions or failure to act.

IX. Disputes, Defaults and Remedies

1. Upon a breach of any of the obligations of the Contractor or the Authority hereunder, the non-breaching Party shall have all of the rights and remedies provided under law, including, but not limited to the rights and remedies under the Uniform Commercial Code as in effect in the State of Florida, if applicable, as well as those referenced in 49 CFR Part 18 and FTA Circular 4220.1F, as revised. In addition, the non-breaching Party shall have all of the other rights and remedies specified elsewhere in this Contract.

2. During any dispute, unless otherwise directed by the Authority, the Contractor shall continue to diligently perform the work while matters in dispute are outstanding, unless a Notice of Termination has been issued by the Authority.

3. Should the Contractor suffer injury or damage to person or property because of any act or omission of the Authority, or any of the Authority's employees, agents, or others for whose acts the Authority is legally liable, a claim for damages therefore shall be made in writing to the Authority within thirty (30) days after the first observance of such injury or damage. The failure to timely submit a written claim shall result in a waiver the Contractor's claim.

4. Disputes arising in the performance of this Contract shall be decided in writing by the Authority's SVP/Chief Administrative Officer, and the decision rendered shall be final and conclusive for the Authority.

5. Mandatory Mediation. All disputes arising out of or relating to this Contract shall be subject to mandatory pre-suit mediation under the auspices of a mediator to be selected by the Parties. Mediation must occur before a lawsuit is filed. Discovery prior to the scheduled mediation shall be limited to one (1) request for production of documents and two (2) depositions per Party not exceeding eight (8) hours total time per deposition. Each Party shall equally bear the costs of mediation and shall be solely responsible for its own attorneys' fees and other legal costs prior to and during the mediation process. In the event the case does not settle at mediation, the Parties may re-depose either or both witnesses on non-repetitive matters. The Contractor acknowledges that the Authority may not have present at any such mediation a person or persons authorized to bind the Authority. If the mediation fails to produce a settlement, and the amount in controversy is below seventy-five thousand dollars ($75,000.00), the Parties may agree to submit the dispute to fast-track arbitration with an AAA arbitration panel.

X. Insurance

1. Commercial General Liability Insurance

The Contractor shall purchase and maintain at the Contractor's expense Commercial General Liability insurance coverage (ISO or comparable Occurrence Form) for the life of this Contract. Modified Occurrence or Claims Made forms are not acceptable.

The Limits of this insurance shall not be less than the following limits:

Each Occurrence Limit	$1,000,000

Personal & Advertising Injury Limit	$1,000,000
Fire Damage Limit (any one fire)	$ 300,000
Medical Expense Limit (any one person)	$ 10,000
Products & Completed Operations Aggregate Limit	$2,000,000
General Aggregate Limit (other than Products & Completed Operations) Applies Per Project	$2,000,000

General liability coverage shall continue to apply to "bodily injury" and to "property damage" occurring after all work on the Site of the covered operations to be performed by or on behalf of the additional insureds has been completed and shall continue after that portion of "your work" out of which the injury or damage arises has been put to its intended use.

2. **Workers' Compensation and Employer's Liability Insurance**

The Contractor shall purchase and maintain at the Contractor's expense Workers' Compensation and Employer's Liability insurance coverage for the life of this Contract.

The Limits of this insurance shall not be less than the following limits:
Part One – Workers' Compensation Insurance – Unlimited Statutory Benefits as provided in the Florida Statutes and Part Two – Employer's Liability Insurance

Bodily Injury By Accident	$500,000 Each Accident
Bodily Injury By Disease	$500,000 Policy Limit
Bodily Injury By Disease	$500,000 Each Employee

*If leased employees are used, policy must include an Alternate Employer's Endorsement

3. Automobile Liability Insurance

The Contractor shall purchase and maintain at the Contractor's expense Automobile Liability insurance coverage for the life of this Contract.

The Limits of this insurance shall not be less than the following limits:
Combined Single Limit – Each Accident $1,000,000

Covered Automobiles shall include any auto owned or operated by the insured Contractor, insured Sub-Sub-Contractor including autos which are leased, hired, rented or borrowed, including autos owned by their employees which are used in connection with the business of the respective Contractor or Sub-Sub-Contractor.

4. Excess Liability Insurance

The Contractor shall purchase and maintain at the Contractor's expense Excess Liability (Umbrella Form) insurance coverage for the life of this Contract.

The Limits of this insurance shall not be less than the following limits:

Each Occurrence Limit	$5,000,000
Aggregate Limit	$5,000,000

Contractor shall require each of his Sub-Contractors to likewise purchase and maintain at their expense Commercial General Liability insurance, Workers' Compensation and Employer's Liability coverage, Automobile Liability insurance and Excess Liability insurance coverage meeting the same limit and requirements as the Contractors insurance.

Certificates of Insurance acceptable to Jacksonville Transportation Authority for the Contractor's insurance must be received within five (5) days of Notification of Selection and at time of signing Agreement.

Certificates of Insurance and the insurance policies required for this Agreement shall contain an endorsement that coverage afforded under the policies will not be cancelled or allowed to expire until at least thirty (30) days prior written notice has been given to Jacksonville Transportation Authority.

Certificates of Insurance and the insurance policies required for this Agreement will include a provision that policies, except Workers' Compensation, are primary and noncontributory to any insurance maintained by the Contractor.

Jacksonville Transportation Authority must be named as an Additional Insured and endorsed onto the Commercial General Liability (CGL), Auto Liability and Excess Liability policy (ies). A copy of the endorsement(s) must be supplied to Jacksonville Transportation Authority ten (10) days following the execution of the agreement or prior to the first date of services, whichever comes first.

CGL policy Additional Insured Endorsement must include Ongoing and Completed Operations (Form CG2010 11 84 **OR** Form CG2010 04 13 and GC2037 04 13 edition or equivalent). Other Additional Insured forms might be acceptable but only if modified to delete the word "ongoing" and insert the sentence "Operations include ongoing and completed operations".

CGL policy shall not be endorsed with Exclusion - Damage to Work performed by Sub-Contractors on Your Behalf (CG2294 or CG2295)
CGL policy shall not be endorsed with Contractual Liability Limitation Endorsement (CG2139) or Amendment of Insured Contract Definition (CG 2426)
CGL policy shall not be endorsed with Exclusion - Damage to Premises Rented to you (CG 2145)
CGL policy shall include broad form contractual liability coverage for the Contractors covenants to and indemnification of the Authority under this Contract

Certificates of Insurance and the insurance policies required for this Agreement shall contain a provision under General Liability, Auto Liability and Workers' Compensation to include a Waiver of Subrogation clause in favor of Jacksonville Transportation Authority.

All Certificates of Insurance shall be dated and shall show the name of the insured Contractor, the specific job by name and job number, the name of the insurer, the policy number assigned its effective date and its termination date and a list of any exclusionary endorsements.

All Insurers must be authorized to transact insurance business in the State of Florida as provided by Florida Statute 624.09(1) and the most recent Rating Classification/Financial Category of the insurer as published in the latest edition of "Best's Key Rating Guide' (Property-Casualty) must be at least A- or above.

All of the above referenced Insurance coverage is required to remain in force for the duration of this Agreement and for the duration of the warranty period. Accordingly, at the time of submission of final application for payment, Contractor shall submit an additional Certificate of Insurance evidencing continuation of such coverage.

If the Contractor fails to procure, maintain or pay for the required insurance, Jacksonville Transportation Authority shall have the right (but not the obligation) to secure same in the name of and for the account of Contractor, in which event, Contractor shall pay the cost thereof and shall furnish upon demand, all information that may be required to procure such insurance. Jacksonville Transportation Authority shall have the right to back-charge Contractor for the cost of procuring such insurance. The failure of Jacksonville Transportation Authority to demand certificates of insurance and endorsements evidencing the required insurance or to identify any deficiency in Contractors coverage based on the evidence of insurance provided by the Contractor shall not be construed as a waiver by Jacksonville Transportation Authority of Contractor's obligation to procure, maintain and pay for required insurance.

The insurance requirements set forth herein shall in no way limit Contractors liability arising out of the work performed under the Agreement or related activities. The inclusions, coverage and limits set forth herein are minimum inclusion, coverage and limits. The required minimum policy limits set forth shall not be construed as a limitation of Contractor's right under any policy with higher limits, and no policy maintained by the Contractor shall be construed as limiting the type, quality or quantity of insurance coverage that Contractor should maintain. Contractor shall be responsible for determining appropriate inclusions, coverage and limits, which may be in excess of the minimum requirements set forth herein.
If the insurance of any Contractor or any Sub-Contractor contains deductible(s), penalty(ies) or self-insured retention(s), the Contractor or Sub-Contractor whose insurance contains such provision(s) shall be solely responsible for payment of such deductible(s), penalty(ies) or self-insured retention(s).

The failure of Contractor to fully and strictly comply at all times with the insurance requirements set forth herein shall be deemed a material breach of the Agreement.

XI. Public Entity Crimes

The Authority reserves the right to terminate this Contract effective immediately upon written notice in the event that the Contractor or any of its affiliate(s) are placed on the State of Florida convicted vendor list pursuant to Section 287.133, Florida

Statutes. For purposes hereof, "affiliate" shall have the meaning set forth in Section 287.133(1)(a), Florida Statutes. The Contractor shall advise the Authority promptly after conviction of any "public entity crime" as defined in Section 287.133(1)(g), Florida Statutes, applicable to the Contractor or any of its affiliate(s).

XII. Equal Employment Opportunity and Nondiscrimination

1. The Contractor will comply with all federal, state, and local laws and ordinances applicable to the work or payment for work thereof, and will not discriminate on the grounds of race, creed, color, sex, sexual orientation, gender identity, pregnancy, genetic information, national origin, age, disability, religion, family status or other protected class in the performance of work under this Contract. The Contractor assures that it and their subcontractors will comply with pertinent statutes, executive orders, and such rules as are promulgated to assure that no person shall, on the grounds of race, creed, color, sex, sexual orientation, gender identity, pregnancy, genetic information, national origin, age, disability, religion, family status or other protected class be excluded from participating in any activity conducted under this Contract. This provision binds the Contractor from the Solicitation period through the completion of the Contract.

2. The Contractor shall permit access to its books, records, accounts, other sources of information, and its facilities, as may be determined by the Authority to be pertinent to ascertain compliance with this Section.

XIII. Drug-Free Workplace

The Contractor and its subcontractors shall maintain a drug-free workplace and otherwise comply with the provisions of the Drug-Free Workplace Act, 41 U.S.C. §§ 701-707. Without in any way limiting the foregoing, the Contractor and its subcontractors shall provide a drug-free workplace by:

1. Publishing a statement: (1) notifying employees that unlawfully manufacturing, distributing, dispensing, possessing, or using a controlled substance in the Contractor's (subcontractors') workplace is prohibited; and (2) specifying the actions that will be taken against employees for violation of such prohibition;

2. Establishing a drug-free awareness program to inform employees about:

   A. The dangers of drug abuse in the workplace;
   B. The Contractor's (subcontractors') policy of maintaining a drug-free workplace;
   C. Any drug counseling, rehabilitation, and employee assistance programs that are available; and
   D. The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

3. Making it a requirement that each employee to be engaged in the performance of this Contract be given a copy of the statement required by Paragraph (1);

4. Notifying the employee in the statement required by Paragraph (1) that, as a condition of employment under this Contract, the employee will abide by the terms of the

statement and notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such a conviction;

5. Notifying the Authority within ten (10) days of receiving notice under Paragraph (4) from an employee, or within ten (10) days of otherwise receiving actual notice of an employee's conviction;

6. Taking one of the following actions, within thirty (30) days of receiving notice under Paragraph (5), with respect to any employee so convicted:

   A. Taking appropriate personnel action against such an employee, up to and including termination; or
   B. Requiring such an employee to satisfactorily participate in and complete a drug-abuse assistance or rehabilitation program that is approved by a federal, state, or local health or law enforcement agency, or other appropriate agency as may be the case; and

7. Making a good faith effort to continue to maintain a drug-free workplace through implementation of Paragraphs (1), (2), (3), (4), (5) and (6).

XIV. Subcontracts

1. The Contractor shall be fully responsible for the performance of all services under this Contract, including when the services are performed by a subcontractor or Contractor. At all times, the Contractor shall be responsible for the effort, activity, and quality of services of its subcontractors and Contractors, and at no time shall the Authority have any responsibility for or contractual relationship with any such subcontractors or Contractors, whether by reason of the above-stated references, consent, approval, or otherwise.

2. The Contractor shall utilize those subcontractors who were identified in its proposal, except that the Contractor shall not subcontract with a proposed person or entity to whom the Authority has made reasonable and timely objection.

3. When the subcontract is to provide services, the subcontract shall include the specific key staff members, man-hours, rates, tasks assigned, and all other costs and compensation associated with carrying out the services.

4. The Contractor shall maintain records of payments to all subcontractors for five (5) years following the completion or termination of this Contract, and records of such shall be made available to the Authority immediately upon request. The Contractor shall report to the Authority the portion of each payment made by the Authority (directly or indirectly) which is owed by the Contractor to a subcontractor, and whether such subcontractor is or is not a DBE firm.

5. Prompt Payment (49-CFR Part 26.29). The Contractor is required to pay all subcontractors, to include DBE subcontractors, for satisfactory performance of their contracts within seven (7) business days from receipt of each payment from the Authority or Purchasers. Failure to comply may result in future withholdings of the

Contractor's reimbursements and/or other sanctions until the Contractor ensures all subcontractors are being promptly paid for all work performed.

6. The Contractor shall insert the appropriate provisions from the Solicitation and this Contract in all subcontracts under this Contract. Including all clauses found in Section VI of this solicitation, the Required Clauses For FTA-Assisted Contracts and the clauses set forth in paragraphs (18) through (22) of Section XIX of this contract. The Contractor shall also require all subcontractors of any tier to insert these clauses into all lower tier subcontracts, without modification. The Contractor shall be responsible for compliance by any subcontractor or any lower tier subcontractor with the clauses and shall ensure that this contract and all subcontracts of any tier are performed in accordance with the provisions of 49 CFR Part 26, as may be amended from time to time.

XV. Non-exclusive Contract

This Contract is not exclusive. The Authority expressly reserves the right to contract for performance of services such as those described herein, and in the Solicitation, with other Contractors.

XVI. No Waiver

Failure by either Party to insist upon strict performance of any of the provisions herein; failure or delay by either Party in exercising any rights or remedies provided herein or by law; the Authority's payment in whole or in part for services hereunder; or any purported oral modification or rescission of this Contract by an employee or agent of either Party shall not: (1) release either Party of any of its obligations hereunder; (2) be deemed a waiver of the rights of either Party to insist upon strict performance hereof; (3) be deemed a waiver of any of either Party's rights or remedies under this Contract or by law; or (4) operate as a waiver of any of the provisions hereof or constitute acquiescence therein. No waiver of any default or breach hereunder shall extend to or affect any subsequent or existing default or breach.

XVII. Public Records and Related Inquiries

1. The Contractor acknowledges that the Authority is subject to the Florida Public Records Law, the Government in the Sunshine Act, and possibly the Freedom of Information Act (FOIA), and that in compliance therewith, at the sole discretion of the Authority, the Authority may disseminate or make available to any person, without the consent of the Contractor, information regarding this Contract, including but not limited to information in the: responses; requirements; specifications; drawings; sketches; schematics; models; samples; tools; computer or other apparatus programs; or technical information or data, whether electronic, written, or oral, furnished by the Contractor to the Authority under this Contract, and that copies of work products and related materials prepared or received by the Contractor under this Contract are public records.

2. The Contractor shall allow public access to all documents, papers, letters, or other material subject to the provisions of Chapter 119, Florida Statutes, made or received

by the Contractor in conjunction with this Contract. Specifically, if the Contractor is acting on behalf of the Authority, the Contractor shall:

A. Keep and maintain public records that ordinarily and necessarily would be required by the Authority in order to perform the services being performed by the Contractor;
B. Provide the public with access to public records on the same terms and conditions that the Authority would provide the records and at a cost that does not exceed the cost provided in chapter 119, Florida Statutes, or as otherwise provided by law;
C. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law; and
D. Meet all requirements for retaining public records; transfer, at no cost to the Authority, all public records in possession of the Contractor upon termination of this Contract; and destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. All records stored electronically must be provided to the Authority in a format that is compatible with the information technology systems of the Authority.

3. The Contractor shall immediately provide the Authority with a copy of any Request to Inspect or Copy Public Records in possession of the Contractor and the Contractor shall also promptly provide the Authority with a copy of the proposed response to each such request. No release of any such records by the Contractor shall be made without approval of the Authority. The Contractor's failure to grant approved public access will be grounds for immediate termination of this Contract by the Authority.

4. Media and Other Inquiries. All media and other inquiries concerning the services shall be directed to the Authority's SVP/Chief Administrative Officer. The Contractor shall not make any statements, press releases, or publicity releases concerning this Contract or its subject matter or otherwise disclose or permit to be disclosed any of the data or other information obtained or furnished in compliance with this Contract, or any particulars thereof, without the Authority's written consent. However, the Contractor may communicate directly with public agencies when required to do so as part of the services to be performed hereunder.

XVIII. Contract Administration

1. Notices. Except as otherwise provided herein, any notices or demands that are required by law or under the terms of this Contract shall be given or made by the Contractor or the Authority in writing and shall be given by hand delivery, telegram, or similar communication, or by certified or registered mail (return receipt requested), and addressed to the respective Parties set forth below. Such notices shall be deemed to have been given in the case of telegrams or similar communications when sent, and in the case of certified or registered mail, on the Third (3rd) day after such communication has been deposited in the United States mail with postage prepaid.

To Authority: Jacksonville Transportation Authority
Procurement Department
121 West Forsyth Street, Suite 200
Jacksonville, Florida 32202

To Contractor: Gillig LLC
451 Discovery Drive
Livermore, CA 94551

The above addresses may be changed at any time by giving thirty (30) days prior notice as provided above.

2. Entire Agreement. This Contract shall constitute the entire agreement between the Authority and the Contractor relating to the work.

3. Contractor is not Authority's Agent. The Contractor is not authorized to act as the Authority's agent and shall have no authority, expressed or implied, to act for or bind the Authority, unless otherwise expressly set forth for a particular purpose in a separate writing by the Authority.

4. Compliance with Contractor Code of Business Conduct. The Contractor shall, at all times throughout the duration of this Contract, comply with the Authority's Contractor Code of Business Conduct which is made a part hereof by reference. Failure of the Contractor to abide by the Contractor Code of Business Conduct may lead to disciplinary measures commensurate with the violation, including but not limited to termination of this Contract.

5. Compliance with Nondiscrimination and Other Laws. The Contractor shall comply with the regulations relative to nondiscrimination in federally assisted programs of the DOT Title 49, CFR, Part 21, as they may be amended from time to time, which are hereby incorporated herein by reference and made a part of this Contract. The Contractor shall also comply with the following civil rights regulations, as may be amended from time to time, which are incorporated herein by reference: 29 U.S.C. § 623, 42 U.S.C. § 2000, 42 U.S.C. § 6102, 42 U.S.C. § 12112, 42 U.S.C. § 12132, 49 U.S.C. § 5332, 29 CFR Part 1630, and 41 CFR Part 60. The Contractor, at its sole cost and expense, shall comply with applicable laws, regulations, ordinances, and rules of governmental agencies (including as applicable, the FHWA, FTA, OSHA, applicable State of Florida agencies, including the FDOT, the St. Johns River Water Management District (SJRWMD), the Authority, and the City of Jacksonville (CoJ)). Contractor shall secure all required licenses and permits necessary to the performance of the work at its sole cost and expense.

6. Compliance with Federal Regulations. The Contractor shall comply with all federal lobbying regulations as referenced in the Solicitation, including but not limited to: 31 U.S.C. 1352, 49 CFR Part 19, and 49 CFR Part 20. The Contractor shall comply with all federal clean air regulations including but not limited to: 42 U.S.C. 7401, 40 CFR 15.61, and 49 CFR Part 18. The Contractor shall also comply with all energy conservation requirements including but not limited to: 42 U.S.C. 6321 and 49 CFR Part 18. In addition, the Contractor shall comply with all cargo preference requirements as referenced in the Solicitation, including but not limited to: 46 U.S.C.

1241 and 46 CFR 381. The Contractor shall also comply with all clean water regulations issued pursuant to 33 U.S.C. 1251. Lastly, the Contractor shall abide by all federal change requirements as explained in 49 CFR Part 18 which is incorporated herein by reference.

7. Governing Laws. This Contract and the rights of all Parties hereunder shall be construed and enforced in accordance with the laws of the State of Florida.

8. Severability. If any provision of this Contract is declared by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions shall continue in full force and effect.

9. Advertising. Contractor will not use the name of the Authority or quote the opinion of any employees of the Authority or refer to the Authority directly or indirectly in any promotional literature or correspondence, news release, advertisement, or release to any professional or trade publications without receiving specific written approval for such use or release from the Authority. However, this Paragraph will in no way limit the Contractor's ability to satisfy any governmental required disclosure of its relationship with the Authority.

10. Assignments. This Contract is binding upon the Parties hereto and their respective successors and assigns. The Contractor shall not assign, sell, or transfer its interest in this Contract without the Authority's express written consent. Any such assignment by the Contractor must contain a provision allowing the Authority to assert against any assignee, any and all defenses, setoffs, or counterclaims which the Authority would be entitled to assert against the Contractor.

11. Modifications. This Contract may be modified or amended only by a writing signed by each of the Parties hereto. Neither electronic mail nor instant messaging shall be considered a “writing” for purposes of amending, supplementing, or modifying this Contract. No additional services shall be performed until such additional services are provided for in an Amendment executed by both Parties.

12. Force Majeure. Neither the Authority nor the Contractor shall be liable for any delay or failure in performance solely caused by acts beyond such Party's control, including, without limitation, acts of God, war, vandalism, strikes, labor disputes, sabotage, hurricanes, fires, floods, acts of governmental agencies, or unforeseen interruptions of utility services.

13. Consent to Jurisdiction. The Contractor and the Authority agree that any suit, action, or other legal proceeding arising out of or relating to this Contract shall be brought in the Circuit Court of Duval County, and each Party hereby consents to the jurisdiction of each such court over any such suit, action, or proceeding, and waives any objection which it or they may have to the laying of venue of any such suit, action, or proceeding, and any of such courts. This provision is a material inducement for the Authority and the Contractor entering into the transactions contemplated hereby.

14. Prevailing Party Attorneys’ Fees. In the event one Party shall prevail in any action (including appellate proceedings) at law or in equity arising hereunder, the losing Party will pay all costs, expenses, reasonable attorneys' fees, and all other actual and

reasonable expenses incurred in the defense and/or prosecution of any legal proceeding, including, but not limited to, those for paralegal, investigative, and legal support services, and actual fees charged by expert witnesses for testimony and analysis incurred by the prevailing Party referable thereto.

15. Member Protection. No recourse under or upon any obligation, covenant, or agreement contained in this Contract or any other agreements or documents pertaining to the work, as such may from time to time be altered or amended in accordance with the provisions hereof, or under any judgment obtained against the Authority or by the enforcement of any assessment or by any legal or equitable proceeding by virtue of any statute or otherwise, whether under or independent of this Contract, shall be had against any Board Member, officer, employee or agent, as such, past, present or future, of the Authority either directly or indirectly, for any claim arising out of this Contract, or for any sum that may be due and unpaid by the Authority. Any and all personal liability of every nature, whether at common law, in equity, by statute, by constitution or otherwise, of any Authority member, officer, employee, or agent as such, to respond by reason of any act or omission on his or her part or otherwise for any claim arising out of this Contract, or for the payment for or to the Authority, or any receiver therefore or otherwise, of any sum that may remain due and unpaid by the Authority, is hereby expressly waived and released as a condition of and as consideration for the execution of this Contract.

16. No Third-Party Beneficiaries. The Parties hereby set forth their intention that there are not and never shall be any third-party beneficiaries of this Contract or of any work or Purchase Order authorized hereunder. The Parties expressly intend that the Authority has no obligation to or relationship with any subcontractor that may be utilized by Contractor.

17. The Contractor shall insert the appropriate provisions from the Solicitation and this Contract in all subcontracts under this Contract. Including all clauses found in Section VI of this solicitation, the Required Clauses For FTA-Assisted Contracts and the clauses set forth in paragraphs (18) through (22) of Section XIX of this contract. The Contractor (referenced sometimes hereinafter as the “Contractor” or “prime contractor”) shall also require all subcontractors of any tier to insert these clauses into all lower tier subcontracts, without modification. The Contractor shall be responsible for compliance by any subcontractor or any lower tier subcontractor with the clauses and shall ensure that this contract and all subcontracts of any tier are performed in accordance with the provisions of 49 CFR Part 26, as may be amended from time to time.

18. Contract Assurance (49-CFR Part 26.13). 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 the recipient deems appropriate.

19. Prompt Payment (49-CFR Part 26.29). Prime Contractors are required to pay all

subcontractors, to include DBE subcontractors, for satisfactory performance of their contracts within seven (7) business days from receipt of each payment from the JTA. Failure to comply may result in future withholdings of prime Contractor's reimbursements and/or other sanctions until the prime Contractor ensure all subcontractors are being promptly paid for all work performed.

20. Return of Retainage (49-CFR Part 26.29). Prime Contractors are required to ensure prompt and full payment of retainage to all subcontractors within thirty (30 days) after the subcontractor's work is satisfactorily completed. Prime Contractors are prohibited from holding retainage from subcontractors until the project is completed. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by the JTA. When JTA has made an incremental acceptance of a portion of a prime contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.

21. Monitoring the Performance of other Program Participants (49-CFR Part 26.37). The JTA will monitor each DOT funded contract with DBE participation to ensure that all work committed to DBEs at contract award or subsequently (as a result of contract modification) is actually performed by the DBEs to which the work was committed. Site visit will be conducted periodically by staff. Contractor's Request for Payment forms will be monitored to ensure that DBEs are being paid in accordance to their signed agreements.

    If applicable, prime Contractors will be required to self-report all payments received from the JTA into the B2GNow (Contract Compliance Tracking System). This system tracks payments made to the prime Contractor and all payments made by the prime to any subcontractors, to include DBEs, and the timeliness of those payments in accordance to JTA's Prompt Payment Clause.

22. Termination for Convenience (49-CFR Part 26.53). No prime Contractor will terminate for convenience a DBE subcontractor that was listed and agreed to perform a project task (or an approved substitute DBE firm) and then perform the work of the terminated subcontract with its own forces or those of an affiliate, without prior written consent from JTA's Diversity & Equity Program Office.

    The prime Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the prime Contractor obtains written consent form JTA's Diversity & Equity Program Office; and unless the consent is provided the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE.

    Appropriate administrative remedies will be invoked to any Prime Contractor that terminates and/or removes a DBE firm/s for convenience. Those remedies may include requirement to pay terminated DBE firm/s; withholding of future payments and/or retainage; and/or disbarment from future consideration of project awards with the JTA.

24. Counterparts and Electronic Signatures. This Contract may be executed in one or more counterparts, each of which will be deemed an original, but all such counterparts will together constitute one and the same instrument, binding on all the parties hereto even

though all the parties are not signatories to the original or the same counterpart. The counterparts of this this Contract and all Ancillary Documents may be executed by providing an electronic signature under the terms of the Electronic Signatures in Global and National Commerce Act, 15 U.S.C. §§ 7001 et. seq., and Chapter 668, Florida Statutes and delivered by email or other electronic delivery method which will have the same force and effect as a written signature.

25. Exhibits. The following Exhibits are hereby incorporated into this Contract as part hereof as though fully set forth herein.

Exhibit A, Scope of Services and Technical Specifications
Exhibit B, Proposal Pricing
Exhibit C, Warranty
Exhibit D, Required Forms
Exhibit E, Required Clauses for FTA-Assisted Contracts

(Signature Page Follows)

IN WITNESS WHEREOF, each of the Parties hereto have caused its duly authorized officers to execute and deliver this Contract on or as of the date first above written.

GILLIG LLC:

By: _____

Printed Name: JOSEPH POLICARPIO

Title: VICE PRESIDENT

JACKSONVILLE TRANSPORTATION AUTHORITY:

By: _____

Printed Name: Nathaniel P. Ford Sr.

Title: Chief Executive Officer

APPROVED AS TO FORM:

By: _____

Printed Name: Cleveland Ferguson III

Title: SVP/Chief Administrative Officer

Execute in Triplicate Distribution:

1. Contractor
2. JTA Procurement Department – Electronic
3. JTA Project Manager – User Department

Exhibit 'A' – Scope of Services
(On following pages)

Exhibit 'A' – Scope of Services

(On following pages)

Exhibit A

Scope of Services

Contractor shall provide 30-foot, 35-foot and 40-foot low-floor heavy duty transit buses powered by diesel, diesel electric hybrid, or CNG power packages meeting the specifications in JTA RFP No. P-18-005 State of Florida Heavy Duty Buses as amended and as further described in this Exhibit (herein referred to individually as a "Bus" and collectively as the "Buses") on an as needed basis. The Contractor shall comply with the following required contract provisions and shall insert the substance of these provisions to all subcontractors when applicable and pursuant to this contract.

Orders

Purchase Orders will be issued directly to GILLIG. GILLIG will be responsible for providing the FTAFC a copy of the agencies purchase order upon receipt. GILLIG will also provide the FTAFC a quarterly statement of purchases made off the contract. .

Delivery Time

Delivery of orders of up to 25 buses will be delivered in 15 months ARO. Delivery of orders over 25 buses will be negotiated at time of order placement. Delivery shall be made on Monday through Friday; Federal and State holidays excluded, between the hours of 8:00 AM and 4:00 PM.

FOB Point

The FOB point shall be the delivery address indicated on the individual purchase order.

Acceptance

The Authority or Purchaser will provide the Contractor written notice of acceptance or rejection of each bus upon completion of acceptance testing and within fifteen (15) days after delivery. If the equipment is rejected, the notice shall state the discrepancy noted. The Purchaser reserves the right to conditionally or provisionally accept one or more buses subject to correction of minor discrepancies.

Assumption of Risk of Loss

Contractor shall bear the risk of any loss or damage to the buses ordered until they are delivered in conformity with this Contract or at the specified F.O.B. point. Upon such delivery, Contractor's responsibility for losses or damage shall cease, except for loss or damage occurring prior to or upon delivery, or loss or damage resulting from contractor's negligence or intentional acts.

Repairs by Contractor

If Purchaser requires the Contractor to perform repairs after rejection or conditional acceptance of the equipment, the Contractor's representative must begin work within five (5) working days after receiving notification from the Purchaser of failure of acceptance tests. Purchaser shall make the equipment available to complete repairs timely with the Contractor's repair schedule.

License and Taxes

The JTA and the Purchasers are exempt from Federal and State taxation and will provide tax exempt certificate as required. All applicable Federal taxes, State of Florida sales taxes, and any other taxes are the responsibility of the Contractor. The Contractor shall procure any and all licenses, permits, or certificates constituted authorities for the performance of the service.

Title

Adequate documents for securing the coach title in the county of the individual Purchaser shall be provided to the Purchaser within five (5) days of delivery. Following acceptance of each coach, the Contractor warrants that the title shall pass to the Purchaser free and clear of all liens, mortgages and encumbrances, financing statements, claims and demands of any character.

The Contractor is responsible to provide the Purchaser with the necessary information to title the vehicles and shall provide a point to contact for the delivery of the titles.

Technical Specifications

See Attachment 1 to this Exhibit A: Technical Specifications

In submitting a proposal, please note where indicated, whether your proposal exceeds, meets, or does not meet the technical specification. Provide comments explaining your response. Each response should be in RED.

TECHNICAL SPECIFICATIONS

GENERAL

TS 1. Scope

Technical specifications define requirements for heavy-duty transit buses and commuter coaches, which, by the selection of specifically identified alternative configurations, may be used for both suburban express service and general service on urban arterial streets. Buses shall have a minimum expected life of twelve (12) years or 500,000 miles, whichever comes first, and are intended for the widest possible spectrum of passengers, including children, adults, the elderly and people with disabilities.

TS 2. Definitions

Alternative: An alternative specification condition to the default bus configuration. The Agency may define alternatives to the default configuration to satisfy local operating requirements. Alternatives for the default configuration will be clearly identified.

Ambient Temperature: The temperature of the surrounding air. For testing purposes, ambient temperature must be between 16°C (50°F) and 38°C (100°F).

Analog Signals: A continuously variable signal that is solely dependent upon magnitude to express information content.

NOTE: Analog signals are used to represent the state of variable devices such as rheostats, potentiometers, temperature probes, etc.

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.

Battery Compartment: Low-voltage energy storage, i.e. 12/24 VDC batteries.

Battery Management System (BMS): Monitors energy, as well as temperature, cell or module voltages, and total pack voltage. The BMS adjusts the control strategy algorithms to maintain the batteries at uniform state of charge and optimal temperatures.

Braking Resistor: Device that converts electrical energy into heat, typically used as a retarder to supplement or replace the regenerative braking.

Burst Pressure: The highest pressure reached in a container during a burst test.

Capacity (fuel container): The water volume of a container in gallons (liters).

Cells: Individual components (i.e., battery or capacitor cells).

Code: A legal requirement.

Combination Gas Relief Device: A relief device that is activated by a combination of high pressures or high temperatures, acting either independently or together.

Composite Container for CNG: A container fabricated of two or more materials that interact to facilitate the container design criteria.

Compressed Natural Gas (CNG): Mixtures of hydrocarbon gases and vapors consisting principally of methane in gaseous form that has been compressed for use as a vehicular fuel.

Container: A pressure vessel, cylinder or cylinders permanently manifolded together, used to store CNG.

Container Appurtenances: Devices connected to container openings for safety, control or operating purposes.

Container Valve: A valve connected directly to a container outlet.

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.

dBA: Decibels with reference to 0.0002 microbar as measured on the "A" scale.

DC to DC Converter: A module that converts a source of direct current from one voltage level to another.

Default Configuration Bus: The bus described if no alternatives are selected. Signing, colors, the destination sign reading list and other information must be provided by the Agency.

Defueling: The process of removing fuel from a tank.

Defueling Port. Device that allows for vehicle defueling, or the point at which this occurs.

Destroyed: Physically made permanently unusable.

Discrete Signal: A signal that can take only pre-defined values, usually of a binary 0 or 1 nature, where 0 is battery ground potential and 1 is a defined battery positive potential.

DPF: Diesel particulate filter.

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.

Energy Density: The relationship between the weight of an energy storage device and its power output in units of watt-hours per kilogram (Wh/kg).

Energy Storage System (ESS): A component or system of components that stores energy and for which its supply of energy is rechargeable by the on-vehicle system (engine/regenerative braking/ generator) or an off-vehicle energy source.

Fill Pressure for CNG: The pressure attained at the actual time of filling. Fill pressure varies according to the gas temperatures in the container, which are dependent on the charging parameters and the ambient conditions. The maximum dispensed pressure shall not exceed 125 percent of service pressure.

Flow Capacity: For natural gas flow, this is the capacity in volume per unit time (normal cubic meters/minute or standard cubic feet per minute) discharged at the required flow rating pressure.

Fuel Line: The pipe, tubing or hose on a vehicle, including all related fittings, through which natural gas passes.

Fusible Material: A metal, alloy or other material capable of being melted by heat.

Fire Resistant: Materials that have a flame spread index less than 150 as measured in a radiant panel flame test per ASTM-E 162-90.

Fireproof: Materials that will not burn or melt at temperatures less than 2000°F.

Free Floor Space: Floor area available to standees, excluding the area under seats, area occupied by feet of seated passengers, the vestibule area forward of the standee line, and any floor space indicated by manufacturer as non-standee areas, such as the floor space "swept" by passenger doors during operation. Floor area of 1.5 sq. ft. shall be allocated for the feet of each seated passenger protruding into the standee area.

Fuel Management System: Natural gas fuel system components that control or contribute to engine air fuel mixing and metering, and the ignition and combustion of a given air-fuel mixture. The fuel management system would include, but is not limited to, reducer/regulator valves, fuel metering equipment (e.g. carburetor, injectors), sensors (e.g., main throttle, waste gate).

GAWR (Gross Axle Weight Rated): The maximum total weight as determined by the axle manufacturer, at which the axle can be safely and reliably operated for its intended purpose.

Gross Load: 150lbs for every designed passenger seating position, for the driver, and for each 1.5 sq. ft. of free floor space.

GVW (Gross Vehicle Weight): Curb weight plus gross load.

GVWR (Gross Vehicle Weight Rated): The maximum total weight as determined by the vehicle manufacturer, at which the vehicle can be safely and reliably operated for its intended purpose.

High Pressure: Those portions of the CNG fuel system that see full container or cylinder pressure.

High Voltage (HV): Greater than 50 V (AC and DC).

Hose: Flexible line.

Hybrid: A vehicle that uses two or more distinct power sources to propel the vehicle.

Hybrid System Controller (HSC): Regulates energy flow throughout hybrid system components in order to provide motive performance and accessory loads, as applicable, while maintaining critical system parameters (voltages, currents, temperatures, etc.) within specified operating ranges.

Hybrid Drive System (HDS): The mechanical and/or electromechanical components, including the engine, traction motors and energy storage system, which comprise the traction drive portion of the hybrid propulsion system.

Intermediate Pressure: The portion of a CNG system after the first pressure regulator, but before the engine pressure regulator. Intermediate pressure on a CNG vehicle is generally from 3.5 to 0.5 MPa (510 to 70 psi).

Inverter: A module that converts DC to and from AC.

Labeled: Equipment or materials to which has been attached a label, symbol or other identifying mark of an organization, which is acceptable to the authority having jurisdiction and concerned with product evaluation, which maintains periodic inspection of production labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

Leakage: Release of contents through a Defect or a crack. See *Rupture*.

Line: All tubes, flexible and hard, that carry fluids.

Liner: Inner gas-tight container or gas container to which the overwrap is applied.

Local Regulations: Regulations below the state level.

Low-Floor Bus: A bus that, between at least the front (entrance) and rear (exit) doors, has a floor sufficiently low and level so as to remove the need for steps in the aisle between the doors and in the vicinity of these doors.

Low Voltage (LV):50 V or less (AC and DC).

Lower Explosive Limit: The lowest concentration of gas where, given an ignition source, combustion is possible.

Maximum Service Temperature: The maximum temperature to which a container/cylinder will be subjected in normal service.

Metallic Hose: A hose whose strength depends primarily on the strength of its metallic parts; it can have metallic liners or covers, or both.

Metering Valve: A valve intended to control the rate of flow of natural gas.

Module: An assembly of individual components

Motor (Electric): A device that converts electrical energy into mechanical energy.

Motor (Traction): An electric motor used to power the driving wheels of the bus.

Operating Pressure: The varying pressure developed in a container during service.

Physical Layer: The first layer of the seven-layer International Standards Organization (ISO) Open Systems Interconnect (OSI) reference model. This provides the mechanical, electrical, functional and procedural characteristics required to gain access to the transmission medium (e.g., cable) and is responsible for transporting binary information between computerized systems.

Pipe: Nonflexible line.

Pressure Relief Device (PRD):A pressure and/or temperature activated device used to vent the container/cylinder contents and thereby prevent rupture of an NGV fuel container/cylinder, when subjected to a standard fire test as required by fuel container/cylinder standards.

> **NOTE:** Since this is a pressure-activated device, it may not protect against rupture of the container when the application of heat weakens the container to the

point where its rupture pressure is less than the rated burst pressure of the relief device, particularly if the container is partially full.

Power: Work or energy divided by time

Power Density: Power divided by mass, volume or area.

Propulsion System: System that provides propulsion for the vehicle proportional to operator commands. Includes, as applicable, engine, transmission, traction motors, the hybrid drive system, (HDS), energy storage system (ESS), and system controllers including all wiring and converter/inverter.

Real-Time Clock (RTC): Computer clock that keeps track of the current time.

Regenerative Braking: Deceleration of the bus by switching motors to act as generators, which return vehicle kinetic energy to the energy storage system.

Rejectable Damage: In terms of NGV fuel containers/cylinders, this is damage as outlined in CGA C-6.4, "Methods for External Visual Inspection of Natural Gas Vehicle Fuel Containers and Their Installations," and in agreement with the manufacturer's recommendations.

Retarder: Device used to augment or replace some of the functions of primary friction based braking systems of the bus.

Rupture: Sudden and unstable damage propagation in the structural components of the container resulting in a loss of contents. See *Leakage*.

Seated Load: 150lbs for every designed passenger seating position and for the driver.

SLW (Seated Load Weight): Curb weight plus seated load.

Serial Data Signals. A current loop based representation of ASCII or alphanumeric data used for transferring information between devices by transmitting a sequence of individual bits in a prearranged order of significance.

NOTE: An example is the communication that takes place between two or more electronic components with the ability to process and store information.

Service Pressure: The settled pressure at a uniform gas temperature of 21°C (70°F) and full gas content. It is the pressure for which the equipment has been constructed, under normal conditions. Also referred to as the nominal service pressure or working pressure.

Settled Pressure: The gas pressure when a given settled temperature, usually 21°C (70°F), is reached.

Settled Temperature: The uniform gas temperature after any change in temperature caused by filling has dissipated.

Solid State Alternator: A module that converts high-voltage DC to low-voltage DC (typically 12/24 V systems).

Sources of Ignition: Devices or equipment that because of their modes of use or operation, are capable of providing sufficient thermal energy to ignite flammable compressed natural gas-air mixtures when introduced into such a mixture, or when such a mixture comes into contact with them.

Special Tools: Tools not normally stocked by the Agency.

Specification: A particular or detailed statement, account or listing of the various elements, materials, dimensions, etc. involved in the manufacturing and construction of a product.

Standard: A firm guideline from a consensus group. Standards referenced in "Section 6: Technical Specifications" are the latest revisions unless otherwise stated.

Standee Line: A line marked across the bus aisle to designate the forward area that passengers may not occupy when the bus is moving.

State of Charge (SOC): Quantity of electric energy remaining in the battery relative to the maximum rated amp-hour (Ah) capacity of the battery expressed in a percentage. This is a dynamic measurement used for the energy storage system. A full SOC indicates that the energy storage system cannot accept further charging from the engine-driven generator or the regenerative braking system.

Stress Loops: The "pigtails" commonly used to absorb flexing in piping.

Structure: The basic body, including floor deck material and installation, load-bearing external panels, structural components, axle mounting provisions and suspension beams and attachment points.

Thermally Activated Gas Relief Device: A relief device that is activated by high temperatures and generally contains a fusible material.

> **NOTE:** Since this is a thermally activated device, it does not protect against over-pressure from improper charging practices.

Wheelchair: A mobility aid belonging to any class of three- or four-wheeled devices, usable indoors, designed for and used by individuals with mobility impairments, whether operated manually or powered. A "common wheelchair" is such a device that does not exceed 30 in. in width and 48 in. in length measured 2 in. above the ground, and does not weigh more than 600 lbs. when occupied.

TS 3. Referenced Publications

The documents or portions thereof referenced within this specification shall be considered part of the requirements of the specification. The edition indicated for each referenced document is the current edition, as of the date of the APTA issuance of this specification.

TS 4. Legal Requirements

The Contractor shall comply with all applicable federal, state and local regulations. These shall include but not be limited to ADA, as well as state and local accessibility, safety and security requirements. Local regulations are defined as those below the state level.

Buses shall meet all applicable FMVSS regulations and shall accommodate all applicable FMCSR regulations in effect at the location of the Agency and the date of manufacture.

In the event of any conflict between the requirements of these specifications and any applicable legal requirement, the legal requirement shall prevail. Technical requirements that exceed the legal requirements are not considered to conflict.

TS 5. Overall Requirements

The Contractor shall ensure that the application and installation of major bus subcomponents and systems are compliant with all such subcomponent vendors' requirements and recommendations. Contractor and Agency shall identify subcomponent vendors that shall submit installation/application approval documents with the completion of a pilot or lead bus. Components used in the vehicle shall be of heavy-duty design and proven in transit service.

TS 5.1 Weight

DEFAULT

It shall be a design goal to construct each bus as light in weight as possible without degradation of safety, appearance, comfort, traction or performance.

Buses at a capacity load shall not exceed the tire factor limits, brake test criteria or structural design criteria.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 5.2 Capacity

DEFAULT

The vehicle shall be designed to carry the gross vehicle weight, which shall not exceed the bus GVWR.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 5.3 Service Life

DEFAULT

The minimum useful design life of the bus in transit service shall be at least twelve (12) years or 500,000 miles. It shall be capable of operating at least 40,000 miles per year, including the 12th year.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 5.4 Maintenance and Inspection

DEFAULT

Scheduled maintenance tasks shall be related and shall be in accordance with the manufacturer's recommended preventative maintenance schedule (along with routine daily service performed during the fueling operations).

Test ports, as required, shall be provided for commonly checked functions on the bus, such as air intake, exhaust, hydraulic, pneumatic, charge-air and engine cooling systems.

The coach manufacturer shall give prime consideration to the routine problems of maintaining the vehicle. All coach components and systems, both mechanical and electrical, which will require periodic physical Work or inspection processes shall be installed so that a minimum of time is consumed in gaining access to the critical repair areas. It shall not be necessary to disassemble portions of the coach structure and/or equipment such as seats and flooring under seats in order to gain access to these areas. Each coach shall be designed to facilitate the disassembly, reassembly, servicing or maintenance, using tools and equipment that are normally available as standard commercial items.

Requirements for the use of unique specialized tools will be minimized. The body and structure of the coach shall be designed for ease of maintenance and repair. Individual panels or other equipment that may be damaged in normal service shall be repairable or replaceable. Ease of repair shall be related to the vulnerability of the item to damage in service.

Contractor shall provide a list of all special tools and pricing required for maintaining this equipment. Said list shall be submitted as a supplement to the Pricing Schedule.

> **NOTE:** Tools such as compartment door keys, bellows gauges and other tools that are required for daily maintenance and inspections shall not be included in the special tool list and shall be furnished for each coach.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 5.5 Interchangeability

DEFAULT

Unless otherwise agreed, all units and components procured under this Contract, whether provided by Suppliers or manufactured by the Contractor, shall be duplicates in design, manufacture and installation to ensure interchangeability among buses in each order group in this procurement. Components with non-identical functions shall not be, or appear to be, interchangeable.

Any one component or unit used in the construction of these buses shall be an exact duplicate in design, manufacture and assembly for each bus in each order group in this Contract. Contractor shall identify and secure approval for any changes in components or unit construction provided within a Contract.

In the event that the Contractor is unable to comply with the interchangeability requirement, the Contractor must notify the Agency and obtain the Agency's prior written approval, including any changes in pricing.

Agency shall review proposed product changes on a case-by-case basis and shall have the right to require extended warranties to ensure that product changes perform at least as well as the originally supplied products.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 5.6 Training

DEFAULT

> **NOTE:** The following is illustrative; the Agency should carefully specify its training requirements.

The Contractor shall have at least one qualified instructor who shall be available at the Agency's property for calendar days between the hours of 7:00am-3:30pm and per month for 1 month prior to, and 6 months after, acceptance of the first bus. Instructor(s) shall conduct schools and advise the personnel of the Agency on the proper operation and maintenance of the equipment. The Contractor also shall provide visual and other teaching aids (such as manuals, slide presentations and literature) for use by the Agency's own training staff, which become the property of the Agency.

> **NOTE:** The Agency should insert language that specifies the hours when it wants the training to occur, the total number of hours of instruction it wants to be

provided, what items it expects the curriculum to cover and the format in which it expects the training and teaching aids to be provided (print, DVD, etc.).

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment: Reference Deviation

TS 5.6.1 Technical/Service Representatives

DEFAULT

The Contractor shall, at its own expense, have one or more competent technical service representatives available on request to assist the Agency in the solution of engineering or design problems within the scope of the specifications that may arise during the warranty period. This does not relieve the Contractor of responsibilities under the provisions of "Section 7: Warranty Requirements."

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment: We have technical service representatives available by phone from 8:00AM to 2:00PM EST Monday-Friday

TS 5.7 Operating Environment

DEFAULT

The bus shall achieve normal operation in ambient temperature ranges of 10 ºF to 115 ºF, at relative humidity between 5 percent and 100 percent, and at altitudes up to 3000 ft. above sea level. Degradation of performance due to atmospheric conditions shall be minimized at temperatures below 10 °F, above 115 °F or at altitudes above 3000 ft. Altitude requirements above 3000 ft. will need separate discussions with the engine manufacturer to ensure that performance requirements are not compromised. Speed, gradability and acceleration performance requirements shall be met at, or corrected to, 77 °F, 29.31 in. Hg, dry air per SAEJ1995.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 5.8 Noise

TS 5.8.1 Interior Noise

DEFAULT

The combination of inner and outer panels and any material used between them shall provide sufficient sound insulation so that a sound source with a level of 80 dBA measured at the outside skin of the bus shall have a sound level of 65 dBA or less at any point inside the bus. These conditions shall prevail with all openings, including doors and windows, closed and with the engine and accessories switched off.

The bus-generated noise level experienced by a passenger at any seat location in the bus shall not exceed 80 dBA. The driver area shall not experience a noise level of more than 75 dBA. Measurements of interior noise levels shall be taken in accordance with SAEJ2805. An exception shall be made for the turntable area, which shall be considered a separate environment.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 5.8.2 Exterior Noise

DEFAULT

Airborne noise generated by the bus and measured from either side shall not exceed 80dBA under full power acceleration when operated at 0 to 35 mph at curb weight. The maximum noise level generated by the bus pulling away from a stop at full power shall not exceed 83 dBA. The bus-generated noise at curb idle shall not exceed 65dBA.If the noise contains an audible discrete frequency, a penalty of 5 dBA shall be added to the sound level measured. The Contractor shall comply with the exterior noise requirements defined in local laws and ordinances identified by the Agency andSAEJ366.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 5.9 Fire Safety

DEFAULT

The bus shall be designed and manufactured in accordance with all applicable fire safety and smoke emission regulations. These provisions shall include the use of fire-retardant/low-smoke materials, fire detection systems, bulkheads and facilitation of passenger evacuation.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 5.9.1 Materials

DEFAULT

All materials used in the construction of the passenger compartment of the bus shall be in accordance with the Recommended Fire Safety Practices defined in FMVSS 302.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 5.10 Fire Suppression

DEFAULT

Fogmaker- 35 DEG Fluid. 6 Engine compartment nozzles

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 5.11 Respect for the Environment

DEFAULT

In the design and manufacture of the bus, the Contractor shall make every effort to reduce the amount of potentially hazardous waste. In accordance with Section 6002 of the Resource Conservation and Recovery Act, the Contractor shall use, whenever possible and allowed by the specifications, recycled materials in the manufacture of the bus.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

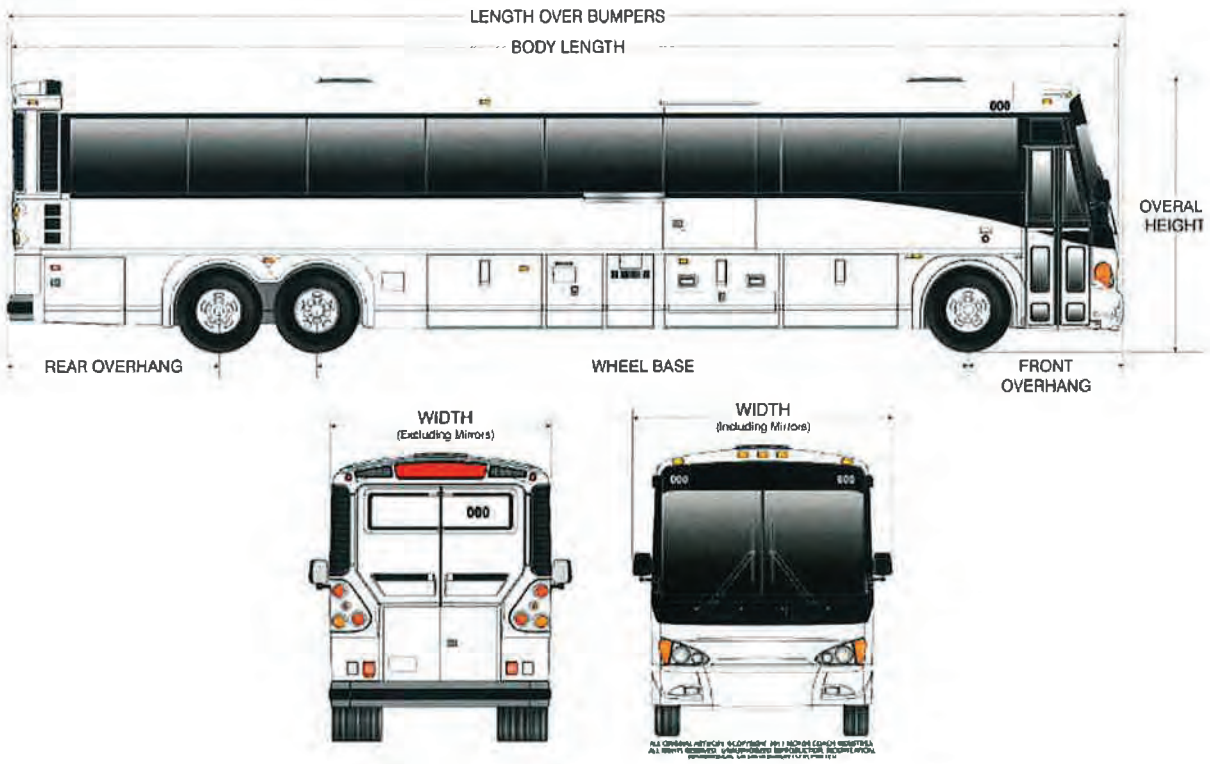
DIMENSIONS

TS 6. Physical Size

With exceptions such as exterior mirrors, marker and signal lights, bumpers, fender skirts, washers, wipers, ad frames, cameras, object detection systems, bicycle racks, feelers and rubrails, the bus shall have the following overall dimensions as shown in **Figure 1**at static conditions and design height.

FIGURE 1

Transit Bus Exterior Dimensions



TS 6.1 Bus Length

For ease of use, the following tolerances will be allowable for each given bus length. Bus length is determined as the measurement from bumper to bumper.

- **30ft bus:** 29 ft., 11 in. to 34ft, 11 in.
- **35ft bus:** 35ft to 39ft, 11 in.
- **40ft bus:** 40ftto 44ft, 11 in.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 6.2 Bus Width

TS 6.2.1 Transit Coach

DEFAULT

102 in. Width Bus

Body width shall be 102 in. (+0, -1 in.).

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 6.3 Bus Height

DEFAULT

Maximum Overall Height

Maximum overall height shall be 140 in., including all rigid, roof-mounted items such as A/C, exhaust, fuel system and cover, etc.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 6.4 Step Height

TS 6.4.1 Transit Coach

DEFAULT

The step height shall not exceed 16.5 in. at either doorway without kneeling and shall not exceed 15.5 in. at the step. A maximum of two steps are allowed to accommodate a raised aisle floor in the rear of the bus.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 6.5 Underbody Clearance

DEFAULT

The bus shall maintain the minimum clearance dimensions as defined and shown in Figure 2of SAE Standard J689, regardless of load up to the gross vehicle weight rating.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 6.6 Ramp Clearances

DEFAULT

REFER TO TABLE 2A.

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

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

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

TABLE 2a

Default Breakover Angle

Angle	30 to 40ft Bus
Approach	8.6 deg. (min.)
Front breakover	8 deg. (min.)
Departure	8.6 deg. (min.)

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 6.7 Ground Clearance

DEFAULT

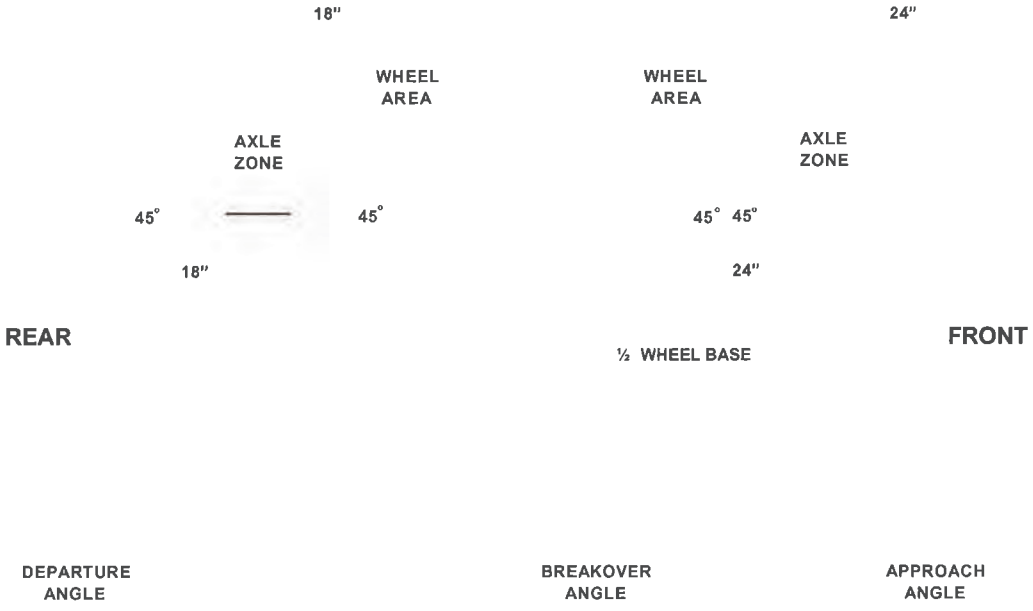
Ground clearance shall be no less than 9 in., (8 in. at jacking pad) except within the axle zone and wheel area.

Axle zone clearance, which is the projected area between tires and wheels on the same axial centerline, shall be no less than 5.4 in.

Wheel area clearance shall be no less than 8 in. for parts fixed to the bus body and 6 in. for parts that move vertically with the axles.

– FIGURE 2

Transit Bus Minimum Road Clearance



Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 6.8 Floor Height

TS 6.8.1 Transit Coach

DEFAULT

Height of the step above the street shall be no more than 16 in. measured at the centerline of the front and rear doorway. All floor measurements shall be with the bus at the design running height and on a level surface and with the standard installed tires. A maximum of two steps are allowed to accommodate a raised aisle floor in the rear of the bus.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 6.9 Interior Headroom

DEFAULT

Headroom above the aisle and at the centerline of the aisle seats shall be no less than 78 in. in the forward half of the bus tapering to no less than 74 in. forward of the rear settee. At the centerline of the window seats, headroom shall be no lower than 65 in., except for parcel racks and reading lights, if specified. Headroom at the back of the rear bench seat may be reduced to a minimum of 56 in., but it shall increase to the ceiling height at the front of the seat cushion. In any area of the bus directly over the head of a seated passenger and positioned where a passenger entering or leaving the seat is prone to strike his or her head, padding shall be provided on the overhead paneling.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

VEHICLE PERFORMANCE

TS 7. Power Requirements

The propulsion system shall be sized to provide sufficient power to enable the bus to meet the defined acceleration, top speed and gradability requirements, and operate all propulsion-driven accessories using actual road test results and computerized vehicle performance data.

TS 7.1 Top Speed

DEFAULT

The bus shall be capable of achieving a top speed of 65 mph on a straight, level road at GVWR with all accessories operating. The bus shall be capable of safely maintaining the vehicle speed according to the recommendations by the tire manufacturer.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 7.2 Gradability

DEFAULT

Gradability requirements shall be met on grades with a dry commercial asphalt or concrete pavement at GVWR with all accessories operating.

The propulsion system shall enable the bus to achieve and maintain a speed of 40 mph on a 2½ percent ascending grade and 15 mph on a 10 percent ascending grade continuous.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 7.3 Acceleration

TS 7.3.1 Non-Hybrid

DEFAULT

The acceleration shall meet the requirements in **Table 3**below and shall be sufficiently gradual and smooth to prevent throwing standing passengers off-balance. Acceleration measurement shall commence when the accelerator is depressed.

TABLE 3

Maximum Start Acceleration Times on a Level Surface[1]

Speed (mph)	Maximum time (seconds)
10	5
20	10
30	18

40	30
50	60
Top speed	

1. Vehicle weight = GVWR

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 7.3.2 Acceleration Hybrid

DEFAULT

The propulsion and braking systems shall meet the performance requirements of the Duty Cycle.

Braking application and performance shall remain consistent regardless of hybrid system state of charge (SOC) or other variances related to regenerative braking.

The system shall be programmable to allow optimization of acceleration and deceleration rate. Performance may be affected when reprogramming. The manufacturer shall supply the new performance data.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 7.4 Operating Range

The operating range of the coach shall be designed to meet the operating profile as stated in the "Design Operating Profile" section.

DEFAULT

TS 7.4.1 Diesel

The operating range of the coach when run on the FTA ABD Cycle shall be at least 350 miles (560 km) or 20 hours with full fuel capacity.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 7.4.2 CNG

DEFAULT

The operating range of the coach when run on the FTA ABD cycle shall be at least 350 miles or 20 hours with an initial gas-settled pressure of 3600 psi at 70°F.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 7.4.3 Hybrid

DEFAULT

The operating range of the coach when run on the design operating profile "Design Operating Profile" shall be at least 350 miles on a full tank of fuel.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 8. Fuel Economy (Design Operating Profile)

DEFAULT

Test results from the FTA ABD Cycle economy tests or other applicable test procedures shall be provided to the Agency. Results shall include vehicle configuration and test environment information. Fuel economy data shall be provided for each design operating profile. The design operating profile is assumed to be defined by the FTA ABD Cycle.

Fuel economy tests shall be run on these four duty cycles:

- Manhattan: 6.8 mph
- Orange County: 12.7 mph
- UDDS: 19 mph
- Idle time

The Agency will provide a percentage of each duty cycle that is representative of its service.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

POWERPLANT

TS 9. Engine

DEFAULT

The engine shall comply with applicable local, state and/or federal emissions and useful life requirements. The engine shall have a design life of not less than 300,000 miles without replacement or major service. The lifetime estimate is based on the design operating profile.

The engine shall be equipped with an electronically controlled management system, compatible with either 12 or 24 V power distribution. The engine control system shall be capable of transmitting and receiving electronic inputs and data from other drivetrain components and broadcasting that data to other vehicle systems. Communication between electronic drivetrain components and other vehicle systems shall be made using the communications networks. The engine's electronic management system shall monitor operating conditions and provide instantaneous adjustments to optimize both engine and bus performance. The system shall be programmable to allow optimization of programmable features.

The engine starting system shall be protected by an interlock that prevents its engagement when the engine is running. Special equipment or procedures may be employed to start the bus when exposed to temperatures less than 30 °F for a minimum of four hours without the engine in operation. All cold weather starting aids, engine heating devices and procedures shall be of the type recommended by the engine manufacturer and approved by the Agency. The integration of all systems on the vehicle relative to engine idle speed shall be the responsibility of the vehicle manufacturer to meet the requirements of the transit property.

The engine control system shall protect the engine against progressive damage. The system shall monitor conditions critical for safe operation and automatically derate power and/or speed and initiate engine shutdown as needed.

Automatic Engine Protection/Shutdown Override Feature

A control shall be available to the operator/driver that when constantly depressed and released will delay the engine shutdown or allow the bus to be moved. Override action shall be recorded. This data shall be retrievable by the Agency.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 9.1 Engine (CNG)

The engine shall meet all regulatory requirements when operating on fuel equal to CARB Specifications for Compressed Natural Gas #2292.5.The four predominant characteristics that must be met are methane, ethane, butane and propane.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 9.2 Propulsion System (Hybrid)

DEFAULT

TS 9.2.1 Propulsion System Description

The bus shall be powered by a hybrid propulsion system. Function and operation of the bus shall be transparent to the bus operator and passengers. The OEM shall ensure that the bus structure can successfully accept the installation of the propulsion system and be operated on the stated duty-cycle for a period of 12 years without a structural failure. At a minimum, the propulsion system shall comply with applicable local, state and/or federal emissions and useful life requirements. The propulsion system shall comply with local, state and federal (maintenance) and other applicable sections.

The hybrid drive system shall be rated for the GVWR or greater of the bus.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 9.2.2 Propulsion System Service

DEFAULT

The propulsion system shall be arranged so that accessibility for all routine maintenance is ensured. No special tools, other than dollies and hoists, shall be required to remove the

propulsion system or any subsystems. However, the Agency shall recognize that properly rated test equipment and safe electrical work practices are essential when servicing high-voltage hybrid components. The exhaust system, air cleaner, air compressor, starter (if used), alternator, radiator, all engine accessories, and any other component requiring service or replacement shall be easily removable. The Contractor shall provide all specialty tools and diagnostic equipment required for maintaining the propulsion system in accordance with the Special Tools List. Primary Propulsion Unit and Traction Motor The propulsion system may be configured in a variety of methods dependent upon type of drive, series and/or parallel. The definition of motor in the context of this specification assumes that the device can provide or consume energy as well as provide or retard mechanical motion.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 9.2.3 Energy Storage and Controller

DEFAULT

Design and performance shall be provided to the Agency. Energy storage shall be of a commercial design capable of operating in the Agency transit environment. The primary charging of the energy storage system shall be accomplished by the on-board hybrid system controller and regenerative braking.

Thermal management will be provided to ensure optimal life and performance of the ESS over the environmental operating range.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 9.2.4 Hybrid System Controller (HSC)

DEFAULT

The HSC regulates energy flow throughout hybrid system components in order to provide motive performance and accessory loads, as applicable, while maintaining critical system parameters (e.g., voltages, currents, temperatures, etc.) within specified operating ranges.

The controller shall monitor and process inputs and execute outputs as appropriate to control the operation of all propulsion system components.

Energy storage system SOC correction methods stated in SAE J2711 shall be utilized.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 9.2.5 Engine

The engine and related emission systems shall meet all applicable emissions and design/durability guidelines and standards.

The Contractor shall provide the Agency with expected durability of the engine and related emission systems.

NOTE: The Agency will provide desired fuel type.

DEFAULT

Cummins ISL 280 H.P. Diesel

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment: Engine is Named "L9"

Standard Requirements for a Fast Idle Device

The engine shall be equipped with an operator-controlled fast idle device. The fast idle control shall be a two-way switch mounted on the dash or side console and shall activate only with the transmission in neutral and the parking brake applied.

TS 10. Cooling Systems

The cooling systems shall be of sufficient size to maintain all engine and transmission fluids and engine intake air at safe, continuous operating temperatures during the most severe operations possible and in accordance with engine and transmission manufacturers' cooling system requirements. The cooling system fan controls should sense the temperatures of the operating fluids and the intake air, and if either is above safe operating conditions, the cooling fan should be engaged. The fan control system shall be designed with a fail-safe mode of "fan on." The cooling system shall meet the requirements stated in the operating environment.

TS 10.1 Engine Cooling

A means of determining satisfactory engine coolant level shall be provided. A spring-loaded,

push-button type valve or lever shall be provided to safely release pressure or vacuum in the cooling system with both it and the water filler no more than ±60 in. above the ground. Both shall be accessible through the same access door.

The cooling fan shall be temperature controlled, allowing the engine to reach operating temperature quickly.

DEFAULT

The radiator and charge air cooler shall be of durable, corrosion-resistant construction with non-removable tanks.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 10.1.1 Radiator Screen

DEFAULT

No screen in front of radiator

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 10.1.2 Coolant

DEFAULT

Coolant Filtration without Supplemental Additives

The engine cooling system shall be equipped with a properly sized water filter with a spin-on element. The filter shall not release or contain supplemental coolant additives.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 10.1.3 Drive Design

DEFAULT

Electric Fans

The bus shall be equipped with an electric fan drive bus cooling system. A screen guard must be installed on electric motor fans per SAE J1308.
Base Bus - EMP Gen IV MH4 Fan System

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

Diesel and CNG will have EMP Gen IV MH4 and the Hybrid will have EMP Gen IV MH5. Reference Deviation

TS 10.1.4 Mounting

DEFAULT

Standard Mounting Design

Mounting location of radiator and charge air cooler shall be the Contractor's standard design.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 10.2 Charge Air Cooling

DEFAULT

The charge air cooling system, also referred to as after-coolers or inter-coolers, shall provide maximum air intake temperature reduction with minimal pressure loss. The charge air radiator shall be sized and positioned to meet engine manufacturer's requirements. The charge air radiator shall not be stacked ahead of or behind the engine radiator and shall be positioned as close to the engine as possible unless integrated with the radiator. Air ducting and fittings shall be protected against heat sources and shall be configured to minimize restrictions and maintain sealing integrity.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 10.3 Transmission Cooling

DEFAULT

The transmission shall be cooled by a dedicated heat exchanger sized to maintain operating fluid within the transmission manufacturer's recommended parameters of flow, pressure and temperature. The transmission cooling system shall be matched to the retarder and engine cooling systems to ensure that all operating fluids remain within recommended temperature limits established by each component manufacturer. The engine cooling system should provide coolant bypass flow to the transmission cooling system with the engine thermostats closed. Unless otherwise noted, the transmission cooler is to be the first component to see cold water from the radiator outlet. In addition, all return water piping, aside from the thermostat bypass line, is to be plumbed in after the transmission cooler.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 10.4 Hybrid Drive System Cooling

DEFAULT

The thermal management system shall maintain hybrid system components within design operating temperature limits.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 11. Transmission (Conventional Powertrain)

The transmission shall be multiple speed, automatic shift with torque converter, retarder and electronic controls. Gross input power, gross input torque and rated input speed shall be compatible with the engine. The transmission shall be designed to operate for not less than 300,000 miles on the design operating profile without replacement or major service. The transmission should be easily removable without disturbing the engine and accessible for service.

The electronic controls shall be capable of transmitting and receiving electronic inputs and data from other drivetrain components and of broadcasting that data to other vehicle systems. Communication between electronic drivetrain components and other vehicle systems shall be made using the communications networks. Electronic controls shall be compatible with either 12

or 24 V power distribution, provide consistent shift quality, and compensate for changing conditions, such as variations in vehicle weight and engine power. At a minimum, drivetrain components consisting of the engine, transmission, retarder, ASR, and anti-lock braking systems shall be powered by a dedicated and isolated ignition supply voltage to ensure data communication among components exists when the vehicle ignition is switched to the "on" position.

DEFAULT

Base Bus- Voith D864.5, or Latest Model

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

Current model is D864.6

DEFAULT

A nominal brake pedal application of 6 to 10 psi shall be required by the driver to engage forward or reverse range from the neutral position to prevent sudden acceleration of the bus from a parked position.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

DEFAULT

A brake pedal application of 6 to 10 psi shall be required by the driver to engage forward or reverse range from the neutral position to prevent sudden acceleration of the bus from a parked position.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

DEFAULT

No Automatic Neutral Function

The transmission shall not incorporate an automatic neutral shift function.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 12. Retarder

DEFAULT

The powertrain shall be equipped with a retarder designed to extend brake lining service life. The application of the retarder shall cause a smooth blending of both retarder and service brake function and shall not activate the brake lights

Actuation of ABS and/or automatic traction control (ATC) shall override the operation of the brake retarder.

The thermostatically controlled cooling fan shall be activated when the retarder is engaged and the coolant temperature reaches the maximum operating temperature established by the engine and transmission manufacturers.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

Standard Requirement for Retarder Activation

The retarder shall be adjustable within the limits of the powertrain and activated when the brake pedal is depressed. The Agency will work with the OEM/drive system manufacturer to determine retarder performance settings.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

Accessible Retarder Disable Switch

The retarder disable switch shall be accessible to the seated driver.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 13. Mounting

DEFAULT

All power plant mounting shall be mechanically isolated to minimize transfer of vibration to the body structure and provide a minimum clearance of 0.75 in. Mounts shall control the movement of the power plant so as not to affect performance of belt-driven accessories or cause strain in piping and wiring connections to the power plant.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 13.1 Service

DEFAULT

The propulsion system shall be arranged for ease of access and maintenance. The Contractor shall list all special tools, fixtures or facility requirements recommended for servicing. The muffler, exhaust system, air cleaner, air compressor, starter, alternator, radiator, all accessories and any other component requiring service or replacement shall be easily removable and independent of the engine and transmission removal. An engine oil pressure gauge and coolant temperature gauge shall be provided in the engine compartment. These gauges shall be easily

read during service and mounted in an area where they shall not be damaged during minor or major repairs.

An air cleaner with a dry filter element and a graduated air filter restriction indicator shall be provided. The location of the air intake system shall be designed to minimize the entry of dust and debris and to maximize the life of the air filter. The engine air duct shall be designed to minimize the entry of water into the air intake system. Drainage provisions shall be included to allow any water/moisture to drain prior to entry into the air filter.

Engine oil and the radiator filler caps shall be hinged to the filler neck and closed with spring pressure or positive locks to prevent leakage. All fluid fill locations shall be properly labeled to help ensure that correct fluid is added. All fillers shall be easily accessible with standard funnels, pour spouts and automatic dispensing equipment.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

DEFAULT

No engine bypass oil filter.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

DEFAULT

Engine Oil Pressure and Coolant Temperature Display

Engine oil pressure and coolant temperature gauges required in engine compartment.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 14. Hydraulic Systems

Hydraulic system service tasks shall be minimized and scheduled no more frequently than those of other major coach systems. All elements of the hydraulic system shall be easily accessible for service or unit replacement. Critical points in the hydraulic system shall be fitted with service ports so that portable diagnostic equipment may be connected or sensors for an off-board diagnostic system permanently attached to monitor system operation when applicable. A tamper-proof priority system shall prevent the loss of power steering during operation of the bus if other devices are also powered by the hydraulic system.

The hydraulic system shall operate within the allowable temperature range as specified by the lubricant manufacturer.

DEFAULT

No requirement for hydraulic system sensors.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 14.1 Fluid Lines

DEFAULT

All lines shall be rigidly supported to prevent chafing damage, Fatigue Failures, degradation and tension strain. Lines should be sufficiently flexible to minimize mechanical loads on the components. Lines passing through a panel, frame or bulkhead shall be protected by grommets (or similar devices) that fit snugly to both the line and the perimeter of the hole that the line passes through to prevent chafing and wear. Pipes and fluid hoses shall not be bundled with or used to support electrical wire harnesses.

Lines shall be as short as practicable and shall be routed or shielded so that failure of a line shall not allow the contents to spray or drain onto any component operable above the auto-ignition temperature of the fluid.

All hoses, pipes, lines and fittings shall be specified and installed per the manufacturer's recommendations.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 14.2 Fittings and Clamps

DEFAULT

All clamps shall maintain a constant tension at all times, expanding and contracting with the line in response to temperature changes and aging of the line material. The lines shall be designed for use in the environment where they are installed (for example, high-temperature resistant in the engine compartment, resistant to road salts near the road surface, and so on).

Compression fittings shall be standardized to prevent the intermixing of components. Compression fitting components from more than one manufacturer shall not be mixed, even if the components are known to be interchangeable.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 14.3 Charge Air Piping

DEFAULT

Charge air piping and fittings shall be designed to minimize air restrictions and leaks. Piping shall be as short as possible, and the number of bends shall be minimized. Bend radii shall be maximized to meet the pressure drop and temperature rise requirements of the engine manufacturer. The cross section of all charge air piping shall not be less than the cross section of the intake manifold inlet. Any changes in pipe diameter shall be gradual to ensure a smooth passage of air and to minimize restrictions. Piping shall be routed away from heat sources as practicable and shielded as required to meet the temperature rise requirements of the engine manufacturer.

Charge air piping shall be constructed of stainless steel, aluminized steel, anodized aluminum or painted steel rated at minimum 1000 hours of salt spray according to ASTM B117, except between the air filter and turbocharger inlet, where piping may be constructed of flexible heat-resistant material. Connections between all charge air piping sections shall be sealed with a short section of reinforced hose and secured with stainless steel constant tension clamps that provide a complete 360deg seal.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 15. Radiator

DEFAULT

Radiator piping shall be stainless steel, brass tubing or painted steel rated at 1000 hours of salt spray according to ASTM B117 and where practicable, hoses shall be eliminated, including biodiesel. Necessary hoses shall be impervious to all bus fluids. All hoses shall be secured with stainless steel clamps that provide a complete 360deg seal. The clamps shall maintain a constant tension at all times, expanding and contracting with the hose in response to temperature changes and aging of the hose material.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 16. Oil and Hydraulic Lines

DEFAULT

Oil and hydraulic lines shall be compatible with the substances they carry. The lines shall be designed and intended for use in the environment where they are installed (for example, high-temperature resistant in the engine compartment, resistant to road salts near the road surface and so on). Lines within the engine compartment shall be composed of steel tubing where practicable, except in locations where flexible lines are required.

Hydraulic lines of the same size and with the same fittings as those on other piping systems of the bus, but not interchangeable, shall be tagged or marked for use on the hydraulic system only.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 17. Fuel

Agency to specify fuel type.

TS 17.1 Fuel Lines

DEFAULT

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

Manifolds connecting fuel containers shall be designed and fabricated to minimize vibration and shall be installed in protected locations to prevent line or manifold damage from unsecured objects or road debris.

Fuel hose and hose connections, where permitted, shall be made from materials resistant to corrosion and fuel and protected from fretting and high heat. Fuel hoses shall be accessible for ease of serviceability.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 17.1.1 Fuel Lines, Diesel

DEFAULT

Agency to specify fuel type.
Fuel lines shall be capable of carrying the type of fuel specified by the Agency (i.e., up to B20 type fuel).

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 17.1.2 Fuel Lines, CNG

DEFAULT

Fuel lines shall comply with NFPA-52.All tubing shall be a minimum of seamless Type 304 stainless steel (ASTM A269 or equivalent).Fuel lines and fittings shall not be fabricated from cast iron, galvanized pipe, aluminum, plastic or copper alloy with content exceeding 70 percent copper. Pipe fittings and hoses shall be clear and free from cuttings, burrs or scale. Pipe thread joining material that is impervious to CNG shall be utilized as required. Fuel lines shall be identifiable as fuel lines only.

High-pressure CNG lines shall be pressure tested to a minimum of 125 percent of system working pressure prior to fueling. CNG, nitrogen or clean, dry air shall be used to pressure-test the lines/assembly. The bus manufacturer shall have a documented procedure for testing the high-pressure line assembly.

Fuel lines shall be securely mounted, braced and supported using "split-block" type or stainless steel P clamps; all mounting clamps shall be mounted to a rigid structure to minimize vibration and shall be protected against damage, corrosion or breakage due to strain, rubbing or wear. "Floating clamps" (not mounted to a rigid structure) shall not be permitted. Fuel lines shall not be used to secure other components (wires, air lines, etc.).

Manifolds connecting fuel containers shall be designed and fabricated to minimize vibration and shall be installed in protected location(s) to prevent line or manifold damage from unsecured objects or road debris.

Fuel hose connections, where permitted, shall be less than 48 in. in length, made from materials resistant to corrosion and action of natural gas, and protected from fretting and high heat and shall be supported approximately every 12 in.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 17.2 Design and Construction

TS 17.2.1 Design and Construction, Diesel

Fuel Tank(s)

DEFAULT

The fuel tank(s) shall be made of corrosion-resistant steel

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

Installation

DEFAULT

The fuel tank(s) shall be securely mounted to the bus to prevent movement during bus maneuvers.

The fuel tank(s) shall be equipped with an external, hex head, drain plug. It shall be at least a ⅜in. size and shall be located at the lowest point of the tank(s).The fuel tank(s) shall have an inspection plate or easily removable filler neck to permit cleaning and inspection of the tank(s) without removal from the bus. The tank(s) shall be baffled internally to prevent fuel-sloshing

regardless of fill level. The baffles or fuel pickup location shall assure continuous full power operation on a 6 percent upgrade for 15 minutes starting with no more than 25 gal of fuel over the unusable amount in the tank(s).The bus shall operate at idle on a 6 percent downgrade for 30 minutes starting with no more than 10 gal of fuel over the unusable amount in the tank(s).

The materials used in mounting shall withstand the adverse effects of road salts, fuel oils and accumulation of ice and snow for the life of the bus.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

Labeling

DEFAULT

The capacity, date of manufacture, manufacturer name, location of manufacture, and certification of compliance to federal motor carrier safety regulations shall be permanently marked on the fuel tank(s).The markings shall be readily visible and shall not be covered with an undercoating material.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

Fuel Filler

DEFAULT

The fuel filler shall be located 7 to 32ft behind the centerline of the front door on the curbside of the bus. The filler cap shall be retained to prevent loss and shall be recessed into the body so that spilled fuel will not run onto the outside surface of the bus.

The fuel lines forward of the engine bulkhead shall be in conformance to SAE Standards.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

DEFAULT

OEM to designate height of fuel filler.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

DEFAULT

Dry-Break Fuel Filler

The fuel filler shall accommodate a nozzle that forms a locked and sealed connection during the refueling process to eliminate spills. Fuel shall not be allowed to flow into the tank unless the nozzle has been properly coupled, locked and sealed to the filler. With the nozzle open, fuel shall enter the tank at a fill rate of not less than 40 gal per minute of foam-free fuel without causing the nozzle to shut off before the tank is full. The nozzle shall automatically shut off when the tank is essentially full. Once disconnected, fuel shall not be allowed to flow through the nozzle at any time. Any pressure over 3 psi shall be relieved from the fuel tank automatically. An audible signal shall indicate when the tank is essentially full. The dry break system shall be compatible with the Agency's system. The fuel filler cap shall be hinged.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 17.2.2 Design and Construction, CNG

Fuel Containers/Cylinders

CNG fuel containers/cylinders must be designed, constructed, manufactured and tested in accordance with at least one of the following:

- NFPA 52-Standard for Compressed Natural Gas (CNG) Vehicular Fuel Systems
- FMVSS 304
- Any local standard(s) specifically intended for CNG fuel containers

The design and construction of the fuel system supplied by the OEM shall comply with federal and local regulations.

Installation

Fuel cylinders shall be installed in accordance with ANSI/IAS NGV2 - 1998, "Basic Requirements for Compressed Natural Gas Vehicles (NGV) Fuel Containers" and NFPA 52, "Compressed Natural Gas (CNG) Vehicular Fuel Systems Code," 1998 edition, Section 303.In the case of a low-floor transit bus, the placement of tanks shall be limited to the roof of the vehicle or in the compartment above the engine of the vehicle.

Fuel cylinders, attached valves, pressure relief devices, and mounting brackets should be installed and protected so that their operation is not affected by bus washers and environmental agents such as rain, snow, ice or mud. These components should be protected from significant damage caused by road debris or collision.

The roof and area above the engine mounted tanks shall be contained within a skeletal structure resembling a roll cage and contained within an enclosure. The enclosure shall incorporate a hinged clamshell type access. The access panels shall be designed to offer protection from weather and to be sacrificial as a means of providing an escape path to atmosphere upon rapid enclosure pressure rise. The latching method shall utilize quick-release captive hardware that can be demonstrated to last the life of the bus. Additional shielding shall be provided surrounding end fittings and valves as needed. Shields shall be attached to the bus structure hinged in a manner that permits one mechanic to unlatch and swing the shield open for routine inspections. As practical, electrical components shall not be located within the roof enclosure, and if unavoidable, they shall be intrinsically safe.

CNG fueled buses shall be equipped with an active automatic gas detection system, which shall annunciate unsafe levels of methane. The automatic gas detection system shall be integrated with an onboard fire suppression system.

DEFAULT

The access panels shall not be interlocked.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

Labeling

DEFAULT

CNG fuel systems shall be labeled in accordance with NFPA 52, "Compressed Natural Gas (CNG) Vehicular Fuel Systems Code," 1998 edition.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

Pressure Relief Devices (PRDs)

DEFAULT

PRDs must be designed, constructed, manufactured and tested in accordance with ANIS/IAS PRD1 - 1998, "Pressure Relief Devices for Natural Gas Vehicle (NGV) Fuel Containers" and ANSI/IAS NGV2-1998, "Basic Requirements for Compressed Natural Gas Vehicle (NGV) Fuel Containers." All natural gas fuel system piping, including the PRD vent line, shall be stainless steel. All PRDs must be vented to outside.

Valves

Valves must be installed in accordance with ANIS/IAS NGV2 - 1998, "Basic Requirements for Compressed Natural Gas Vehicle (NGV) Fuel Containers" and NFPA 52, "Standard for Compressed Natural Gas (CNG) Vehicular Fuel Systems."

Fuel Filler

The fuel filler shall be located 7 to 38 ft. (on a 30, 35 and 40ft coach) behind the centerline of the front door on a side determined by the Agency. The filler cap shall be retained to prevent loss and shall be recessed into the body.

The fill and vent receptacles shall be located within an enclosure on the right side of the bus. The access door shall be sized to allow full viewing of gauges, ease of hookups and maneuver of fuel nozzle.

The fuel fill receptacle and vent receptacle attachment shall be robust and capable of routine fueling connects/disconnects without deflection or metal fatigue, and capable of withstanding mechanical loads induced by a fueling drive-away incident without attachment failure.

No static ground plug shall be installed.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

Fueling System

DEFAULT

The CNG fueling port receptacle shall be an ANSI/AGA NGV1 or NGV2 certified receptacle as designated by the Agency. The coach shall be capable of being fueled by a nozzle determined by

the Agency. The fueling port receptacle location shall be such that connection by fueling personnel can be performed without physical strain or interference. A dust cap shall be permanently "tethered" to the fueling port receptacle. The fueling port receptacle access door shall be equipped with an interlock sensor that disables the engine starting system when the access door is open, to prevent drive-aways. The interlock shall be of the type such that if the sensor fails, the coach will not start.

Fueling site characteristics such as pressure, flow rate and temperature shall be provided by the Agency.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

Defueling System

The CNG defueling port shall be an NGV-3.1/CGA-12.3 certified receptacle. The CNG defueling port shall be located on the curbside of the coach, in a location that is compatible with the Agency's defueling station operation. The defueling system shall incorporate the following characteristics:

- Dust cap permanently "tethered" to the defueling port.
- Device(s) to prevent inadvertent defueling. Specifications to be provided by Agency.
- Components compatible with Agency's defueling operation.
- The piping and fittings onboard the bus shall be sized to allow the fueling station to meet the following operating parameters:

DEFAULT

Fuel system shall be sized to allow a bus with 20,000 scf on board to defuel within 2.5 hours.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 18. Emissions and Exhaust

TS 18.1 Exhaust Emissions

The engine and related systems shall meet all applicable emission and engine design guidelines and standards.

TS 18.2 Exhaust System

The exhaust pipe shall be of sufficient height to prevent exhaust gases and waste heat from discoloring or causing heat deformation to the bus. The entire exhaust system shall be adequately shielded to prevent heat damage to any bus component, including the exhaust after treatment compartment area. The exhaust outlet shall be designed to minimize rain, snow or water generated from high-pressure washing systems from entering into the exhaust pipe and causing damage to the after treatment.

DEFAULT

Exhaust gases and waste heat shall be discharged from the roadside rear corner of the roof.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 18.3 Exhaust After treatment

An exhaust after treatment system will be provided to ensure compliance to all applicable EPA regulations in effect.

Diesel Exhaust Fluid Injection

DEFAULT

If required by the engine manufacturer to meet NOx level requirements specified by EPA, a DEF injection system will be provided. The DEF system will minimally include a tank, an injector, a pump, an ECM and a selective catalytic converter. The tanks shall be designed to store DEF in the operating environment described in the "Operating Environment" section.

The DEF filler shall accommodate a standard nozzle. The nozzle shall automatically shut off when the tank is essentially full. The DEF filler cap shall be a screw-on cap and located curbside.

The DEF fluid lines shall be designed to prevent the DEF from freezing. The DEF injection system shall not be damaged from a cold soak at 10 °F.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 18.4 Particulate After treatment

DEFAULT

If required by the engine manufacturer to meet particulate level requirements specified by EPA, a particulate trap will be provided. The particulate trap shall regenerate itself automatically if it senses clogging. Regeneration cycles and conditions will be defined by the engine manufacturer.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

STRUCTURE

TS 19. General

TS 19.1 Design

DEFAULT

The structure of the bus shall be designed to withstand the transit service conditions typical of an urban or intercity duty cycle throughout its service life. The vehicle structural frame shall be designed to operate with minimal maintenance throughout the 12-year design operating profile. The design operating profile specified by the Agency shall be considered for this purpose.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 20. Altoona Testing

Prior to acceptance of first bus, the vehicle must have completed any FTA-required Altoona testing. Any items that required repeated repairs or replacement must undergo the corrective action with supporting test and analysis. A report clearly describing and explaining the failures and corrective actions taken to ensure that any and all such failures will not occur shall be submitted to the Agency.

DEFAULT

If available, the Altoona Test Report shall be provided to the Agency with the Proposal submittal. If not available, then the report shall be provided prior to first acceptance of bus.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 20.1 Structural Validation

DEFAULT

Baseline Structural Analysis

The structure of the bus shall have undergone appropriate structural testing and/or analysis. At minimum, appropriate structural testing and analysis shall include Altoona testing or finite element analysis (FEA).

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

Frame Material

3CR12 Stainless Steel

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

Distortion

DEFAULT

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

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 21. Resonance and Vibration

DEFAULT

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.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 21.1 Engine Compartment Bulkheads

DEFAULT

The passenger and engine compartment shall be separated by fire-resistant bulkheads. The engine compartment shall include areas where the engine and exhaust system are housed. This bulkhead shall preclude or retard propagation of an engine compartment fire into the passenger compartment and shall be in accordance with the Recommended Fire Safety Practices defined in FTA Docket 90A, dated October 20, 1993. Only necessary openings shall be allowed in the bulkhead, and these shall be fire-resistant. Any passageways for the climate control system air shall be separated from the engine compartment by fire-resistant material. Piping through the bulkhead shall have fire-resistant fittings sealed at the bulkhead. Wiring may pass through the bulkhead only if connectors or other means are provided to prevent or retard fire propagation through the bulkhead. Engine access panels in the bulkhead shall be fabricated of fire-resistant material and secured with fire-resistant fasteners. These panels, their fasteners and the bulkhead shall be constructed and reinforced to minimize warping of the panels during a fire that will compromise the integrity of the bulkhead.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

Reference Deviation

TS 21.2 Crashworthiness

The bus body and roof structure shall withstand a static load equal to 150 percent of the curb weight evenly distributed on the roof with no more than a 6 in. reduction in any interior

dimension. Windows shall remain in place and shall not open under such a load. These requirements must be met without the roof-mounted equipment installed.

The bus shall withstand a 25 mph impact by a 4000lb automobile at any side, excluding doorways, along either side of the bus with no more than 3 in. of permanent structural deformation at seated passenger hip height. This impact shall not result in sharp edges or protrusions in the bus interior.

Exterior panels below 35 in. from ground level shall withstand a static load of 2000 lbs. applied perpendicular to the bus by a pad no larger than 5 sq. in. This load shall not result in deformation that prevents installation of new exterior panels to restore the original appearance of the bus.

DEFAULT

Side Impact Barriers

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 22. Corrosion

The bus flooring, sides, roof, understructure and axle suspension components shall be designed to resist corrosion or deterioration from atmospheric conditions and de-icing materials for a period of 12 years or 500,000 miles, whichever comes first. It shall maintain structural integrity and nearly maintain original appearance throughout its service life, with the Agency's use of proper cleaning and neutralizing agents.

All materials that are not inherently corrosion resistant shall be protected with corrosion-resistant coatings. All joints and connections of dissimilar metals shall be corrosion resistant and shall be protected from galvanic corrosion. Representative samples of all materials and connections shall withstand a two-week (336-hour) salt spray test in accordance with ASTM Procedure B-117 with no structural detrimental effects to normally visible surfaces and no weight loss of over 1 percent.

DEFAULT

Corrosion-Resistance Requirements

All exposed surfaces and the interior surfaces of tubing and other enclosed members below the lower window line shall be corrosion resistant through application of a corrosion protection system.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 23. Towing

Each towing device shall withstand, without permanent deformation, tension loads up to 1.2 times the curb weight of the bus within 20 deg. of the longitudinal axis of the bus. If applicable, the rear towing device(s) shall not provide a toehold for unauthorized riders. The method of attaching the towing device shall not require the removal, or disconnection, of front suspension or steering components. Removal of the bike rack is permitted for attachment of towing devices.

DEFAULT

Shop air connectors shall be provided at the front and rear of the bus and shall be capable of supplying all pneumatic systems of the bus with externally sourced compressed air. The location of these shop air connectors shall facilitate towing operations.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

No Provision of Glad-Hand Type Connectors for Towing

No glad-hand type connector shall be provided.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

Lifted (Supported) Front Axle and Flat Towing Capability

The front towing devices shall allow attachment of adapters for a rigid tow bar and shall permit the lifting of the bus until the front wheels are clear off the ground in order to position the bus on the towing equipment by the front wheels. These devices shall also permit common flat towing.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment: Reference Deviation

TS 24. Jacking

It shall be possible to safely jack up the bus, at curb weight, with a common 10-ton floor jack with or without special adapter, when a tire or dual set is completely flat and the bus is on a level, hard surface, without crawling under any portion of the bus. Jacking from a single point shall permit raising the bus sufficiently high to remove and reinstall a wheel and tire assembly. Jacking pads located on the axle or suspension near the wheels shall permit easy and safe jacking with the flat tire or dual set on a 6 in. high run-up block not wider than a single tire. The bus shall withstand such jacking at any one or any combination of wheel locations without permanent deformation or damage.

DEFAULT

Yellow Pads

Jacking pads shall be painted safety yellow.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment: GILLIG will provide Jacking Points

TS 25. Hoisting

DEFAULT

The bus axles or jacking plates shall accommodate the lifting pads of a two-post hoist system. Jacking plates, if used as hoisting pads, shall be designed to prevent the bus from falling off the hoist. Other pads or the bus structure shall support the bus on jack stands independent of the hoist.

The vehicle shall be capable of lifting by the wheels, and, as necessary to meet tire load requirements, the proper number for wheel lifts and/or adapters must be used.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 26. Floor

TS 26.1 Design

The floor shall be essentially a continuous plane, except at the wheel housings and platforms. Where the floor meets the walls of the bus, as well as other vertical surfaces such as platform risers, the surface edges shall be blended with a circular section of radius not less than ¼ in. or installed in a fully sealed butt joint. Similarly, a molding or cover shall prevent debris accumulation between the floor and wheel housings. The vehicle floor in the area of the entrance and exit doors shall have a lateral slope not exceeding 2degto allow for drainage.

DEFAULT

Bi-Level Floor Design

The floor design shall consist of two levels (bi-level construction). Aft of the rear door extending to the rear settee riser, the floor height may be raised to a height no more than 21 in. above the lower level, with equally spaced steps. An increase slope shall be allowed on the upper level, not to exceed 3.5 deg. off the horizontal.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 26.2 Strength

DEFAULT

The floor deck may be integral with the basic structure or mounted on the structure securely to prevent chafing or horizontal movement and designed to last the life of the bus. Sheet metal screws shall not be used to retain the floor, and all floor fasteners shall be serviceable from one side only. Any adhesives, bolts or screws used to secure the floor to the structure shall last and remain effective throughout the life of the coach. Tapping plates, if used for the floor fasteners, shall be no less than the same thickness as a standard nut, and all floor fasteners shall be secured and protected from corrosion for the service life of the bus.

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 0.60 in. from the normal plane. The floor shall withstand the application of 2.5 times gross load weight without permanent detrimental deformation. The floor, with coverings applied, shall withstand a static load of at least 150 lbs. applied through the flat end of a ½ in. diameter rod, with 1/32 in. radius, without permanent visible deformation.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 26.3 Construction

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

DEFAULT

Pressure-Preserved Plywood Panel

Plywood shall be certified at the time of manufacturing by an industry-approved third-party inspection agency such as APA – The Engineered Wood Association (formerly the American Plywood Association).Plywood shall be of a thickness adequate to support design loads, manufactured with exterior glue, satisfy the requirements of a Group I Western panel as defined in PS 1-95 (Voluntary Product Standard PS 1-95, "Construction and Industrial Plywood") and be of a grade that is manufactured with a solid face and back. Plywood shall be installed with the highest-grade, veneer side up. Plywood shall be pressure-treated with a preservative chemical and process such as alkaline copper quaternary (ACQ) that prevents decay and damage by insects. Preservative treatments shall utilize no EPA-listed hazardous chemicals. The concentration of preservative chemicals shall be equal to or greater than required for an above ground level application. Treated plywood will be certified for preservative penetration and retention by a third-party inspection agency. Pressure-preservative treated plywood shall have a moisture content at or below 15 percent.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 27. Platforms

TS 27.1 Driver's Area

The covering of platform surfaces and risers, except where otherwise indicated, shall be the same material as specified for floor covering. Trim shall be provided along top edges of platforms unless integral nosing is provided.

DEFAULT

No specific trim material specified.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

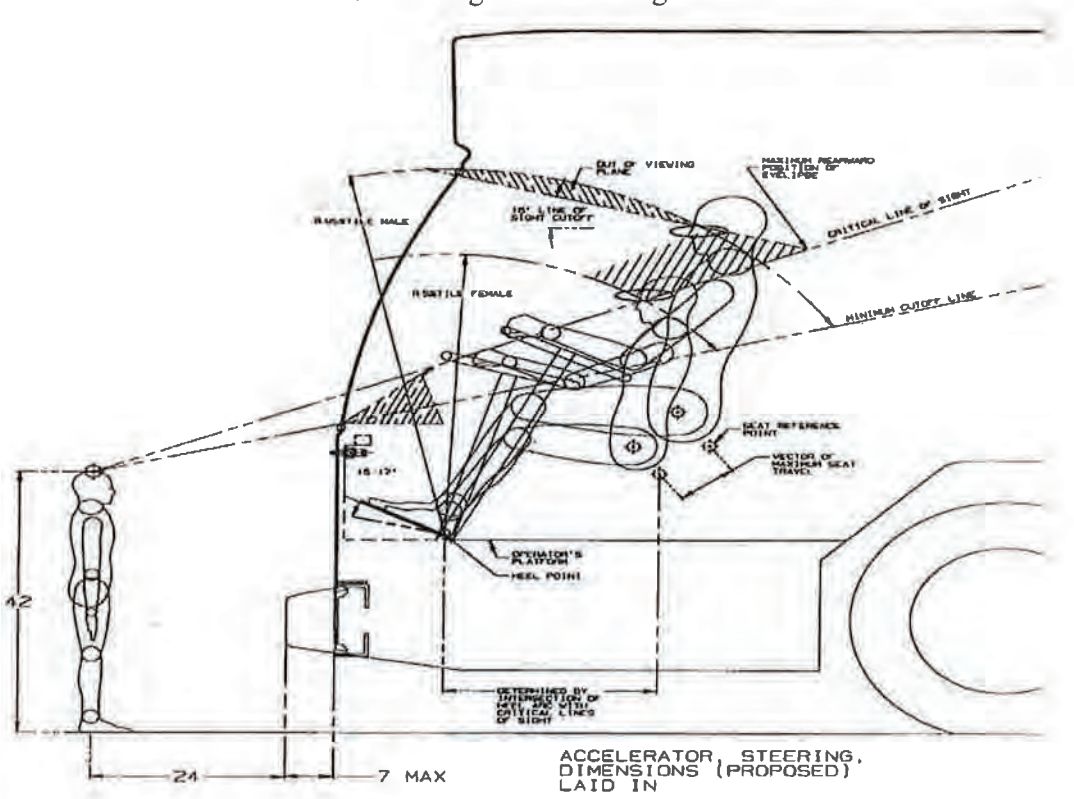
Comment:

TS 27.2 Driver's Platform

DEFAULT

The driver's platform shall be of a height such that, in a seated position, the driver can see an object located at an elevation of 42 in. above the road surface, 24 in. from the leading edge of the bumper. Notwithstanding this requirement, the platform height shall not position the driver such that the driver's vertical upward view is less than 15 deg. A warning decal or sign shall be provided to alert the driver to the change in floor level. **Figure 2**illustrates a means by which the platform height can be determined, using the critical line of sight.

FIGURE 2
Determining Platform Height



Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 27.3 Farebox

Farebox placement should minimize impact to passenger access and minimize interference with the driver's line of sight.

DEFAULT

Driver Interface Required; Platform Needed to Bring Height to Driver Access

If the driver's platform is higher than 12 in., then the farebox is to be mounted on a platform of suitable height to provide accessibility for the driver without compromising passengers' access. Base Bus- Pre wire to agency specifications

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 27.4 Rear Step Area to Rear Area

DEFAULT

If the vehicle is of a bi-level floor design, then a rear step area shall be provided along the center aisle of the bus to facilitate passenger traffic between the upper and lower floor levels. This step area shall be cut into the rear platform and shall be approximately the aisle width, a minimum 12 in. deep and approximately half the height of the upper level relative to the lower level. The horizontal surface of this platform shall be covered with skid-resistant material with a visually contrasting nosing and shall be sloped slightly for drainage. A warning decal or sign shall be provided at the immediate platform area to alert passengers to the change in floor level.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 28. Wheel Housing

TS 28.1 Design and Construction

DEFAULT

Sufficient clearance and air circulation shall be provided around the tires, wheels and brakes to preclude overheating when the bus is operating on the design operating profile. Wheel housings shall be constructed of corrosion-resistant and fire-resistant material.

Wheel housings, as installed and trimmed, shall withstand impacts of a 2in. steel ball with at least 200 ft-lbs of energy without penetration.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 28.2 Design and Construction

Interference between the tires and any portion of the bus shall not be possible in maneuvers up to the limit of tire adhesion with weights from curb weight to GVWR. Wheel housings shall be adequately reinforced where seat pedestals are installed. Wheel housings shall have sufficient sound insulation to minimize tire and road noise and meet all noise requirements of this specification.

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

The finish of the front wheel housings shall be scratch-resistant and complement interior finishes of the bus to minimize the visual impact of the wheel housing. If fiberglass wheel housings are provided, then they shall be color-impregnated to match interior finishes. The lower portion extending to approximately 10 to 12 in. above the floor shall be equipped with scuff-resistant coating or stainless steel trim.

Wheel housings not equipped with seats or equipment enclosure shall have a horizontal assist mounted on the top portion of the housing no more than 4 in. higher than the wheel well housing.

DEFAULT

No provision shall be made to chain buses.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

CHASSIS

TS 29. Suspension

TS 29.1 General Requirements

DEFAULT

The front, rear and mid suspensions shall be pneumatic type. The basic suspension system shall last the service life of the bus without major overhaul or replacement. Adjustment points shall be minimized and shall not be subject to a loss of adjustment in service. Routine adjustments shall be easily accomplished by limiting the removal or disconnecting the components.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 29.2 Alignment

DEFAULT

All axles should be properly aligned so the vehicle tracks accurately within the size and geometry of the vehicle.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 29.3 Springs and Shock Absorbers

TS 29.3.1 Suspension Travel

DEFAULT

The suspension system shall permit a minimum wheel travel of 2.75 in. jounce-upward travel of a wheel when the bus hits a bump (higher than street surface), and 2.75 in. rebound-downward travel when the bus comes off a bump and the wheels fall relative to the body. 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. Suspensions shall incorporate appropriate devices for automatic height control so that regardless of load the bus height relative to the centerline of the wheels does not change more than ½ in. at any point from the height required. The safe operation of a bus cannot be impacted by ride height up to 1 in. from design normal ride height.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 29.3.2 Damping

DEFAULT

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 three cycles or less after hitting road perturbations. The shock absorber bushing shall be made of elastomeric material that will last the life of the shock absorber. The damper shall incorporate a secondary hydraulic rebound stop.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 29.3.3 Lubrication

DEFAULT

Standard Grease Fittings

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 from a pit or with the bus on a hoist. Each element requiring lubrication shall have its own grease fitting with a relief path. The lubricant specified shall be standard for all elements on the bus serviced by standard fittings and shall be required no less than every 6000 miles.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 29.3.4 Kneeling

DEFAULT

A kneeling system shall lower the entrance(s) of the bus a minimum of 2 in. during loading or unloading operations regardless of load up to GVWR, measured at the longitudinal centerline of the entrance door(s) by the driver. The kneeling control shall provide the following functions:

- Downward control must be held to allow downward kneeling movement.
- Release of the control during downward movement must completely stop the lowering motion and hold the height of the bus at that position.
- Upward control actuation must allow the bus to return to normal floor height without the driver having to hold the control.

The brake and throttle interlock shall prevent movement when the bus is kneeled. The kneeling control shall be disabled when the bus is in motion. The bus shall kneel at a maximum rate of 1.25 in. per second at essentially a constant rate. After kneeling, the bus shall rise within 4 seconds to a height permitting the bus to resume service and shall rise to the correct operating height within 7 seconds regardless of load up to GVWR. During the lowering and raising operation, the maximum vertical acceleration shall not exceed 0.2g, and the jerk shall not exceed 0.3g/second.

An indicator visible to the driver shall be illuminated until the bus is raised to a height adequate for safe street travel. An audible warning alarm will sound simultaneously with the operation of the kneeler to alert passengers and bystanders. A warning light mounted near the curbside of the front door, a minimum 2.5 in. diameter amber lens, shall be provided that will blink when the kneel feature is activated. Kneeling shall not be operational while the wheelchair ramp is deployed or in operation.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 30. Wheels and Tires

TS 30.1 Wheels

All wheels shall be interchangeable except for the middle axle of an artic where a super single tire size is used 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 per SAE J1986.

DEFAULT

Base Bus- Alcoa Dura Bright EVO Full Polished

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

DEFAULT
No tire-pressure monitoring system.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*
Comment:

DEFAULT
Standard non-locking lug nut.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*
Comment:

TS 30.2 Tires

Tires shall be suitable for the conditions of transit service and sustained operation at the maximum speed capability of the bus. Load on any tire at GVWR shall not exceed the tire supplier's rating.

DEFAULT
Agency specified standard size tires

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*
Comment:

TS 31. Steering

DEFAULT

Hydraulically assisted steering shall be provided. The steering gear shall be an integral type with the number and length of flexible lines minimized or eliminated. Engine-driven hydraulic pump shall be provided for power steering.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 31.1 Steering Axle

DEFAULT

Solid Beam Axle and Grease-Type Front Bearings and Seals

The front axle shall be solid beam, non-driving with a load rating sufficient for the bus loaded to GVWR and shall be equipped with grease type front wheel bearings and seals.
Base Bus- Arvin Meritor

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

Oiled-Type Front Bearings

The front axle shall be non-driving with a load rating sufficient for the bus loaded to GVWR and shall be equipped with sealed, oiled-type front wheel bearings.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 31.2 Steering Wheel

TS 31.2.1 Turning Effort

DEFAULT

Steering effort shall be measured with the bus at GVWR, 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.

Under these conditions, the torque required to turn the steering wheel 10 deg. shall be no less than 5 ft.-lbs. and no more than 10 ft.-lbs. Steering torque may increase to 70 ft.-lbs. when the wheels are approaching the steering stops, as the relief valve activates.

Power steering failure shall not result in loss of steering control. With the bus in operation, the steering effort shall not exceed 55 lbs. at the steering wheel rim, and perceived free play in the steering system shall not materially increase as a result of power assist failure. Gearing shall require no more than seven turns of the steering wheel lock-to-lock.

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.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 31.2.2 Steering Wheel, General

DEFAULT

The steering wheel diameter shall be approximately 18 to 20 in.; the rim diameter shall be ⅞ to 1¼ in. and shaped for firm grip with comfort for long periods of time.

Steering wheel spokes and wheel thickness shall ensure visibility of the dashboard so that vital instrumentation is clearly visible at center neutral position (within the range of a 95th-percentile male, as described in SAE 1050a, Sections 4.2.2 and 4.2.3).Placement of steering column must be as far forward as possible, but either inline with or behind the instrument cluster.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 31.2.3 Steering Column Tilt

DEFAULT

The steering column shall have full tilt capability with an adjustment range of no less than 40 deg. from the vertical and easily adjustable by the driver and shall be accessible by a 5th percentile female and 95th percentile male.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 31.2.4 Steering Wheel Telescopic Adjustment

DEFAULT

The steering wheel shall have full telescoping capability and have a minimum telescopic range of 2 in. and a minimum low-end adjustment of 29 in., measured from the top of the steering wheel rim in the horizontal position to the cab floor at the heel point.

TABLE 4

Steering Wheel Height[1] Relative to Angle of Slope

At Minimum Telescopic Height Adjustment (29 in.)		At Maximum Telescopic Height Adjustment (5 in.)	
Angle of Slope	**Height**	**Angle of Slope**	**Height**
0 deg.	29 in.	0 deg.	34 in.
15 deg.	26.2 in.	15 deg.	31.2 in.
25 deg.	24.6 in.	25 deg.	29.6 in.
35 deg.	22.5 in.	35 deg.	27.5 in.

1. Measured from bottom portion closest to driver.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 32. Drive Axle

The bus shall be driven by a heavy-duty axle with a load rating sufficient for the bus loaded to GVWR. The drive axle shall have a design life to operate for not less than 300,000 miles on the design operating profile without replacement or major repairs. The lubricant drain plug shall be magnetic type. If a planetary gear design is employed, the oil level in the planetary gears shall be easily checked through the plug or sight gauge. The axle and driveshaft components shall be rated for both propulsion and retardation modes with respect to duty cycle.

NOTE: The retardation duty cycle can be more aggressive than propulsion.

The drive shaft shall be guarded to prevent hitting any critical systems, including brake lines, coach floor or the ground, in the event of a tube or universal joint failure.

DEFAULT

Solid Beam Axle and Grease-Type Bearings and Seals

Base Bus- Arvin Meritor

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 33. Turning Radius

DEFAULT

TABLE 5

Maximum Turning Radius

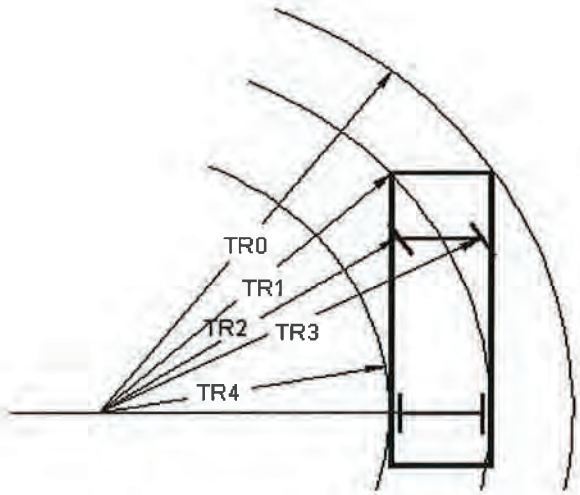
Bus Length (approximate)	Maximum Turning Radius (see Figure 3)	Agency Requirement
30 ft.	31 ft. (TR0)	
35 ft.	39 ft. (TR0)	
40 ft.	44 ft. (TR0)	

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

FIGURE 3
Turning Radius



TS 34. Brakes

TS 34.1 Service Brake

DEFAULT

Brakes shall be self-adjusting. Brake wear indicators visible on linings.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 34.2 Actuation

DEFAULT

Service brakes shall be controlled and actuated by a compressed air system. Force to activate the brake pedal control shall be an essentially linear function of the bus deceleration rate and shall not exceed 75 lbs. at a point 7 in. above the heel point of the pedal to achieve maximum braking. The heel point is the location of the driver's heel when his or her foot is rested flat on the pedal and the heel is touching the floor or heel pad of the pedal. The ECU for the ABS system shall be protected, yet in an accessible location to allow for ease of service.

The total braking effort shall be distributed among all wheels in such a ratio as to ensure equal friction material wear rate at all wheel locations. Manufacturer shall demonstrate compliance by providing a copy of a thermodynamic brake balance test upon request.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

No automatic traction control.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 34.3 Friction Material

The brake linings shall be made of non-asbestos material. In order to aid maintenance personnel in determining extent of wear, a provision such as a scribe line or a chamfer indicating the thickness at which replacement becomes necessary shall be provided on each brake lining. The complete brake lining wear indicator shall be clearly visible from the hoist or pit without removing backing plates.

DEFAULT

No remote brake wear indicator shall be required.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 34.4 Hubs and Drums/Discs

Replaceable wheel bearing seals shall run on replaceable wear surfaces or be of an integral wear surface sealed design. Wheel bearing and hub seals and unitized hub assemblies shall not leak or weep lubricant when operating on the design operating profile for the duration of the initial manufacturer's warranty.

DEFAULT

Drum Brakes

The bus shall be equipped with brake drums. Brake drums shall allow machining for oversized linings per manufacturer's specifications. Base Bus 16.5" x 8 5" riveted lining cast plus.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 34.5 Hubs and Drums

DEFAULT

Replaceable wheel bearing seals shall run on replaceable wear surfaces or be of an integral wear surface sealed design. Wheel bearing and hub seals and unitized hub assemblies shall not leak or weep lubricant when operating on the design operating profile for the duration of the initial manufacturer's warranty.

The bus shall be equipped with disc brakes on all axles, and the brake discs shall allow machining of each side of the disc to obtain smooth surfaces per manufacturer's specifications.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 34.6 Parking/Emergency Brake

DEFAULT

Air Brakes

The parking brake shall be a spring-operated system, actuated by a valve that exhausts compressed air to apply the brakes. The parking brake may be manually enabled when the air pressure is at the operating level per FMVSS 121.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 35. Interlocks

TS 35.1 Passenger Door Interlocks

To prevent opening mid and rear passenger doors while the bus is in motion, a speed sensor shall be integrated with the door controls to prevent the mid/rear doors from being enabled or opened unless the bus speed is less than 2 mph.

To preclude movement of the bus, an accelerator interlock shall lock the accelerator in the closed position, and a brake interlock shall engage the service brake system to stop movement of the bus when the driver's door control is moved to a mid/rear door enable or open position, or a mid

or rear door panel is opened more than 3 in. from the fully closed position (as measured at the leading edge of the door panel).The interlock engagement shall bring the bus to a smooth stop and shall be capable of holding a fully loaded bus on a 6 percent grade, with the engine at idle and the transmission in gear, until the interlocks are released. These interlock functions shall be active whenever the vehicle master run switch is in any run position.

All door systems employing brake and accelerator interlocks shall be supplied with supporting failure mode effects analysis (FEMA) documentation, which demonstrates that failure modes are of a failsafe type, thereby never allowing the possibility of release of interlock while an interlocked door is in an unsecured condition, unless the door master switch has been actuated to intentionally release the interlocks.

DEFAULT

Non-adjustable brake interlock regulator.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

DEFAULT

No requirements for accelerator and brake interlocks whenever front doors are open.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 36. Pneumatic System

TS 36.1 General

DEFAULT

The bus air system shall operate the air-powered accessories and the braking system with reserve capacity. New buses shall not leak down more than 5psi over a 15-minute period of time as indicated on the dash gauge.

Provision shall be made to apply shop air to the bus air systems. A quick disconnect fitting shall be easily accessible and located in the engine compartment and near the front bumper area for towing. Retained caps shall be installed to protect fitting against dirt and moisture when not in use. Air for the compressor shall be filtered. The air system shall be protected per FMVSS 121.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 36.2 Air Compressor

DEFAULT

The engine-driven air compressor shall be sized to charge the air system from 40psi to the governor cut-off pressure in less than 4 minutes while not exceeding the fast idle speed setting of the engine.
Base Bus – Cummins 30.4 CFM Air Compressor

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 36.3 Air Lines and Fittings

Air lines, except necessary flexible lines, shall conform to the installation and material requirements of SAE Standard J1149 for copper tubing with standard, brass, flared or ball sleeve fittings, or SAE Standard J844 for nylon tubing if not subject to temperatures over 200 °F. The air on the delivery side of the compressor where it enters nylon housing shall not be above the maximum limits as stated in SAE J844. Nylon tubing shall be installed in accordance with the following color-coding standards:

DEFAULT

- **Green:** Indicates primary brakes and supply.
- **Red:** Indicates secondary brakes.
- **Brown:** Indicates parking brake.
- **Yellow:** Indicates compressor governor signal.
- **Black:** Indicates accessories.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 36.4 Air Reservoirs

DEFAULT

All air reservoirs shall meet the requirements of FMVSS Standard 121 and SAE Standard J10 and shall be equipped with drain plugs and guarded or flush type drain valves. Major structural members shall protect these valves and any automatic moisture ejector valves from road hazards. Reservoirs shall be sloped toward the drain valve. All air reservoirs shall have drain valves that discharge below floor level with lines routed to eliminate the possibility of water traps and/or freezing in the drain line.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 36.5 Air System Dryer

An air dryer shall prevent accumulation of moisture and oil in the air system. The air dryer system shall include one or more replaceable desiccant cartridges.

DEFAULT

No requirements for additional oil separator provision.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

ELECTRICAL, ELECTRONIC AND DATA COMMUNICATION SYSTEMS

TS 37. Overview

The electrical system will consist of vehicle battery systems and components that generate, distribute and store power throughout the vehicle. (e.g., generator, voltage regulator, wiring, relays and connectors).

Electronic devices are individual systems and components that process and store data, integrate electronic information or perform other specific functions.

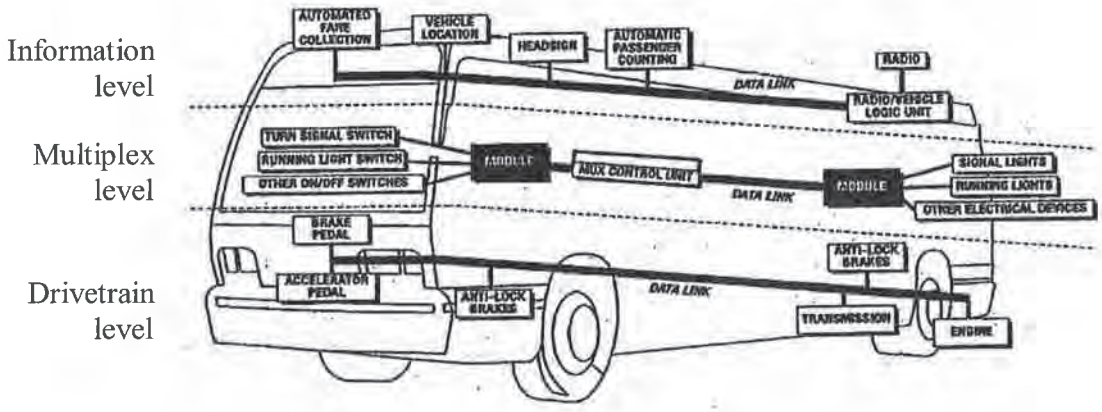
The data communication system consists of the bi-directional communications networks that electronic device s use to share data with other electronic devices and systems. Communication networks are essential to integrating electronic functions, both onboard the vehicle and off.

Information level systems that require vehicle information for their operations or provide information shall adhere to J1939 data standard.

Data communications systems are divided into three level store the use of multiple data networks:

- **Powertrain level:** Components related to the powertrain, including the propulsion system components (engine, transmission and hybrid units) and anti-lock braking system (ABS), which may include traction control. At a minimum, powertrain components consisting of the engine, transmission, retarder, ASR and anti-lock braking systems shall be powered by a dedicated and isolated ignition supply voltage to ensure data communication between components exists when the vehicle ignition is switched to the "on" position.
- **Information level:** Components whose primary function is the collection, control or display of data that is not necessary to the safe drivability of the vehicle (i.e., the vehicle will continue to operate when those functions are inoperable). These components typically consist of those required for automatic vehicle location (AVL) systems, destination signs, fareboxes, passenger counters, radio systems, automated voice and signage systems, video surveillance and similar components.
- **Multiplex level:** Electrical or electronic devices controlled through input/output signals such as discrete, analog and serial data information (i.e., on/off switch inputs, relay or relay control outputs). Multiplexing is used to control components not typically found on the drivetrain or information levels, such as lights; wheelchair lifts; doors; heating, ventilation and air conditioning (HVAC) systems (if applicable); and gatewaydevices.

FIGURE 4
Data Communications Systems Levels



TS 37.1 Modular Design

DEFAULT

Design of the electrical, electronic and data communication systems shall be modular so that each electronic device, apparatus panel, or wiring bundle is easily separable from its interconnect by means of connectors.

Power plant wiring shall be an independent wiring harness. Replacement of the engine compartment wiring harness (es) shall not require pulling wires through any bulkhead or removing any terminals from the wires.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 38. Environmental and Mounting Requirements

DEFAULT

The electrical system and its electronic components shall be capable of operating in the area of the vehicle in which they will be installed, asrecommendedinSAEJ1455.

Electrical and electronic equipment shall not be located in an environment that will reduce the performance or shorten the life of the component or electrical system when operating within the design operating profile. As a recommendation, no vehicle component shall generate, or be affected by, electromagnetic interference or radio-frequency interference (EMI/RFI) that can disturb the performance of electrical/electronic equipment as defined in SAEJ1113and UNECE Council Directive 95/54(R10).

The Agency shall follow recommendations from bus manufacturers and subsystem suppliers regarding methods to prevent damage from voltage spikes generated from welding, jumpstarts, shorts, etc.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 38.1 Hardware Mounting

DEFAULT

The mounting of the hardware shall not be used to provide the sole source ground, and all hardware shall be isolated from potential EMI/RFI, as referenced in SAE J1113.

All electrical/electronic hardware mounted in the interior of the vehicle shall be in accessible to passengers and hidden from view unless intended to be viewed. The hardware shall be mounted in such a manner as to protect it from splash or spray.

All electrical/electronic hardware mounted on the exterior of the vehicle that is not designed to be installed in an exposed environment shall be mounted in a sealed enclosure.

All electrical/electronic hardware and its mounting shall comply with the shock and vibration requirements of SAEJ1455.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 39. General Electrical Requirements

TS 39.1 Batteries

TS 39.1.1 Low-Voltage Batteries (24V)

DEFAULT

Two 8D Maintenance-Free Batteries

Each battery shall have a purchase date no more than 120 days from date of release, and shall be fully maintained prior to shipment to the Agency. Battery compartment must be well ventilated to prevent hydrogen build up while protecting the compartment from road spray, water intrusion and de-icing chemicals.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

Same Size Terminal Ends

Positive and negative terminal ends shall be the same size.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 39.1.2 Battery Cables

The battery terminal ends and cable ends shall be color-coded with red for the primary positive, black for negative and another color for any intermediate voltage cables. Positive and negative battery cables shall not cross each other if at all possible, shall be flexible and shall be

sufficiently long to reach the batteries with the tray in the extended position without stretching or pulling on any connection and shall not lie directly onto pof the batteries. Except as interrupted by the master battery switch, battery and starter wiring shall be continuous cables with connections secured by bolted terminals and shall conform to specification requirements of SAE Standard J1127–Type SGR, SGT, SGX or GXL and SAE Recommended Practice J541,with 2100 strand 4/0 cable or greater recommended.

DEFAULT

Color code each voltage.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 39.1.3 JumpStart

DEFAULT

Jump-Start Connector

A jump-start connector, red for 24V and blue for 12V, shall be provided in the engine compartment, equipped with dust cap and adequately protected from moisture, dirt and debris.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 39.1.4 Battery Compartment

DEFAULT

The battery compartment shall prevent accumulation of snow, ice and debris on top of the batteries and shall be vented and self-draining. It shall be accessible only from the outside of the vehicle. All components within the battery compartment, and the compartment itself, shall be protected from damage or corrosion from the electrolyte. The inside surface of the battery compartment's access doors hall be electrically insulated, as required, to prevent the battery terminals from shorting on the door if the door is damaged in an accident or if a battery comes loose. The battery compartment temperature should not exceed manufacturers' specification.

The vehicle shall be equipped with a12VDC and 24VDC quick disconnect switch (es). The battery compartment door shall conveniently accommodate operation of the12VDC and 24VDC quick disconnect switch (es).

The battery quick disconnect access door shall be identified with a decal. The decal size shall not be less than3.5 × 5in. (8.89 × 12.7cm).

The battery hold-down bracket shall be constructed of a nonconductive and corrosion-resistant material (plastic or fiberglass).

This access door shall not require any special locking devices to gain access to the switch, and it shall be accessible without removing or lifting the panel. The door shall be flush-fitting and incorporate a spring tensioner or equal to retain the door in a closed position when not in use.

The batteries shall be securely mounted on a stainless steel or equivalent tray that can accommodate the size and weight of the batteries. The battery tray, if applicable, shall pull out easily and properly support the batteries while they are being serviced. The tray shall allow each battery cell to be easily serviced. A locking device shall retain the battery tray to the stowed position.

If not located in the engine compartment, the same fire-resistant properties must apply to the battery compartment. No sparking devices should be located within the battery box.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 39.1.5 Auxiliary Electronic Power Supply

DEFAULT

If required, gel-pack, or any form of sealed (non-venting) batteries used for auxiliary power are allowed to be mounted on the interior of the vehicle if they are contained in an enclosed, non-air tight compartment and accessible only to maintenance personnel. This compartment shall contain a warning label prohibiting the use of lead-acid batteries.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 39.1.6 Master Battery Switch

DEFAULT

The location of the master battery switch shall be clearly identified on the exterior access panel, be accessible in less than10 seconds for deactivation and prevent corrosion from fumes and battery acid when the batteries are washed of for are in normal service.

Turning the master switch off with the power plant operating, during an emergency, shall shut off the engine and shall not damage any component of the electrical system. The master switch shall be capable of carrying and interrupting the total circuit load.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

DEFAULT

Single Switch

The batteries shall be equipped with a single switch for disconnecting both12V and 24Vpower.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 39.1.7 Low-Voltage Generation and Distribution

DEFAULT

The low-voltage generating systems shall maintain the charge on fully charged batteries, except when the vehicle is at standard idle to allow-voltage generator load exceeding 70 percent of the low-voltage generator name plate rating.

Voltage monitoring and over-voltage output protection (recommended at 32V) shall be provided.

Dedicated power and ground shall be provided as specified by the component or system manufacturer. Cabling to the equipment must be sized to supply the current requirements with no greater than a 5 percent volt drop across the length of the cable.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 39.1.8 Circuit Protection

DEFAULT

All branch circuits, except battery-to-starting motor and battery-to-generator/alternator circuits, shall be protected by current-limiting devices such as circuit breakers, fuses or solid-state devices sized to the requirements of the circuit. Electronic circuit protection for the cranking motor shall be provided to prevent engaging of the motor for more than 30 seconds at a time to prevent overheating. The circuit breaker fuses shall be easily accessible for authorized personnel. Fuses shall be used only where it can be demonstrated that circuit breakers are not practicable. This requirement applies to in-line fuses supplied by either the Contractor or a supplier. Fuse holders shall be constructed to be rugged and waterproof. All manual reset circuit breakers critical to the operation of the bus shall be mounted in a location convenient to the Agency mechanic with visible indication of open circuits. The Agency shall consider the application of automatic reset circuit breakers on a case-by-case basis. The Contractor shall show all in-line fuses in the final harness drawings. Any manually resettable circuit breakers shall provide a visible indication of open circuits. Any manually resettable circuit breaker s shall provide a visible indication of open circuits.

Circuit breakers or fuses shall be sized to a minimum of 15 percent larger than the total circuit load. The current rating for the wire used for each circuit must exceed the size of the circuit protection being used.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 39.2 Grounds

DEFAULT

The battery shall be grounded to the vehicle chassis/frame at one location only, as close to the batteries as possible. When using a chassis ground system, the chassis hall be grounded to the frame in multiple locations, evenly distributed throughout the vehicle to eliminate ground loops. No more than /spade terminal connections shall be made per ground stud with spacing between studs ensuring conductivity and serviceability. Electronic equipment requiring an isolated ground of the battery (i.e., electronic ground) shall not be grounded through the chassis.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 39.3 Low Voltage/Low Current Wiring and Terminals

DEFAULT

All power and ground wiring shall conform to specification requirements of SAE Recommended Practice J1127, J1128 and J1292.Double insulations hall be maintained as close to the junction box, electrical compartment or terminals as possible. The requirement for double insulations hall be met by wrapping the harness with plastic electrical tape or by sheathing all wires and harnesses with non-conductive, rigid or flexible conduit.

Wiring shall be grouped, numbered and/or color-coded. Wiring harnesses shall not contain wires of different voltage classes unless all wires within the harness are insulated for the highest voltage presenting the harness. Kinking, grounding at multiple points, stretching, and exceeding minimum bend radius shall be prevented.

Strain-relief fittings shall be provided at all points where wiring enters electrical compartments. Grommets or other protective material shall be installed at points where wiring penetrates metal structures outside of electrical enclosures. Wiring supports shall be protective and non-conductive at areas of wire contact and shall not be damaged by heat, water, solvents or chafing.

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

All wiring harnesses over 5 ft. long and containing at least five wires shall include 10 percent (minimum one wire) excess wires for spares. This requirement for spare wires does not apply to datalinks and communication cables. Wiring harness length shall allow end terminals to be replaced twice without pulling, stretching or replacing the wire. Terminals shall be crimped to the wiring according to the connector manufacturer's recommendations for techniques and tools. All cable connectors shall be locking type, keyed and sealed, unless enclosed in water tight cabinets or vehicle interior. Pins shall be removable, crimp contact type, of the correct size and rating for the wire being terminated. Unused pin positions shall be sealed with sealing plugs. Adjacent connectors shall use either different inserts or different insert orientations to prevent incorrect connections.

Terminals shall be crimped, corrosion-resistant and full ring type or interlocking lugs with insulating ferrules. When using pressure type screw terminal strips, only stranded wire shall be used. Insulation clearance shall ensure that wires have a minimum of "visible clearance" and a maximum of two times the conductor diameter or1/16 in., whichever is less. When using shielded or coaxial cable, upon stripping of the insulation, the metallic braid shall be free from frayed strands that can penetrate the insulation of the inner wires.

Ultra-sonic and T-splices may be used with 8AWG or smaller wire. When a T-splice is used, it shall meet these additional requirements:

- It shall include a mechanical clamp in addition to solder on the splice.
- The wire shall support no mechanical load in the area of the splice.
- The wire shall be supported to prevent flexing.

All splicing shall be staggered in the harness so that no two splices are positioned in the same location within the harness.

Wiring located in the engine compartment shall be routed away from high-heatsourcesorshieldedand/orinsulatedfromtemperaturesexceedingthewiringandconnector operating requirements.

The instrument panel and wiring shall be easily accessible for service from the driver's seat or top of the panel. The instrument panel shall be separately removable and replaceable without damaging the instrument panel or gauges. Wiring shall have sufficient length and be routed to permit service without stretching or chafing the wires.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 39.4 Electrical Components

DEFAULT

All electrical components, including switches, relays, flashers and circuit breakers, shall be heavy-duty designs with either a successful history of application in heavy-duty vehicles or design specifications for an equivalent environment.

All electric motors shall be heavy-duty brushless type where practical, and have a continuous duty rating of no less than40,000hours (except cranking motors, washer pumps, auxiliary heater pumps, defroster and wiper motors). All electric motors shall be easily accessible for servicing.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 39.5 Electrical Compartments

DEFAULT

All relays, controllers, flashers, circuit breakers and other electrical components shall be mounted in easily accessible electrical compartments. All compartments exposed to the outside environment shall be corrosion-resistant and sealed. The components and their functions in each electrical compartment shall be identified and their location permanently recorded on a drawing attached to the inside of the access panel or door. The drawing shall be protected from oil, grease, fuel and abrasion.

The front compartment shall be completely service able from the driver's seat, vestibule or from the outside. "Rear start and run" controls shall be mounted in an accessible location in the engine compartment and shall be protected from the environment.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 40. General Electronic Requirements

DEFAULT

If an electronic component has an internal real-time clock, it shall provide its own battery backup to monitor time when battery power is disconnected, and/or it may be updated by a network component. If an electronic component has an hour meter, it shall record accumulated service time without relying on battery backup.

All electronic component suppliers shall ensure that their equipment is self-protecting in the event of shorts in the cabling, and also in over-voltage (over 32V DC on a 24V DC nominal voltage rating with a maximum of 50V DC) and reverse polarity conditions. If an electronic component is required to interface with other components, it shall not require external pull-up and/or pull-down resistors. Where this is not possible, the use of a pull-up or pull-down resistor shall be limited as much as possible and easily accessible and labeled.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 40.1 Wiring and Terminals

DEFAULT

Kinking, grounding at multiple points, stretching and reducing the bend radius below the manufacturer's recommended minimum shall not be permitted.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 40.1.1 Discrete I/O(Inputs/Outputs)

DEFAULT

All wiring to I/O devices, either at the harness level or individual wires, shall be labeled, stamped or color-coded in a fashion that allows unique identification at a spacing not exceeding4 in. Wiring for each I/O device shall be bundled together. If the I/O terminals are the same voltages, then jumpers may be used to connect the common nodes of each I/O terminal.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 40.1.2 Shielding

DEFAULT

All wiring that requires shielding shall meet the following minimum requirements. A shield shall be generated by connecting to a ground, which is sourced from a power distribution bus bar or chassis. A shield shall be connected at one location only, typically a tone end of the cable. However, certain standards or special requirements, such as SAE J1939 or RF applications, have separate shielding techniques that also shall be used as applicable.

> **NOTE:** A shield grounded at both end forms a ground loop, which can cause intermittent control or faults.

When using shielded or coaxial cable, upon stripping of the insulation, the metallic braid shall be free from frayed strands, which can penetrate the insulation of the inner wires. To prevent the introduction of noise, the shield shall not be connected to the common side of a logic circuit.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 40.1.3 Communications

DEFAULT

The data network cabling shall be selected and installed according to the selected protocol requirements. The physical layer of all network communication systems shall not be used for any purpose other than communication between the system components, unless provided for in the network specifications.

Communications networks that use power line carriers (e.g., data modulated on a 24V power line) shall meet the most stringent applicable wiring and terminal specifications.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 40.1.4 Radio Frequency (RF)

DEFAULT

RF components, such as radios, video devices, cameras, global positioning systems (GPS), etc., shall use coaxial cable to carry the signal. All RF systems require special design consideration for losses along the cable. Connectors shall be minimized, since each connector and crimp has a loss that will at tribute to attenuation of the signal. Cabling should allow for the removal of antennas or attached electronics without removing the installed cable between them. If this cannot be done, then a conduit of sufficient size shall be provided for ease of attachment of antenna and cable assembly. The corresponding component vendors shall be consulted for proper application of equipment, including installation ofcables.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 40.1.5 Audio

DEFAULT

Cabling used for microphone level and line level signals shall be 22AWG minimum with shielded twisted pair. Cabling used for amplifier level signals shall be18AWG minimum.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 41. Multiplexing

TS 41.1 General

The primary purpose of the multiplexing system is control of components necessary to operate the vehicle. This is accomplished by processing information from input devices and controlling output devices through the use of an internal logic program.

Versatility and future expansion shall be provided for by expandable system architecture. The multiplex system shall be capable of accepting new inputs and outputs thought head edition of new modules and/or the utilization no existing spare inputs and outputs. All like components in the multiplex system shall be modular and interchangeable with self-diagnostic capabilities. The modules shall be easily accessible for troubleshooting electrical failures and performing system maintenance. Multiplex input/output modules shall use solid-state devices to provide extended service life and individual circuit protection.

DEFAULT

Ten percent of the total number of inputs and outputs, or at least one each for each voltage type utilized (0V, 12V, 24V) at each module location shall be designated as spares.
Base Bus-I/O controls G4 System

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment: Reference Deviation

DEFAULT

Ten percent of the total number of inputs and outputs, or at least one each for each voltage type utilized (0V, 12V, 24V) at each module location shall be designated as spares.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment: Reference Deviation

TS 41.2 System Configuration

DEFAULT

Multiplexing may either be distributed or centralized. A distributed system shall process information on multiple control modules within the network. A centralized system shall process the information on a single control module. Either system shall consist of several modules connected to form a control network.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 41.2.1 I/O Signals

DEFAULT

The input/output for the multiplex system may contain four types of electrical signals: discrete, modulating, analogue, serial data.

Discrete signals shall reflect the on/off status of switches, levers, limit switches, lights, etc. Analog signals shall reflect numerical data as represented by a voltage signal (0–12V, 10–24V, etc.)Or current signal (4–20 mA). Both types of analog signals shall represent the status of variable devices such as rheostats, potentiometers, temperature probes, etc. Serial data signals shall reflect ASCII or alphanumeric data used in the communication between other on-board components.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 42. Data Communications

TS 42.1 General

DEFAULT

All data communication networks shall be either in accordance with a nationally recognized interface standard, such as those published by SAE, IEEE or ISO, or shall be published to the Agency with the following minimum information:

- Protocol requirements for all timing issues (bit, byte, packet, inter-packet timing, idle line timing, etc.) packet sizes, error checking and transport (bulk transfer of data to/from the device).
- Data definition requirements that ensure access to diagnostic information and performance characteristics.
- The capability and procedures for uploading new application or configuration data.
- Access to revision level of data, application software and firmware.
- The capability and procedures for uploading new firmware or application software.
- Evidence that applicable data shall be broadcast to the network in an efficient manner such that the overall network integrity is not compromised.

Any electronic vehicle components used on a network shall be conformance tested to the corresponding network standard.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 42.2 Drivetrain Level

DEFAULT

Drivetrain components, consisting of the engine, transmission, retarder, anti-lock braking system and all other related components, shall be integrated and communicate fully with respect to vehicle operation with data using SAE Recommended Communications Protocols such as J1939 and/or J1708/J1587 with forward and backward compatibilities or other open protocols. At a minimum, drivetrain components consisting of the engine, transmission, retarder ASR, and anti-lock braking systems shall be powered by a dedicated and isolated ignition supply voltage to ensure data communication among components exists when the vehicle ignition is switched to the "on" position.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 42.2.1 Diagnostics, Fault Detection and Data Access

DEFAULT

Drive train performance, maintenance and diagnostic data, and other electronic messages shall be formatted and transmitted on the communications networks.

The drivetrain level shall have the ability to record abnormal events in memory and provide diagnostic codes and other information to service personnel. At a minimum, this network level shall provide live/fail status, current hardware serial number, software/data revisions and uninterrupted timing functions.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 42.2.2 Programmability (Software)

DEFAULT

The drivetrain level components shall be programmable by the Agency with limitations as specified by the subsystem Supplier.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 42.3 Multiplex Level

TS 42.3.1 Data Access

DEFAULT

At a minimum, information shall be made available via a communication port on the multiplex system. The location of the communication port shall be easily accessible. A hardware gateway and/or wireless communications system are options if requested by the Agency. The communication port(s) shall be located as specified by the Agency.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 42.3.2 Diagnostics and Fault Detection

The multiplex system shall have a proven method of determining its status (system health and input/output status) and detecting either active (online) or inactive (offline) faults through the use of on-board visual/audible indicators.

In addition to the indicators, the system shall employ an advanced diagnostic and fault detection system, which shall be accessible via either a personal computer or a hand held unit. Either unit shall have the ability to check logic function. The diagnostic data can be incorporated into the information level network or the central data access system.

DEFAULT

No requirement for mock-up board.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 42.3.3 Programmability (Software)

The multiplex system shall have security provisions to protect its software from unwanted changes. This shall be achieved through any or all of the following procedures:

- Password protection
- Limited distribution of the configuration software
- Limited access to the programming tools required to change the software
- Hardware protection that prevents undesired changes to the software

Provisions for programming the multiplex system shall be possible through a PC or laptop. The multiplex system shall have proper revision control to ensure that the hardware and software are identical on each vehicle equipped with the system. Revision control shall be provided by all of the following:

- Hardware component identification where labels are included on all multiplex hardware to identify components
- Hardware series identification where all multiplex hardware displays the current hardware serial number and firmware revision employed by the module
- Software revision identification where all copies of the software in service display the version number.
- A method of determining which version of software is currently in use in the multiplex system

DEFAULT

Revision control labels shall be electronic.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 42.4 Electronic Noise Control

DEFAULT

Electrical and electronic subsystems and components on all buses shall not emit electromagnetic radiation that will interfere with on-board systems, components or equipment, telephone service, radio or TV reception, or violate regulations of the Federal Communications Commission.

Electrical and electronic subsystems on the coaches shall not be affected by external sources of RFI/EMI. This includes, but is not limited to, radio and TV transmission, portable electronic

devices including computers in the vicinity of or onboard the buses, AC or DC power lines and RFI/EMI emissions from other vehicles.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DRIVER PROVISIONS, CONTROLS AND INSTRUMENTATION

TS 43. Driver's Area Controls

TS 43.1 General

DEFAULT

In general when designing the driver's area, it is recommended that SAE J833, "Human Physical Dimensions," be used.

Switches and controls shall be divided into basic groups and assigned to specific areas, in conformance with SAE Recommended Practice J680, Revised 1988, "Location and Operation of Instruments and Controls in Motor Truck Cabs," and be essentially within the hand reach envelope described in SAE Recommended Practice J287, "Driver Hand Control Reach."

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 43.2 Glare

DEFAULT

The driver's work area shall be designed to minimize glare to the extent possible. Objects within and adjacent to this area shall be matte black or dark gray in color wherever possible to reduce the reflection of light onto the windshield. The use of polished metal and light-colored surfaces within and adjacent to the driver's area shall be avoided.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 43.3 Visors/Sun Shades

DEFAULT

Front and Side Sun Shade/Visor

Adjustable sun visor(s) shall be provided for the driver's windshield and the driver's side window. Visors shall be shaped to minimize light leakage between the visor and windshield pillars. Visors shall store out of the way and shall not obstruct airflow from the climate control system or interfere with other equipment, such as the radio handset or the destination control. Deployment of the visors shall not restrict vision of the rearview mirrors. Visor adjustments shall be made easily by hand with positive locking and releasing devices and shall not be subject to damage by over-tightening. Sun visor construction and materials shall be strong enough to resist breakage during adjustments. Visors may be transparent but shall not allow a visible light transmittance in excess of 10 percent. Visors, when deployed, shall be effective in the driver's field of view at angles more than 5 deg. above the horizontal.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 43.4 Driver's Controls

Frequently used controls must be in easily accessible locations. These include the door control, kneel control, windshield wiper/washer controls, ramp, and lift and run switch. Any switches and controls necessary for the safe operation of the bus shall be conveniently located and shall provide for ease of operation. They shall be identifiable by shape, touch and permanent markings. Controls also shall be located so that passengers may not easily tamper with control settings.

All panel-mounted switches and controls shall be marked with easily read identifiers. Graphic symbols shall conform to SAE Recommended Practice J2402, "Road Vehicles – Symbols for Controls, Indicators, and Tell Tales," where available and applicable. Color of switches and controls shall be dark with contrasting typography or symbols.

Mechanical switches and controls shall be replaceable, and the wiring at these controls shall be serviceable from a convenient location. Switches, controls and instruments shall be dust- and water-resistant.

DEFAULT

All switches/controls in the driver's controls area shall be mounted in an angled panel steep enough to discourage drivers from using it as a personal storage area for items like food, drinks, cell phones, etc.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 43.5 Normal Bus Operation Instrumentation and Controls

The following list identifies bus controls used to operate the bus. These controls are either frequently used or critical to the operation of the bus. They shall be located within easy reach of the operator. The operator shall not be required to stand or turn to view or actuate these controls unless specified otherwise.

Systems or components monitored by onboard diagnostics system shall be displayed in clear view of the operator and provide visual and/or audible indicators. The intensity of indicators shall permit easy determination of on/off status in bright sunlight but shall not cause a distraction or visibility problem at night. All indicators shall be illuminated using backlighting.

The indicator panel shall be located in Area 1 or Area 5, within easy view of the operator instrument panel. All indicators shall have a method of momentarily testing their operation. The audible alarm shall be tamper-resistant and shall have an outlet level between 80 and 83 dBA when measured at the location of the operator's ear.

On-board displays visible to the operator shall be limited to indicating the status of those functions described herein that are necessary for the operation of the bus. All other indicators needed for diagnostics and their related interface hardware shall be concealed and protected from unauthorized access. **Table 6**represents instruments and alarms. The intent of the overall physical layout of the indicators shall be in a logical grouping of systems and severity nature of the fault.

Consideration shall be provided for future additions of spare indicators as the capability of onboard diagnostic systems improves. Blank spaces shall contain LEDs.

TABLE 6
Transit Bus Instruments and Alarms

Device	Description	Location	Function	Visual/ Audible
Master run switch	Rotary, four-position detent	Side console	Master control for bus, off, day run, night run and clearance ID lights	
Engine start, front	Approved momentary switch	Side console	Activates engine starter motor	
Engine start, rear	Approved momentary switch	Engine compartment	Activates engine starter motor	

TABLE 6
Transit Bus Instruments and Alarms

Device	Description	Location	Function	Visual/ Audible
Engine run, rear	Three-position toggle switch	Engine compartment	Permits running engine from rear start, normal front run position and off	Amber light
Drive selector	Touch panel switch	Side console	Provides selection of propulsion: forward, reverse and neutral	Gear selection
HVAC	Switch or switches to control HVAC	Side console	Permits selection of passenger ventilation: off, cool, heat, low fan, high fan or full auto with	
Driver's ventilation	Rotary, three-position detent	Side console or dash left wing	Permits supplemental ventilation: fan off, low or high	
Defroster fan	Rotary, three-position detent	Side console or dash left wing	Permits defroster: fan off, low, medium or high	
Defroster temperatur e	Variable position	Side console or dash left wing	Adjusts defroster water flow and temperature	
Windshield wiper	One-variable rotary position operating both wipers	Dash left wing	Variable speed control of left and right windshield wipers	
Windshield washer	Push button	Dash left wing	Activates windshield washers	
Dash panel lights	Rotary rheostat or stepping switch	Side console or dash left wing	Provides adjustment for light intensity in night run position	
Interior lights	Three-position switch	Side console	Selects mode of passenger compartment lighting: off, on, normal	
Fast idle	Two-position switch	Side console	Selects high idle speed of engine	
WC ramp/ kneel enable	Two-position switch[1]	Side console or dash right wing	Permits operation of ramp and kneel operations at each door remote panel	Amber light
Front door ramp/kneel enable	Two-position keyed switch[1]	Front door remote or dash right wing	Permits ramp and kneel activation from front door area, key required[1]	Amber light

TABLE 6
Transit Bus Instruments and Alarms

Device	Description	Location	Function	Visual/ Audible
Front door ramp	Three-position momentary switch	Right side of steering wheel	Permits deploy and stow of front ramp	Red light
Front kneel	Three-position momentary switch	Front door remote	Permits kneeling activation and raise and normal at front door remote location	Amber or red dash indicator; exterior alarm and amber light
Rear door ramp/kneel enable	Two-position keyed switch[1]	Rear door remote	Permits ramp and kneel activation from rear door area; key required[1]	Red light
Rear door ramp	Three-position momentary switch	Rear door remote	Permits deploy and stow of rear ramp	
Rear kneel	Three-position momentary switch	Rear door remote	Permits kneeling activation and raise and normal at rear door remote location	
Silent alarm	Recessed push button, NO and NC contacts momentary	Side console	Activates emergency radio alarm at dispatch and permits covert microphone and/or enables destination sign emergency message	
Video system event switch	Momentary on/off momentary switch with plastic guard	Side console	Triggers event equipment, triggers event light on dash	Amber light
Left remote mirror	Four-position toggle type	Side console	Permits two-axis adjustment of left exterior mirror	
Right remote mirror	Four-position toggle type	Side console	Permits two-axis adjustment of right exterior mirror	
Mirror heater	Switch or temperature activated	Side console	Permits heating of outside mirrors when required	
Passenger door control	Five-position handle type detent or two momentary push buttons	Side console, forward	Permits open/close control of front and rear passenger doors	Red light
Rear door override	Two-position switch in approved location	Side console, forward	Allows driver to override activation of rear door passenger tape switches	

TABLE 6
Transit Bus Instruments and Alarms

Device	Description	Location	Function	Visual/ Audible
Engine shutdown override	Momentary switch with operation protection	Side console	Permits driver to override auto engine shutdown	
Hazard flashers	Two-position switch	Side console or dash right wing	Activates emergency flashers	Two green lights
Fire suppression	Red push button with protective cover	Dash left wing or dash center	Permits driver to override and manually discharge fire suppression system	Red light
Mobile data terminal	Mobile data terminal coach operator interface panel	Above right dash wing	Facilitates driver interaction with communication system and master log-on	LCD display with visual status and text messages
Farebox interface	Farebox coach operator interface panel	Near farebox	Facilitates driver interaction with farebox system	LCD display
Destination sign interface	Destination sign interface panel	In approved location	Facilitates driver interaction with destination sign system, manual entry	LCD display
Turn signals	Momentary push button (two required) raised from other switches	Left foot panel	Activates left and right turn signals	Two green lights and optional audible indicator
PA manual	Momentary push button	In approved location	Permits driver to manually activate public address microphone	
Low-profile microphone	Low-profile discrete mounting	Steering column	Permits driver to make announcements with both hands on the wheel and focusing on road conditions	
High beam	Detented push button	In approved location	Permits driver to toggle between low and high beam	Blue light
Parking brake	Pneumatic PPV	Side console or dash left wing	Permits driver to apply and release parking brake	Red light
Park brake release	Pneumatic PPV	Vertical side of the side consoler dash center	Permits driver to push and hold to release brakes	

TABLE 6
Transit Bus Instruments and Alarms

Device	Description	Location	Function	Visual/ Audible
Hill holder	Two-position momentary switch	Side console	Applies brakes to prevent bus from rolling	
Remote engine speed	Rotary rheostat	Engine compartment	Permits technician to raise and lower engine RPM from engine compartment	
Master door/ interlock	Multi-pole toggle, detented	Out of operator's reach	Permits driver override to disable door and brake/throttle interlock	Red light
Warning interlocks deactivated	Red indicator light	Dash panel center	Illuminates to warn driver that interlocks have been deactivated	Red light
Retarder disable	Multi-pole switch detented	Within reach of operator or approved location	Permits driver override to disable brake retardation/regeneration	Red light
Alarm acknowledge	Push button momentary	Approved location	Permits driver to acknowledge alarm condition	
Rear door passenger sensor disable	Multi-pole toggle, detented	In sign compartment or driver's barrier compartment	Permits driver to override rear door passenger sensing system	
Indicator/ alarm test button	Momentary switch or programming[1]	Dash center panel	Permits driver to activate test of sentry, indicators and audible alarms	All visuals and audibles
Auxiliary power	110 V power receptacle	Approved location	Property to specify what function to supply	
Speedometer	Speedometer, odometer, and diagnostic capability, 5-mile increments	Dash center panel	Visual indication of speed and distance traveled, accumulated vehicle mileage, fault condition display	Visual
Air pressure gauge	Primary and secondary, 5 psi increments	Dash center panel	Visual indication of primary and secondary air systems	Red light and buzzer

TABLE 6
Transit Bus Instruments and Alarms

Device	Description	Location	Function	Visual/ Audible
Fire detection	Coach operator display	Property specific or dash center	Indication of fire detection activation by zone/location	Buzzer and red light
Door obstruction	Sensing of door obstruction	Dash center	Indication of rear door sensitive edge activation	Red light and buzzer
Door ajar	Door not properly closed	Property specific or dash center	Indication of rear door not properly closed	Buzzer or alarm and red light
Low system air pressure	Sensing low primary and secondary air tank pressure	Dash center	Indication of low air system pressure	Buzzer and red light
Methane detection function	Detection of system integrity	Property specific or dash center	Detects system failure	No start condition, amber light
Methane detection	Indication of 20% LED emergency light (LEL)	Property specific or dash center	Detects levels of methane	Flashing red at 20% LEL
Methane detection	Indication of 50% LEL	Property specific or dash center	Detects levels of methane	Solid red at 50% LEL
Engine coolant indicator	Low coolant indicator may be supplied as audible alert and visual and/or text message	Within driver's sight	Detects low coolant condition	Amber light
Hot engine indicator	Coolant temperature indicator may be supplied as audible alert and visual and/or text message	Within driver's sight	Detects hot engine condition and initiates time delay shutdown	Red light
Low engine oil pressure indicator	Engine oil pressure indicator may be supplied as audible alert and visual and/or text message	Within driver's sight	Detects low engine oil pressure condition and initiates time-delayed shutdown	Red light
ABS indicator	Detects system status	Dash center	Displays system failure	Amber light

TABLE 6
Transit Bus Instruments and Alarms

Device	Description	Location	Function	Visual/ Audible
HVAC indicator	Detects system status	Dash center	Displays system failure	Amber or red light
Charging system indicator (12/24 V)	Detect charging system status	Dash center	Detects no charge condition and optionally detects battery high, low, imbalance, no charge condition, and initiates time-delayed shutdown	Red light flashing or solid based on condition
Bike rack deployed indicator	Detects bike rack position	Dash center	Indication of bike rack not being in fully stowed position	Amber or red light
Fuel tank level	Analog gauge, graduated based on fuel type	Dash center	Indication of fuel tank level/pressure	
DEF gauge	Level Indicator	Center dash	Displays level of DEF tank and indicates with warning light when low	Red light
Active regeneration	Detects status	Dash center	Indication of electric regeneration	Amber or red light

1. Indicate area by drawing. Break up switch control from indicator lights.

TABLE 6 (ALTERNATIVE,)
Transit Bus Instruments and Alarms

Device	Description	Location	Function	Visual/ Audible
[Contractor to provide]				

TS 43.6 Driver Foot Controls

DEFAULT

Accelerator and brake pedals shall be designed for ankle motion. Foot surfaces of the pedals shall be faced with wear-resistant, nonskid, replaceable material.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 43.6.1 Pedal Angle

DEFAULT

The vertical angle of the accelerator and brake pedals shall be determined from a horizontal plane regardless of the slope of the cab floor. The accelerator and brake pedals shall be positioned at an angle of 37 to 50deg at the point of initiation of contact and extend downward to an angle of 10 to 18deg at full throttle.

The location of the brake and accelerator pedals shall be determined by the manufacturer, based on space needs, visibility, lower edge of windshield and vertical H-point.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 43.6.2 Pedal Dimensions and Position

DEFAULT

The floor-mounted accelerator pedal shall be 10 to 12 in. long and 3 to 4 in. wide. Clearance around the pedal must allow for no interference precluding operation.

The accelerator and brake pedals shall be positioned such that the spacing between them, measured at the heel of the pedals, is between 1 and 2 in. Both pedals should be located approximately on the same plane coincident to the surface of the pedals.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 43.7 Brake and Accelerator Pedals

DEFAULT

Brake Pedal

Non-adjustable brake pedal.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 43.8 Driver Foot Switches

Floor-Mounted Foot Control Platform

The angle of the turn signal platform shall be determined from a horizontal plane, regardless of the slope of the cab floor. The turn signal platform shall be angled at a minimum of 10 deg. and a maximum of 37 deg. It shall be located no closer to the seat front than the heel point of the accelerator pedal.

DEFAULT

Turn Signal Controls

Turn signal controls shall be floor-mounted, foot-controlled, water-resistant, heavy-duty, momentary contact switches.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

Foot Switch Control

The control switches for the turn signals shall be mounted on an inclined, floor-mounted stainless steel enclosure or metal plate mounted to an incline integrated into the driver's platform, located to the left of the steering column. The location and design of this enclosure shall be such that foot room for the operator is not impeded. The inclined mounting surface shall be skid-resistant. All other signals, including high beam and public address system, shall be in approved locations.

The foot switches shall be UL-listed, heavy-duty type, of a rugged, corrosion-resistant metal construction. The foot switches for the directionals shall be momentary type, while those for the

PA system and the high beam shall be latching type. The spacing of the switches shall be such that inadvertent simultaneous deflection of switches is prevented.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 44. Driver's Amenities

TS 44.1 Coat Hanger

DEFAULT

Coat Hanger

A suitable hanger shall be installed in a convenient, approved location for the driver's coat.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 44.2 Drink Holder

DEFAULT

No drink holder.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 44.3 Storage Box

DEFAULT

Storage Box

An enclosed driver storage area shall be provided with a positive latching door and/or lock. 44"H x 22.5"W x 20"D, 2 Doors

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 45. Windshield Wipers and Washers

TS 45.1 Windshield Wipers

The bus shall be equipped with a windshield wiper for each half of the windshield. At 60 mph, no more than 10 percent of the wiped area shall be lost due to windshield wiper lift. For two-piece windshields, both wipers shall park along the center edges of the windshield glass. For single-piece windshields, wipers shall park along the bottom edge of the windshield. Windshield wiper motors and mechanisms shall be easily accessible for repairs or service. The fastener that secures the wiper arm to the drive mechanism shall be corrosion-resistant.

DEFAULT

Single-control, electric two-speed intermittent wiper.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment: Reference Deviation

DEFAULT

Single control for air-operated system.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 45.2 Windshield Washers

DEFAULT

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

The windshield washer system shall have a minimum 3-gallon reservoir, located for easy refilling from outside the bus. Reservoir pumps, lines and fittings shall be corrosion-resistant and must include a means to determine fluid level.

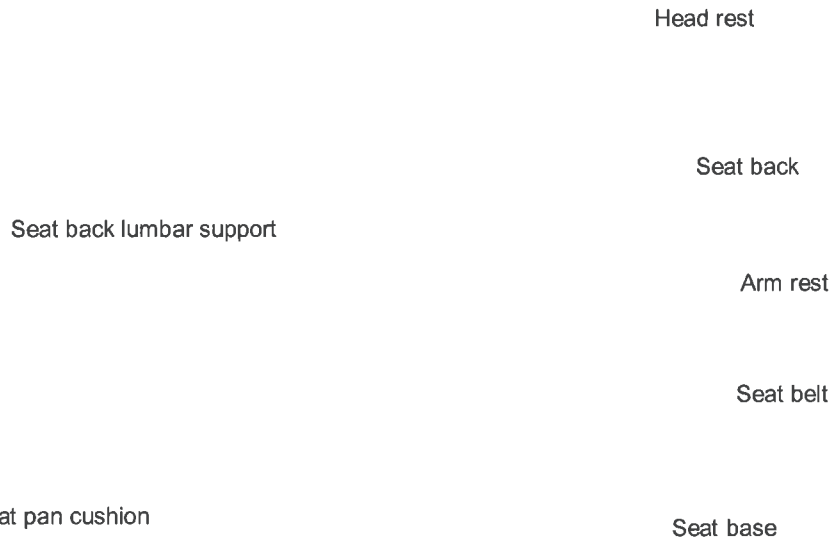
Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 46. Driver's Seat

FIGURE 5
Driver's Seat



DEFAULT
USSC G2A

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 46.1 Dimensions

DEFAULT
The driver's seat shall be comfortable and adjustable so that people ranging in size from a 95th-percentile male to a 5th-percentile female may operate the bus.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.1.1 Seat Pan Cushion Length

DEFAULT

Measurement shall be from the front edge of the seat pan to the rear at its intersection with the seat back. The adjustment of the seat pan length shall be no less than 16.5 in.at its minimum length and no more than 20.5 in.at its maximum length.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

SP 1.1.1 Seat Pan Cushion Height

DEFAULT

Dimensions

Measurement shall be from the cab floor to the top of the level seat at its center midpoint. The seat shall adjust in height from a minimum of14 in., with a minimum 6 in. vertical range of adjustment.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.1.2 Seat Pan Cushion Slope

DEFAULT

Measurement is the slope of the plane created by connecting the two high points of the seat, one at the rear of the seat at its intersection with the seat back and the other at the front of the seat just before it waterfalls downward at the edge. The slope can be measured using an inclinometer and shall be stated in degrees of incline relative to the horizontal plane (0 deg). The seat pan shall adjust in its slope from no less than plus 12 deg (rearward "bucket seat" incline) to no less than minus 5 deg (forward slope).

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.1.3 Seat Base Fore/Aft Adjustment

DEFAULT

Measurement is the horizontal distance from the heel point to the front edge of the seat. The minimum and maximum distances shall be measured from the front edge of the seat when it is adjusted to its minimum seat pan depth (approximately 15 in.). On all low-floor buses, the seat base shall travel horizontally a minimum of 9 in. It shall adjust no closer to the heel point than6 in. On all high-floor buses, the seat base shall travel a minimum of9 in. and adjust no closer to the heel point than 6 in.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.1.4 Seat Pan Cushion Width

DEFAULT

Measurement is the horizontal distance across the seat cushion. The seat pan cushion shall be 17 to 21 in. across at the front edge of the seat cushion and 20 to 23 in. across at the side bolsters.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.1.5 Seat Suspension

DEFAULT

The driver's seat shall be appropriately dampened to support a minimum weight of 380 lbs. The suspension shall be capable of dampening adjustment in both directions.

Rubber bumpers shall be provided to prevent metal-to-metal contact.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.1.6 Seat Back

DEFAULT

Width

Measurement is the distance between the outermost points of the front of the seat back, at or near its midpoint in height. The seat back width shall be no less than 19 in. Seat back will include dual recliner gears on both sides of the seat.

Height

Standard height seat back.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.1.7 Headrests

DEFAULT

Adjustable headrest.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.1.8 Seat Back Lumbar Support

DEFAULT

Measurement is from the bottom of the seat back at its intersection with the seat pan to the top of the lumbar cushioning. The seat back shall provide adjustable-depth lumbar back support with three individual operating lumbar cells within a minimum range of 7 to 11 in.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.1.9 Seat Back Angle Adjustment

DEFAULT

The seat back angle shall be measured relative to a level seat pan, where 90 deg is the upright

position and 90 deg-plus represents the amount of recline.

The seat back shall adjust in angle from a minimum of no more than 90 deg (upright) to at least 105 deg (reclined), with infinite adjustment in between.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.2 Seat Belt

The belt assembly should be an auto-locking retractor (ALR).All seat belts should be stored in automatic retractors. The belts shall be mounted to the seat frame so that the driver may adjust the seat without resetting the seat belt.

The seat and seatbelt assemblies as installed in the bus shall withstand static horizontal forces as required in FMVSS 207 and 210.

DEFAULT

Orange three-point seatbelt webbing.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

Lap Belt Length

DEFAULT

72 in.

The lap belt assembly shall be a minimum of 72 in. in length.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.3 Adjustable Armrest

DEFAULT

No armrests.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.4 Seat Control Locations

DEFAULT

While seated, the driver shall be able to make seat adjustments by hand without complexity, excessive effort or being pinched. Adjustment mechanisms shall hold the adjustments and shall not be subject to inadvertent changes.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.5 Seat Structure and Materials

Cushions

Cushions shall be fully padded with at least 3 in. of materials in the seating areas at the bottom and back.

Cushion Materials

DEFAULT

Open-cell polyurethane (FMVSS 302).

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.6 Pedestal

DEFAULT

Powder-coated steel.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.7 Mirrors

TS 46.7.1 Exterior Mirrors

The bus shall be equipped with corrosion-resistant, outside rearview mirrors mounted with stable

supports to minimize vibration. Mirrors shall be firmly attached to the bus to minimize vibration and to prevent loss of adjustment with a breakaway mounting system. Mirrors shall permit the driver to view the roadway along the sides of the bus, including the rear wheels. Mirrors should be positioned to prevent blind spots.

Mirrors shall retract or fold sufficiently to allow bus washing operations but avoid contact with windshield.

DEFAULT

Exterior mirrors shall be installed without a breakaway mounting system.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

DEFAULT

Flat Mirrors on Both Sides

The bus shall be equipped with two flat outside mirrors, each with not less than 50 sq. in. of reflective surface. The mirrors shall be located so as to provide the driver a view to the rear along both sides of the bus and shall be adjustable both in the horizontal and vertical directions to view the rearward scene. The roadside rearview mirror shall be positioned so that the driver's line of sight is not obstructed.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

Curbside Mirrors

The curbside rearview mirror shall be mounted so that its lower edge is no less than 80 in. above the street surface. A lower mount may be required due to mirror configuration requests.

DEFAULT

Remote Adjustment of Curbside Mirror

The driver shall be able to adjust the curbside mirror remotely while seated in the driving position. The control for remote positioning of the mirror shall be a single switch or device.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

Street-Side Mirrors

DEFAULT

Standard mirror, not heated, no remote adjustment.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 46.7.2 Interior Mirrors

DEFAULT

Mirrors shall be provided for the driver to observe passengers throughout the bus without leaving the seat and without shoulder movement. The driver shall be able to observe passengers in the front/entrance and rear/exit areas (if applicable), anywhere in the aisle, and in the rear seats.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

WINDOWS

TS 47. General

Use with 30ft length: A minimum of 6000 sq. in. of window area, including operator and door windows, shall be required on each side of the standard configuration bus.

Use with 35ft length: A minimum of 8000 sq. in. of window area, including operator and door windows, shall be required on each side of the standard configuration bus.

Use with 40ft length: A minimum of 10,000 sq. in. of window area, including operator and door windows, shall be required on each side of the standard configuration bus.

TS 48. Windshield

DEFAULT

The windshield shall permit an operator's field of view as referenced in SAE Recommended Practice J1050.The vertically upward view shall be a minimum of 14deg, measured above the horizontal and excluding any shaded band. The vertically downward view shall permit detection of an object 3½ft high no more than 2 ft. in front of the bus. The horizontal view shall be a minimum of 90 deg above the line of sight. Any binocular obscuration due to a center divider may be ignored when determining the 90deg requirement, provided that the divider does not exceed a 3deg angle in the operator's field of view. Windshield pillars shall not exceed 10 deg of binocular obscuration. The windshield shall be designed and installed to minimize external glare as well as reflections from inside the bus.

The windshield shall be easily replaceable by removing zip-locks from the windshield retaining moldings. Bonded-in-place windshields shall not be used. Winglets may be bonded.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 48.1 Glazing

The windshield glazing material shall have a ¼ in. nominal thickness laminated safety glass conforming to the requirements of ANSI Z26.1 Test Grouping AS-1 and the recommended practices defined in SAE J673.

DEFAULT

Shaded Band

The upper portion of the windshield above the driver's field of view shall have a dark, shaded band and marked AS-3, with a minimum luminous transmittance of 5 percent when tested in accordance to ASTM D-1003.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

Two-piece windshield.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 49. Driver's Side Window

The driver's side window shall be the sliding type, requiring only the rear half of the sash to latch upon closing, and shall open sufficiently to permit the seated operator to easily adjust the street-side outside rearview mirror. When in an open position, the window shall not rattle or close during braking. This window section shall slide in tracks or channels designed to last the service life of the bus. The operator's side window shall not be bonded in place and shall be easily replaceable. The glazing material shall have a single-density tint.

The driver's view, perpendicular through operator's side window glazing, should extend a minimum of 33 in. (840 mm) to the rear of the heel point on the accelerator, and in any case must accommodate a 95th percentile male operator. The view through the glazing at the front of the assembly should begin not more than 26 in. (560 mm) above the operator's floor to ensure

visibility of an under-mounted convex mirror. Driver's window construction shall maximize ability for full opening of the window.

DEFAULT

The driver's side window glazing material shall have a ¼ in. nominal thickness laminated safety glass conforming to the requirements of ANSI Z26.1-1996 Test Grouping AS-2 and the recommended practices defined in SAE J673.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

The Driver's Side Window glazing would be 1/4" Tempered Safety Glass when Hidden Frame Passenger Windows are chosen. Otherwise with standard frame, it would be the laminated Safety Glass as noted

DEFAULT

Standard Driver's Side Window, Traditional Frame

Agency to choose from the following options:

- Full slider
  - Egress
  - Non-egress
- Top fixed over bottom slider
  - Egress
  - Non-egress

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

Standard window offering will be Full Slider / Non-egress

TS 50. Side Windows

TS 50.1 Configuration

DEFAULT

Side windows shall not be bonded in place, but shall be easily replaceable without disturbing adjacent windows and shall be mounted so that flexing or vibration from engine operation or normal road excitation is not apparent. All aluminum and steel material will be treated to prevent corrosion.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 50.2 Emergency Exit (Egress) Configuration

DEFAULT

Minimum Egress

All side windows shall be fixed in position, except as necessary to meet the emergency escape requirements. Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

Default

Standard Passenger Side Window Configurations

- Hidden frame (flush "Euro-look")
- Full fixed

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

DEFAULT

Traditional Frame

Agency to choose from the following options:

- Full fixed
- Openable windows with inward-opening transom panels
- Openable windows with sliding transom panels
- Openable windows with a fixed transom panel and sliding lower panels
- Openable windows with full-height sliding panels

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment: All available as alternative options.

TS 50.3 Configuration

DEFAULT

Fixed Side Windows

All side windows shall be fixed in position, except as necessary to meet the emergency escape requirements.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 50.4 Materials

Safety Glass Glazing Panels

Side windows glazing material shall have a minimum of 3/16 in. nominal thickness tempered safety glass. The material shall conform to the requirements of ANSI Z26.1-1996 Test Grouping 2 and the recommended practices defined in SAE J673.

DEFAULT

Windows on the bus sides and in the rear door shall be tinted a neutral color, complementary to the bus exterior. The maximum solar energy transmittance shall not exceed 37 percent, as measured by ASTM E-424. Luminous transmittance shall be measured by ASTM D-1003. Windows over the destination signs shall not be tinted.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT (LIGHT)

13 percent luminous transmittance.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT (DARK)

13 percent luminous transmittance.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

Safety Glass Glazing Panels

Side windows glazing material shall have a minimum of 3/16 in. nominal thickness tempered safety glass. The material shall conform to the requirements of ANSI Z26.1 Test Grouping 2 and the recommended practices defined in SAE J673.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

NOTE: All glass treatments must be permanent, within the glass and/or in the center membrane. Surface films are not permitted.

SHGC and light transmission performance shall be defined by the National Fenestration Rating Council.

TS 50.5 Rear Window

DEFAULT

No requirement for rear window.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

HEATING, VENTILATING AND AIR CONDITIONING

TS 51. Capacity and Performance

The HVAC climate control system shall be capable of controlling the temperature and maintaining the humidity levels of the interior of the bus as defined in the following paragraphs.

DEFAULT

Rear Mounted Thermo-King X430 407C

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

Allow Either Roof- or Rear-Mounted HVAC Unit

The HVAC unit may either be roof or rear-mounted. Note that a rear-mounted unit will preclude a rear window and that the term "roof-mounted unit" includes units mounted on top of or beneath the roof surface.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

Capacity and Performance Requirements

The air-conditioning portion of the HVAC system shall be capable of reducing the passenger compartment temperature from 115 to 95 °F in less than 20 minutes after engine start-up. Engine temperature shall be within the normal operating range at the time of start-up of the cool-down test, and the engine speed shall be limited to fast idle, which may be activated by a driver-controlled device. During the cool-down period, the refrigerant pressure shall not exceed safe high-side pressures, and the condenser discharge air temperature, measured 6 in. from the surface of the coil, shall be less than 45 °F above the condenser inlet air temperature. The appropriate solar load as recommended in the APTA "Recommended Instrumentation and Performance Testing for Transit Bus Air Conditioning System," representing 4 p.m. on August 21, shall be used. There shall be no passengers on board, and the doors and windows shall be closed.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 52. Controls and Temperature Uniformity

The HVAC system excluding the driver's heater/defroster shall be centrally controlled with an advanced electronic/diagnostic control system with provisions for extracting/reading data. The system shall be compliant with J1939 Communication Protocol for receiving and broadcasting of data.

Hot engine coolant water shall be delivered to the HVAC system driver's defroster/heater and other heater cores by means of an auxiliary coolant pump, sized for the required flow, which is brushless and sealless having a minimum maintenance-free service life for both the brushless motor and the pump of at least 40,000 hours at full power.

DEFAULT

Manual Mode Selection of Climate Control System

After manual selection and/or activation of climate control system operation mode, all interior climate control system requirements for the selected mode shall be attained automatically to within ±2 °F of specified temperature control set point.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

DEFAULT

Single Control Set point at 70 °F

The temperature control set point for the system shall be 70 °F.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 52.1 Auxiliary Heater

DEFAULT

No auxiliary heater.

TS 53. Air Flow

TS 53.1 Passenger Area

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

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

The climate control blower motors and fan shall be designed such that their operation complies with the interior noise level requirements.

DEFAULT

No "Fresh Air" Requirements

To be used by agencies that have an operating profile where the door opening cycle results in effectively providing an adequate "fresh air" mixture.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 53.2 Driver's Area

DEFAULT

The bus interior climate control system shall deliver at least 100 cfm of air to the driver's area when operating in the ventilating and cooling modes. Adjustable nozzles shall permit variable distribution or shutdown of the airflow. Airflow in the heating mode shall be reduced proportionally to the reduction of airflow into the passenger area. The windshield defroster unit shall meet the requirements of SAE Recommended Practice J382, "Windshield Defrosting Systems Performance Requirements," and shall have the capability of diverting heated air to the driver's feet and legs. The defroster or interior climate control system shall maintain visibility through the driver's side window.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 53.3 Controls for the Climate Control System (CCS)

DEFAULT

The controls for the driver's compartment for heating, ventilation and cooling systems shall be integrated and shall meet the following requirements:

- The heat/defrost system fan shall be controlled by a separate switch that has an "off" position and at least two positions for speed control. All switches and controls shall preclude the possibility of clothing becoming entangled, and shields shall be provided, if required. If the fans are approved by the Agency, an "on/off" switch shall be located to the right of or near the main defroster switch.
- A manually operated control valve shall control the coolant flow through the heater core.
- If a cable-operated manual control valve is used, then the cable length shall be kept to a minimum to reduce cable seizing. Heater water control valves shall be "positive" type, closed or open. The method of operating remote valves shall require the concurrence of the Agency project manager.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 53.4 Driver's Compartment Requirements

DEFAULT

A separate heating, ventilation and defroster system for the driver's area shall be provided and shall be controlled by the driver. The system shall meet the following requirements:

- The heater and defroster system shall provide heating for the driver and heated air to completely defrost and defog the windshield, driver's side window, and the front door glasses in all operating conditions. Fan(s) shall be able to draw air from the bus body interior and/or exterior through a control device and pass it through the heater core to the defroster system and over the driver's feet. A minimum capacity of 100 cfm shall be provided. The driver shall have complete control of the heat and fresh airflow for the driver's area.
- The defroster supply outlets shall be located at the lower edge of the windshield. These outlets shall be durable and shall be free of sharp edges that can catch clothes during normal daily cleaning. The system shall be such that foreign objects such as coins or tickets cannot fall into the defroster air outlets. Adjustable ball vents or louvers shall be provided at the left of the driver's position to allow direction of air onto the side windows.

A ventilation system shall be provided to ensure driver comfort and shall be capable of providing fresh air in both the foot and head areas. Vents shall be controllable by the driver from the normal driving position. Decals shall be provided, indicating "operating instructions" and "open"

and "closed" positions. When closed, vents shall be sealed to prevent the migration of water or air into the bus.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 53.5 Driver's Cooling

DEFAULT

No dedicated evaporator.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 54. Air Filtration

Air shall be filtered before entering the AC system and being discharged into the passenger compartment. The filter shall meet the ANSI/ASHRAE 52.1 requirement for 5 percent or better atmospheric dust spot efficiency, 50 percent weight resistant, and a minimum dust holding capacity of 120 g per 1000 cfm cell. Air filters shall be easily removable for service.

DEFAULT

Cleanable Filters

Air filters shall be cleanable.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 55. Roof Ventilators

Each ventilator shall be easily opened and closed manually. When open with the bus in motion, this ventilator shall provide fresh air inside the bus. The ventilator shall cover an opening area no less than 425 sq. in. and shall be capable of being positioned as a scoop with either the leading or trailing edge open no less than 4 in., or with all four edges raised simultaneously to a height of

no less than 3½ in. An escape hatch shall be incorporated into the roof ventilator. Roof ventilator(s) shall be sealed to prevent entry of water when closed.

DEFAULT

One Roof Ventilator

One ventilator shall be provided in the roof of the bus.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 56. Maintainability

Manually controlled shut-off valves in the refrigerant lines shall allow isolation of the compressor and dehydrator filter for service. To the extent practicable, self-sealing couplings utilizing O-ring seals shall be used to break and sealthe refrigerant lines during removal of major components, such as the refrigerant compressor. Shut-off valves may be provided in lieu of self-sealing couplings. The condenser shall be located to efficiently transfer heat to the atmosphere and shall not ingest air warmed above the ambient temperature by the bus mechanical equipment, or to discharge air into any other system of the bus. The location of the condenser shall preclude its obstruction by wheel splash, road dirt or debris. HVAC components located within 6 in. of floor level shall be constructed to resist damage and corrosion.

DEFAULT

High and low refrigerant pressure electronic gauges to be located in the return air area.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment: The vendor offers a Refrigerant Pressure Display Module in place of gauges.

TS 57. Entrance/Exit Area Heating

DEFAULT

No requirements for entrance/exit area heating.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 58. Floor-Level Heating

TS 58.1 Transit Coach

DEFAULT

No requirements for floor-level heating.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

EXTERIOR PANELS, FINISHES AND EXTERIOR LIGHTING

TS 59. Design

DEFAULT

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

Exterior panels shall be sufficiently stiff to minimize vibration, drumming or flexing while the bus is in service. When panels are lapped, the upper and forward panels shall act as a watershed. However, if entry of moisture into the interior of the vehicle is prevented by other means, then rear cap panels may be lapped otherwise. The windows, hatches and doors shall be able to be sealed. Accumulation of spray and splash generated by the bus's wheels shall be minimized on windows and mirrors.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 59.1 Materials

Body materials shall be selected and the body fabricated to reduce maintenance, extend durability and provide consistency of appearance throughout the service life of the bus. Detailing

shall be kept simple, and add-on devices and trim shall be minimized and integrated into the basic design.

DEFAULT

No requirement for protection against graffiti/vandalism for body material surfaces.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 59.2 Roof-Mounted Equipment

DEFAULT

A non-skid, clearly marked walkway or steps shall be incorporated on the roof to provide access to equipment without damaging any system or bus paneling.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 60. Pedestrian Safety

DEFAULT

Exterior protrusions along the side and front of the bus greater than ½ in. and within 80 in. of the ground shall have a radius no less than the amount of the protrusion. The exterior rearview mirrors, cameras and required lights and reflectors are exempt from the protrusion requirement. Advertising frames shall protrude no more than ⅞ in. from the body surface. Grilles, doors, bumpers and other features on the sides and rear of the bus shall be designed to minimize toeholds or handholds. Exterior protrusions shall not cause a line-of-sight blockage for the driver.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 61. Repair and Replacement

TS 61.1 Side Body Panels

Structural elements supporting exterior body panels shall allow side body panels below the windows to be repaired in lengths not greater than 12.5 ft.

DEFAULT

Standard attachment of side body panels.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 62. Rain Gutters

DEFAULT

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

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 63. License Plate Provisions

DEFAULT

Provisions shall be made to mount standard-size U.S./Canada license plates per SAE J686 on the front and rear of the bus. These provisions shall direct-mount or recess the license plates so that they can be cleaned by automatic bus-washing equipment without being caught by the brushes. The rear license plate provision shall be illuminated per SAE J587.

DEFAULT

No plate or holder provision is required.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 63.1 Rub rails

DEFAULT

No requirement for rub rails.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 64. Fender Skirts

DEFAULT

Features to minimize water spray from the bus in wet conditions shall be included in wheel housing design. Any fender skirts shall be easily replaceable. They shall be flexible if they extend beyond the allowable body width. Wheels and tires shall be removable with the fender skirts in place.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 65. Wheel Covers

DEFAULT

Wheel covers not required.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 65.1 Splash Aprons

DEFAULT

Standard Splash Aprons

Splash aprons, composed of ¼ in. minimum composition or rubberized fabric, shall be installed behind and/or in front of wheels as needed to reduce road splash and to protect underfloor components. The splash aprons shall extend downward to within 6 in. off the road surface at static conditions. Apron widths shall be no less than tire widths. Splash aprons shall be bolted to the bus understructure. Splash aprons and their attachments shall be inherently weaker than the structure to which they are attached. The flexible portions of the splash aprons shall not be included in the road clearance measurements. Splash apron shall be installed as necessary to

protect the wheelchair loading device from road splash. Other splash aprons shall be installed where necessary to protect bus equipment.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 66. Service Compartments and Access Doors

TS 66.1 Access Doors

DEFAULT

Conventional or pantograph 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 and transmission fluid. 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 maintain mechanical integrity and function under normal operations throughout the service life of the bus. They shall close flush with the body surface. All 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 bus washing operations. All access doors shall be retained in the open position by props or counterbalancing with over-center or gas-filled springs with safety props and shall be easily operable by one person. Springs and hinges shall be corrosion resistant. Latch handles shall be flush with, or recessed behind, the body contour and shall be sized to provide an adequate grip for opening. Access doors, when opened, shall not restrict access for servicing other components or systems.

If precluded by design, the manufacturer shall provide door design information specifying how the requirements are met.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 66.2 Access Door Latch/Locks

DEFAULT

Requirement for Latches on Access Doors

Access doors larger than 100 sq. in. in area shall be equipped with corrosion-resistant flush-mounted latches or locks except for coolant and fuel fill access doors. All such access doors that require a tool to open shall be standardized throughout the vehicle and will require a nominal 5/16 in. square male tool to open or lock.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 67. Bumpers

TS 67.1 Location

DEFAULT

Bumpers shall provide impact protection for the front and rear of the bus with the top of the bumper being 27 in., ±2 in., above the ground. Bumper height shall be such that when one bus is parked behind another, a portion of the bumper faces will contact each other.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 67.2 Front Bumper

No part of the bus, including the bumper, shall be damaged as a result of a 5mph impact of the bus at curb weight with a fixed, flat barrier perpendicular to the bus's longitudinal centerline. The bumper shall return to its pre-impact shape within 10 minutes of the impact. The bumper shall protect the bus from damage as a result of 6.5 mph impacts at any point by the common carriage with contoured impact surface defined in Figure 2 of FMVSS 301 loaded to 4000lbs parallel to the longitudinal centerline of the bus. It shall protect the bus from damage as a result of 5.5mph impacts into the corners at a 30deg angle to the longitudinal centerline of the bus. The energy absorption system of the bumper shall be independent of every power system of the bus and shall not require service or maintenance in normal operation during the service life of the bus. The bumper may increase the overall bus length specified by no more than 7 in.

DEFAULT

Standard bumper.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 67.3 Rear Bumper

DEFAULT

No part of the bus, including the bumper, shall be damaged as a result of a 2mph impact with a fixed, flat barrier perpendicular to the longitudinal centerline of the bus. The bumper shall return to its pre-impact shape within 10 minutes of the impact. When using a yard tug with a smooth,

flat plate bumper 2 ft. wide contacting the horizontal centerline of the rear bumper, the bumper shall provide protection at speeds up to 5 mph, over pavement discontinuities up to 1 in. high, and at accelerations up to 2 mph/sec. The rear bumper shall protect the bus when impacted anywhere along its width by the common carriage with contoured impact surface defined in Figure 2 of FMVSS 301 loaded to 4000 lbs., at 4 mph parallel to or up to a 30degangle to the longitudinal centerline of the bus. The rear bumper shall be shaped to preclude unauthorized riders standing on the bumper. The bumper shall not require service or maintenance in normal operation during the service life of the bus. The bumper may increase the overall bus length specified by no more than 7 in.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 67.4 Bumper Material

DEFAULT

Bumper material shall be corrosion-resistant and withstand repeated impacts of the specified loads without sustaining damage. These bumper qualities shall be sustained throughout the service life of the bus.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 68. Finish and Color

TS 68.1 Appearance

All exterior surfaces shall be smooth and free of wrinkles and dents. Exterior surfaces to be painted shall be properly prepared as required by the paint system Supplier prior to application of paint to ensure a proper bond between the basic surface and successive coats of original paint for the service life of the bus. Drilled holes and cutouts in exterior surfaces shall be made prior to cleaning, priming and painting, where possible, to prevent corrosion. The bus shall be painted prior to installation of exterior lights, windows, mirrors and other items that are applied to the exterior of the bus. Body filler materials may be used for surface dressing, but not for repair of damaged or improperly fitted panels.

Paint shall be applied smoothly and evenly with the finished surface free of visible dirt and the following other imperfections:

- blisters or bubbles appearing in the topcoat film
- chips, scratches or gouges of the surface finish
- cracks in the paint film
- craters where paint failed to cover due to surface contamination
- overspray
- peeling

- runs or sags from excessive flow and failure to adhere uniformly to the surface
- chemical stains and water spots
- dry patches due to incorrect mixing of paint activators
- buffing swirls

All exterior finished surfaces shall be impervious to diesel fuel, gasoline and commercial cleaning agents. Finished surfaces shall resist damage by controlled applications of commonly used graffiti-removing chemicals.

Proper adhesion between the basic surface and successive coats of the original paint shall be measured using an Elcometer adhesion tester as outlined in ASTM D4541-85. Adhesion shall be a minimum 300 ft.-lbs. The bus manufacturer shall supply test samples of the exterior surface for each step of the painting process that may be subject to adhesion testing per ASTM G4541-87 and ASTM D4145-85. ASTM D4541-93 may be used for inspection testing during assembly of the vehicle.

DEFAULT

Standard Contractor exterior paint finish quality.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

DEFAULT

Base coat/clear coat paint system.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment: Reference Deviation

TS 69. Decals, Numbering and Signing

DEFAULT

Monograms, numbers and other special signing shall be applied to the inside and outside of the bus as required. Signs shall be durable and fade-, chip- and peel-resistant. They may be painted signs, decals or pressure-sensitive appliqués. All decals shall be installed per the decal Supplier recommendations. Signs shall be provided in compliance with the ADA requirements defined in 49 CFR Part 38, Subpart B, 38.27.

> **NOTE:** The Agency should supply a list of interior and exterior decals including size and location.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment: Reference Deviation

TS 69.1 Passenger Information

DEFAULT

ADA priority seating signs as required and defined by 49 CFR shall be provided to identify the seats designated for passengers with disabilities.

Requirements for a public information system in accordance with 49 CFR shall be provided.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 70. Exterior Lighting

All exterior lights shall be designed to prevent entry and accumulation of moisture or dust. Lamps, lenses and fixtures shall be interchangeable to the extent practicable. Two hazard lamps at the rear of the bus shall be visible from behind when the engine service doors are opened. Light lenses shall be designed and located to prevent damage when running the vehicle through an automatic bus washer.

DEFAULT

Commercially available LED-type lamps shall be utilized at all exterior lamp locations.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

Standard Lamps

All LED lamps shall be standard installation of the OEM. The entire assembly shall be specifically coated to protect the light from chemical and abrasion degradation.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

Standard Size

Size of LED lamps used for tail, brake and turn signal lamps shall be standard installation of OEM.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 70.1 Backup Light/Alarm

DEFAULT

Visible and audible warnings shall inform following vehicles or pedestrians of reverse operation. Visible reverse operation warning shall conform to SAE Standard J593. Audible reverse operation warning shall conform to SAE Recommended Practice J994 Type C or D.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 70.2 Doorway Lighting

DEFAULT

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

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 70.3 Turn Signals

DEFAULT

Standard Turn Signals

Turn-signal lights shall be provided on the front, rear, curb and street sides of the bus in accordance with federal regulations.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 70.4 Headlights

Headlamps shall be designed for ease of replacement.

DEFAULT

Standard Installation

Standard OEM headlight installation shall be provided in accordance with federal regulations.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 70.5 Brake Lights

TS 70.5.1 Transit Coach

Brake lights shall be provided in accordance with federal regulations.

DEFAULT

No High/Center Mount Brake Lamp or Deceleration Warning Lamps

Bus shall not include a high/center mount brake lamp and/or deceleration warning indicator lamps.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 70.6 Service Area Lighting (Interior and Exterior)

DEFAULT

LED lamps shall be provided in the engine and all other compartments where service may be required to generally illuminate the area for night emergency repairs or adjustments. These service areas shall include, but not be limited to, the engine compartment, the communication box, junction/apparatus panels and passenger door operator compartments. Lighting shall be adequate to light the space of the service areas to levels needed to complete typical emergency repairs and adjustments. The service area lamps shall be suitable for the environment in which they are mounted.

Engine compartment lamps shall be controlled by a switch mounted near the rear start controls. All other service area lamps shall be controlled by switches mounted on or convenient to the lamp assemblies. Power to the service area lighting shall be programmable. Power shall latch on with activation of the switch and shall be automatically discontinued (timed out) after 30 minutes to prevent damage caused by inadvertently leaving the service area lighting switch in the "on" position after repairs are made.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

INTERIOR PANELS AND FINISHES

TS 71. General Requirements

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

Interior surfaces more than 10 in. 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. Any components and other electrical components within close proximity to these surfaces shall also be resistant to this cleaning method.

DEFAULT

No requirement for anti-graffiti/vandalism surface treatments.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 72. Interior Panels

Panels shall be easily replaceable and tamper resistant. They shall be reinforced, as necessary, to resist vandalism and other rigors of transit bus service. Individual trim panels and parts shall be interchangeable to the extent practicable.

DEFAULT

Interior panel required to meet FMVSS 302.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 72.1 Driver Area Barrier

TS 72.1.1 Transit Coach

A barrier or bulkhead between the driver and the street-side front passenger seat shall be provided. The barrier shall minimize glare and reflections in the windshield directly in front of the barrier from interior lighting during night operation. Location and shape must permit full seat travel and reclining possibilities that can accommodate the shoulders of a 95th-percentile male. The partition shall have a side return and stanchion to prevent passengers from reaching the driver by standing behind the driver's seat. The lower area between the seat and panel must be accessible to the driver. The partition must be strong enough in conjunction with the entire partition assembly for mounting of such equipment as flare kits, fire extinguishers (1.2kg), microcomputer, public address amplifier, etc. The panel should be properly attached to minimize noise and rattles.

DEFAULT

No Driver Barrier

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 72.2 Modesty Panels

Sturdy divider panels constructed of durable, unpainted, corrosion-resistant material complementing the interior shall be provided to act as both a physical and visual barrier for seated passengers.

Design and installation of modesty panels located in front of forward-facing seats shall include a handhold or grab handle along its top edge. These dividers shall be mounted on the sidewall and shall project toward the aisle no farther than passenger knee projection in longitudinal seats or the aisle side of the transverse seats. Modesty panels shall extend from at least the window opening of the side windows, and those forward of transverse seats shall extend downward to 1 and 1½ in. above the floor. Panels forward of longitudinal seats shall extend to below the level of the seat cushion. Dividers positioned at the doorways, where applicable, shall provide no less than a 2½ in. clearance between the modesty panel and a fully open, inward opening door, or the path of a deploying flip-out ramp to protect passengers from being pinched. Modesty panels installed at doorways shall be equipped with grab rails if passenger assists are not provided by other means.

The modesty panel and its mounting shall withstand a static force of 250 lbs. applied to a 4 × 4 in. area in the center of the panel without permanent visible deformation.

DEFAULT

Modesty panels shall be installed as stated.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 72.3 Front End

DEFAULT

The entire front end of the bus shall be sealed to prevent debris accumulation behind the dash and to prevent the driver's feet from kicking or fouling wiring and other equipment. The front end shall be free of protrusions that are hazardous to passengers standing at the front of the standee line area of the bus during rapid decelerations. Paneling across the front of the bus and any trim around the driver's compartment shall be formed metal or composite material. Composite dash panels shall be reinforced as necessary, vandal-resistant and replaceable. All colored, painted and plated parts forward of the driver's barrier shall be finished with a surface that reduces glare. Any mounted equipment must have provision to support the weight of equipment.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 72.4 Rear Bulkhead

DEFAULT

The rear bulkhead and rear interior surfaces shall be material suitable for exterior skin; painted and finished to exterior quality; or paneled with melamine-type material, composite, scratch-resistant plastic or carpeting and trimmed with stainless steel, aluminum or composite.

The rear bulkhead paneling shall be contoured to fit the ceiling, side walls and seat backs so that any litter or trash will tend to fall to the floor or seating surface when the bus is on a level surface. Any air vents in this area shall be louvered to reduce airflow noise and to reduce the probability of trash or liter being thrown or drawn through the grille. If it is necessary to remove the panel to service components located on the rear bulkhead, then the panel shall be hinged or shall be able to be easily removed and replaced. Grilles where access to or adjustment of

equipment is required shall be heavy duty and designed to minimize damage and limit unauthorized access.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 72.5 Headlining

DEFAULT

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

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 72.6 Fastening

DEFAULT

Interior panels shall be attached so that there are no exposed unfinished or rough edges or rough surfaces. Fasteners should be corrosion resistant. Panels and fasteners shall not be easily removable by passengers. Exposed interior fasteners should be minimized, and where required shall be tamper resistant.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 72.7 Insulation

DEFAULT

Any insulation material used between the inner and outer panels shall minimize the entry and/or retention of moisture. Insulation properties shall be unimpaired during the service life of the bus.

Any insulation material used inside the engine compartment shall not absorb or retain oils or water and shall be designed to prevent casual damage that may occur during maintenance operations.

The combination of inner and outer panels on the sides, roof, wheel wells and ends of the bus, and any material used between these panels, shall provide a thermal insulation sufficient to meet the interior temperature requirements. The bus body shall be thoroughly sealed so that the driver or passengers cannot feel drafts during normal operations with the passenger doors closed.

FTA Docket 90-A
All insulation materials shall comply with the Recommended Fire Safety Practices defined in FTA Docket 90-A, dated October 20, 1993.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment: Reference Deviation

TS 72.8 Floor Covering

DEFAULT

The floor covering shall have a non-skid walking surface that remains effective in all weather conditions. The floor covering, as well as transitions of flooring material to the main floor and to the entrance and exit area, shall be smooth and present no tripping hazards. Seams shall be sealed/welded per manufacturer's specifications. The standee line shall be approximately 2 in. wide and shall extend across the bus aisle. The color and pattern shall be consistent throughout the floor covering.

Any areas on the floor that are not intended for standees, such as areas "swept" during passenger door operation, shall be clearly and permanently marked.

The floor shall be easily cleaned and shall be arranged to minimize debris accumulation.

A one-piece center strip shall extend from the vertical wall of the rear settee between the aisle sides of transverse seats to the standee line. If the floor is of a bi-level construction, then the center strip shall be one piece at each level. The covering between the center strip and the wheel housings may be separate pieces. At the rear door, however, a separate strip as wide as the door shall extend from the center strip to the outboard edge of the rear/exit area.
The floor under the seats shall be covered with smooth surface flooring material. The floor covering shall closely fit the sidewall in a fully sealed butt joint or extend to the top of the cove.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 72.9 Interior Lighting

DEFAULT

The light source shall be located to minimize windshield glare, with distribution of the light focused primarily on the passengers' reading plane while casting sufficient light onto the advertising display. The lighting system may be designed to form part of or the entire air distribution duct.

The lens material shall be translucent polycarbonate. Lenses shall be designed to effectively "mask" the light source. Lenses shall be sealed to inhibit incursion of dust and insects yet be easily removable for service. Access panels shall be provided to allow servicing of components located behind light panels. If necessary, the entire light fixture shall be hinged.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 72.10 Passenger

First Row Lights

The first light on each side (behind the driver and the front door) is normally turned on only when the front door is opened, in "night run" and "night park." As soon as the door closes, these lights shall go out. These lights shall be turned on at any time if the switch is in the "on" position.

DEFAULT

LED lights.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

First Light Modules Dim/Extinguish When Front Door is Closed

When the master switch is in the "run" or "night/run" mode, the first light module on each side of the coach shall automatically extinguish or dim when the front door is in the closed position and illuminate when the door is opened.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 72.11 Driver's Area

DEFAULT

The driver's area shall have a light to provide general illumination, and it shall illuminate the half of the steering wheel nearest the driver to a level of 5 to 10 foot-candles.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 72.12 Seating Areas

DEFAULT

The interior lighting system shall provide a minimum 15 foot-candle illumination on a 1 sq. ft. plane at an angle of 45 degrees from horizontal, centered 33 in. above the floor and 24 in. in front of the seat back at each seat position. Allowable average light level for the rear bench seats shall be 7 foot-candles.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 72.13 Vestibules/Doors

DEFAULT

Floor surface in the aisles shall be a minimum of 10 foot-candles, and the vestibule area a minimum of 4 foot-candles with the front doors open and a minimum of 2 foot-candles with the front doors closed. The front entrance area and curb lights shall illuminate when the front door is open and master run switch is in the "lights" positions. Rear exit area and curb lights shall illuminate when the rear door is unlocked.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 72.14 Step Lighting

DEFAULT

Step lighting for the intermediate steps between lower and upper floor levels shall be a minimum of 4 foot-candles and shall illuminate in all engine run positions. The step lighting shall be low

profile to minimize tripping and snagging hazards for passengers and shall be shielded as necessary to protect passengers' eyes from glare.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 72.15 Ramp Lighting

DEFAULT

Exterior and interior ramp lighting shall comply with federal regulations.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 72.16 Farebox Lighting

DEFAULT

None required.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 73. Fare Collection

Space and structural provisions shall be made for installation of currently available fare collection devices, which shall be as far forward as practicable. Location of the fare collection device shall not restrict traffic in the vestibule, including wheelchairs if a front door loading device is used, and shall allow the driver to easily reach the farebox controls and to view the fare register. The farebox shall not restrict access to the driver area, shall not restrict operation of driver controls and shall not—either by itself or in combination with stanchions, transfer mounting, cutting and punching equipment, or route destination signs—restrict the driver's field of view per SAE Recommended Practice J1050. The location and mounting of the fare collection device shall allow use, without restriction, by passengers. The farebox location shall permit accessibility to the vault for easy manual removal or attachment of suction devices. Meters and counters on the farebox shall be readable on a daily basis. The floor under the farebox shall be reinforced as necessary to provide a sturdy mounting platform and to prevent shaking of the farebox.

Contractor shall provide fare collection installation layout to the Agency for approval.

Transfer mounting, cutting and punching equipment shall be located in a position convenient to the driver.

DEFAULT

Agency will install its own fare box.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 74. Interior Access Panels and Doors

Access for maintenance and replacement of equipment shall be provided by panels and doors that appear to be an integral part of the interior. Access doors shall be hinged with gas props or over-center springs, where practical, to hold the doors out of the mechanic's way. Panels shall prevent entry of mechanism lubricant into the bus interior. All fasteners that retain access panels shall be captive in the cover.

DEFAULT

Access Doors that Do Not Require Tools or Keys to Open

Access doors shall be secured with hand screws or latches. All fasteners that retain access panels shall be captive in the cover.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 74.1 Floor Panels

DEFAULT

Access openings in the floor shall be sealed to prevent entry of fumes and water into the bus interior. Flooring material at or around access openings shall be flush with the floor and shall be edge-bound with stainless steel or another material that is acceptable to the Agency to prevent the edges from coming loose. Access openings shall be asymmetrical so that reinstalled flooring shall be properly aligned. Fasteners shall tighten flush with the floor.

The number of special fastener tools required for panel and access door fasteners shall be minimized.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

PASSENGER ACCOMMODATIONS

TS 75. Passenger Seating

TS 75.1 Arrangements and Seat Style

The passenger seating arrangement in the bus shall be such that seating capacity is maximized and in compliance to the following requirements.

> **NOTE:** The Agency recognizes that ramp location, foot room, hip-to-knee room, doorway type, width, seat construction, floor level type, seat spacing requirements, ramp or lift, number of wheelchair positions, etc. ultimately affect seating capacity and layout.

DEFAULT

Forward-Facing Seat Configuration

Passenger seats shall be arranged in a transverse, forward-facing configuration, except at the wheel housings and turntable, if applicable, where aisle-facing seats may be arranged as appropriate with due regard for passenger access and comfort. Other areas where aisle-facing seats may be provided are at wheelchair securement areas and platforms (such as for fuel tank storage space).

Base Bus-USSC Gemini

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 75.2 Rearward Facing Seats

DEFAULT

Rearward facing seats not allowed.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 75.3 Padded Inserts/Cushioned Seats

DEFAULT

Non-Padded Inserts – UN upholstered

The passenger seats shall be equipped with un upholstered inserts throughout the bus.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 75.4 Seat back fitness

DEFAULT

Back insert Seat Configuration

The seat back insert thickness shall not exceed 1in. in the knee room area.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 75.5 Drain Hole in Seats

DEFAULT

No requirements for drain hole provision in seat inserts.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 75.6 Hip-to-Knee Room

DEFAULT

Hip-to-knee room measured from the center of the seating position, from the front of one seat back horizontally across the highest part of the seat to a vertical surface immediately in front, shall be a minimum of 26 in. At all seating positions in paired transverse seats immediately behind other seating positions, hip-to-knee room shall be no less than 27 in.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 75.7 Foot Room

DEFAULT

Foot room, measured at the floor forward from a point vertically below the front of the seat cushion, shall be no less than 14 in. Seats immediately behind the wheel housings and modesty

panels may have foot room reduced.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 75.8 Aisles

DEFAULT

The aisle between the seats shall be no less than 20 in. wide at seated passenger hip height. Seat backs shall be shaped to increase this dimension to no less than 24 in. at 32 in. above the floor (standing passenger hip height).

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 75.9 Dimensions

FIGURE 6

Seating Dimensions and Standard Configuration

DEFAULT

Seat dimensions for the various seating arrangements shall have the dimensions as follows (refer to **Figure 6**):

- The width, W, of the two-passenger transverse seat shall be a minimum 35 in.
- The length, L, shall be 17 in., ±1 in.
- The seat back height, B, shall be a minimum of 15 in.
- The seat height, H, shall be 17 in., ± 1 in. For the rear lounge (or settee) and longitudinal seats, and seats located above raised areas for storage of under-floor components, a cushion

height of up to 18 in., ±2 in., will be allowed. This shall also be allowed for limited transverse seats, but only with the expressed approval of the Agency.

- Foot room = F.
- The seat cushion slope, S, shall be between 5 and 11 deg.
- The seat back slope, C, shall be between 8 and 17 deg.
- Hip to knee room = K.
- The pitch, P, is shown as reference only.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 75.10 Structure and Design

DEFAULT

The passenger seat frame and its supporting structure shall be constructed and mounted so that space under the seat is maximized and is completely free of obstructions to facilitate cleaning.

Seats, structures and restraints around the securement area should not infringe into the mobility device envelope or maneuverability.

The transverse seat structure shall be fully cantilevered from the sidewall with sufficient strength for the intended service. The lowest part of the seat assembly that is within 12 in. of the aisle shall be at least 10 in. above the floor.

In locations at which cantilevered installation is precluded by design and/or structure, other seat mounting may be allowed.

All transverse objects—including seat backs, modesty panels, and longitudinal seats—in front of forward-facing seats shall not impart a compressive load in excess of 1000lbs onto the femur of passengers ranging in size from a 5th-percentile female to a 95th-percentile male during a 10g deceleration of the bus. This deceleration shall peak at 0.05 to0.015 seconds from initiation. Permanent deformation of the seat resulting from two 95th-percentile males striking the seat back during this 10g deceleration shall not exceed 2 in., measured at the aisle side of the seat frame at height H. The seat back should not deflect more than 14 in., measured at the top of the seat back, in a controlled manner to minimize passenger injury. Structural failure of any part of the seat or sidewall shall not introduce a laceration hazard.

The seat assembly shall withstand static vertical forces of 500 lbs. applied to the top of the seat cushion in each seating position with less than ¼in. permanent deformation in the seat or its mountings. The seat assembly shall withstand static horizontal forces of 500 lbs. evenly distributed along the top of the seat back with less than ¼in. permanent deformation in the seat or its mountings. The seat backs at the aisle position and at the window position shall withstand repeated impacts of two 40-lb sandbags without visible deterioration. One sandbag shall strike

the front 40,000 times and the other sandbag shall strike the rear 40,000 times. Each sandbag shall be suspended on a 36in. pendulum and shall strike the seat back 10,000 times each from distances of 6, 8, 10 and 12 in. Seats at both seating positions shall withstand 4000 vertical drops of a 40-lb sandbag without visible deterioration. The sandbag shall be dropped 1000 times each from heights of 6, 8, 10 and 12 in. Seat cushions shall withstand 100,000 randomly positioned 3½ in. drops of a squirming, 150-lb, smooth-surfaced, buttocks-shaped striker with only minimal wear on the seat covering and no failures to seat structure or cushion suspension components.

The back of each transverse seat shall incorporate a handhold no less than ⅞ in. in diameter for standees and seat access/egress. The handhold shall not be a safety hazard during severe decelerations. The handhold shall extend above the seat back near the aisle so that standees shall have a convenient vertical assist, no less than 4 in. long that may be grasped with the full hand. This handhold shall not cause a standee using this assist to interfere with a seated 50th-percentile male passenger. The handhold shall also be usable by a 5th-percentile female, as well as by larger passengers, to assist with seat access/egress for either transverse seating position. The upper rear portion of the seat back and the seat back handhold immediately forward of transverse seats shall be padded and/or constructed of energy-absorbing materials. During a 10g deceleration of the bus, the HIC number (as defined by SAE Standard J211a) shall not exceed 400 for passengers ranging in size from a 5th percentile female through a 95th percentile male.

The seat back handhold may be deleted from seats that do not have another transverse seat directly behind and where a vertical assist is provided.

Longitudinal seats shall be the same general design as transverse seats but without seat back handholds. Longitudinal seats may be mounted on the wheelhouses. Armrests shall be included on the ends of each set of longitudinal seats except on the forward end of a seat set that is immediately to the rear of a transverse seat, the driver's barrier, or a modesty panel, when these fixtures perform the function of restraining passengers from sliding forward off the seat. Armrests are not required on longitudinal seats located in the wheelchair parking area that fold up when the armrest on the adjacent fixed longitudinal seat is within 3½ in. of the end of the seat cushion. Armrests shall be located from 7 to 9 in. above the seat cushion surface. The area between the armrest and the seat cushion shall be closed by a barrier or panel. The top and sides of the armrests shall have a minimum width of 1 in. and shall be free from sharp protrusions that form a safety hazard.

Seat back handhold and armrests shall withstand static horizontal and vertical forces of 250 lbs. applied anywhere along their length with less than ¼ in. permanent deformation. Seat back handhold and armrests shall withstand 25,000 impacts in each direction of a horizontal force of 125 lbs. with less than ¼in. permanent deformation and without visible deterioration.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 75.11 Construction and Materials

Selected materials shall minimize damage from vandalism and shall reduce cleaning time. The

seats shall be attached to the frame with tamper-resistant fasteners. Coloring shall be consistent throughout the seat material, with no visually exposed portion painted. Any exposed metal touching the sides or the floor of the bus shall be stainless steel. The seat, pads and cushions shall be contoured for individuality, lateral support and maximum comfort and shall fit the framework to reduce exposed edges.

The minimum radius of any part of the seat back, handhold or modesty panel in the head or chest impact zone shall be a nominal ¼in.The seat back and seat back handhold immediately forward of transverse seats shall be constructed of energy-absorbing materials to provide passenger protection and, in a severe crash, to allow the passenger to deform the seating materials in the impact areas. Complete seat assemblies shall be interchangeable to the extent practicable.

DEFAULT

Agency to select seat fabric.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 76. Passenger Assists

DEFAULT

Passenger assists in the form of full grip, vertical stanchions or handholds shall be provided for the safety of standees and for ingress/egress. Passenger assists shall be convenient in location, shape and size for both the 95th-percentile male and the 5th-percentile female standee. Starting from the entrance door and moving anywhere in the bus and out the exit door, a vertical assist shall be provided either as the vertical portion of the seat back assist or as a separate item so that a 5th-percentile female passenger may easily move from one assist to another using one hand and the other without losing support. All handholds and stanchions at the front doorway, around the farebox, and at interior steps for bi-level designs shall be powder-coated in a high-contrast yellow color.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 76.1 Assists

DEFAULT

Excluding those mounted on the seats and doors, the assists shall have a cross-sectional diameter between 1¼ and 1½ in. or shall provide an equivalent gripping surface with no corner radii less than ¼ in. All passenger assists shall permit a full hand grip with no less than 1½ in. of knuckle clearance around the assist. Passenger assists shall be designed to minimize catching or snagging of clothes or personal items and shall be capable of passing the NHTSA Drawstring Test.

Any joints in the assist structure shall be underneath supporting brackets and securely clamped to prevent passengers from moving or twisting the assists. Seat handholds may be of the same construction and finish as the seat frame. Door-mounted passenger assists shall be of anodized aluminum, stainless steel or powder-coated metal. Connecting tees and angles may be powder-coated metal castings. Assists shall withstand a force of 300 lbs. applied over a 12in. lineal dimension in any direction normal to the assist without permanent visible deformation. All passenger assist components, including brackets, clamps, screw heads and other fasteners used on the passenger assists shall be designed to eliminate pinching, snagging and cutting hazards and shall be free from burrs or rough edges.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 76.2 Front Doorway

DEFAULT

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

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 76.3 Vestibule

DEFAULT

The aisle side of the driver's barrier, the wheel housings and when applicable the modesty panels shall be fitted with vertical passenger assists that are functionally continuous with the overhead assist and that extend to within 36 in. of the floor. These assists shall have sufficient clearance from the barrier to prevent inadvertent wedging of a passenger's arm.

A horizontal passenger assist shall be located across the front of the bus and shall prevent passengers from sustaining injuries on the fare collection device or windshield in the event of a sudden deceleration. Without restricting the vestibule space, the assist shall provide support for a boarding passenger from the front door through the fare collection procedure. The assist shall be no less than 36 in. above the floor. The assists at the front of the bus shall be arranged to permit a 5th-percentile female passenger to easily reach from the door assist, to the front assist, to vertical assists on the driver's barrier, wheel housings or front modesty panel.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 76.4 Rear Doorway

DEFAULT

Vertical assists that are functionally continuous with the overhead assist shall be provided at the aisle side of the transverse seat immediately forward of the rear door and on the aisle side of the rear door modesty panel(s).Passenger assists shall be provided on modesty panels that are functionally continuous with the rear door assists. Rear doors, or the exit area, shall be fitted with assists having a cross-sectional diameter between 1¼ and 1½ in. or providing an equivalent gripping surface with no corner radii less than ¼ in., and shall provide at least 1½ in. of knuckle clearance between the assists and their mounting. The assists shall be designed to permit a 5th-percentile female to easily move from one assist to another during the entire exiting process. The assists shall be located no farther inboard than 6 in. from the outside edge of the rear doorway step.

> **NOTE:** For an articulated bus, passenger assists will be provided to aid in the transition between the front and rear sections of the bus.

TS 76.5 Overhead

Except forward of the standee line and at the rear door, a continuous, full-grip, overhead assist shall be provided. This assist shall be located over the center of the aisle seating position of the transverse seats. The assist shall be no less than 70 in. above the floor.

DEFAULT

No requirements for overhead grab straps/extensions.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

DEFAULT

Grip rails shall be stainless steel.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 76.6 Longitudinal Seat Assists

DEFAULT

Longitudinal seats shall have vertical assists located between every other designated seating position, except for seats that fold/flip up to accommodate wheelchair securement. Assists shall extend from near the leading edge of the seat and shall be functionally continuous with the overhead assist. Assists shall be staggered across the aisle from each other where practicable and shall be no more than 52 in. apart or functionally continuous for a 5th percentile female passenger.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 76.7 Wheel Housing Barriers/Assists

DEFAULT

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

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 77. Passenger Doors

TS 77.1 Transit Coach

DEFAULT

Doorways will be provided in the locations and styles as follows. Passenger doors and doorways shall comply with ADA requirements.

TS 77.1.1 Front door

Door shall be forward of the front wheels and under direct observation of the driver.

TS 77.1.2 Rear Door

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

Front	Street-Side Rear
Closed	Closed
Open	Closed
Open	Closed
Open	Open
Open	Open
Closed	Closed
Closed	Open
Closed	Open

DEFAULT

If air-powered, the door system shall operate per specification at air pressures between 90 and 130 psi.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 77.2 Materials and Construction

Structure of the doors, their attachments, inside and outside trim panels and any mechanism exposed to the elements shall be corrosion resistant. Door panel construction shall be of corrosion-resistant metal or reinforced non-metallic composite materials. When fully opened, the doors shall provide a firm support and shall not be damaged if used as an assist by passengers during ingress or egress. Door edges shall be sealed to prevent infiltration of exterior moisture, noise, dirt and air elements from entering the passenger compartment, to the maximum extent possible based on door types.

The closing edge of each door panel shall have no less than 2 in. of soft weather stripping. The doors, when closed, shall be effectively sealed, and the hard surfaces of the doors shall be at least 4 in. apart (not applicable to single doors).The combined weather seal and window glazing elements of the front door shall not exceed 10 deg of binocular obstruction of the driver's view through the closed door.

Our specification being proposed for the section above (circle one below):

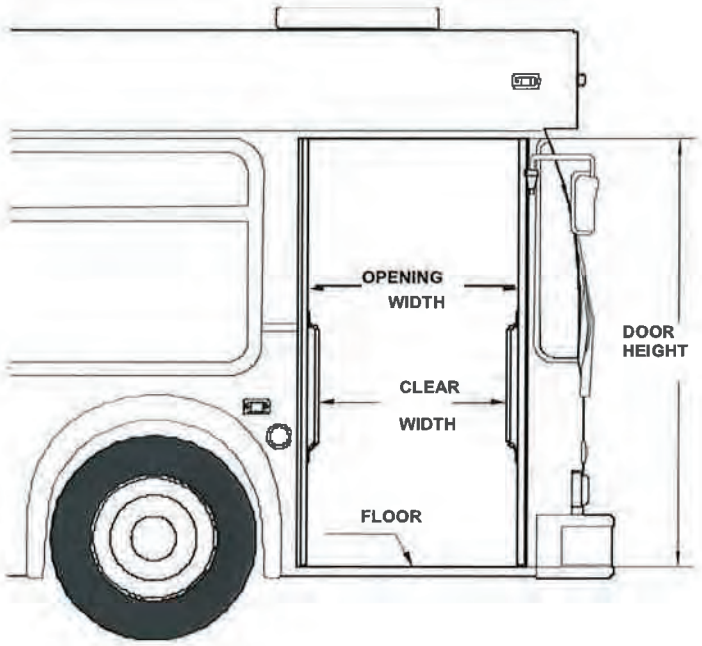
EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 77.3 Dimensions

TS 77.3.1 Transit Coach

FIGURE 7
Transit Bus Minimum Door Opening



When open, the doors shall leave an opening no less than 75 in. in height.

DEFAULT

31¾in.Minimum Doorway Clear Width

Front door clear width shall be a minimum of 31¾ in. with the doors fully opened. Rear door opening clear width shall be a minimum of 24 in. with the doors fully opened. If arear door ramp or lift is provided, then the clear door opening width shall be a minimum of31¾ in. with door fully opened.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 77.4 Door Glazing

The upper section of both front and rear doors shall be glazed for no less than 45 percent of the respective door opening area of each section. The lower section of the front door shall be glazed for no less than 25 percent of the door opening area of the section.

Door glazing shall be easily replaceable.

DEFAULT
Zip type glazing rubber.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*
Comment:

DEFAULT
The front door panel glazing material shall have a nominal ¼ in. thick laminated safety glass conforming with the requirements of ANSI Z26.1 Test Grouping 2 and the recommended practices defined in SAE J673.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*
Comment:

TS 77.5 Door Projection

TS 77.5.1 Exterior

DEFAULT
The exterior projection of the front doors beyond the side of the bus shall be minimized and shall not block the line of sight of the rear exit door via the curb side mirror when the doors are fully open. The exterior projection of both doors shall be minimized and shall not exceed 14 in. during the opening or closing cycles or when doors are fully opened

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*
Comment:

TS 77.5.2 Interior

DEFAULT
Projection inside the bus shall not cause an obstruction of the rear door mirror or cause a hazard for standees.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 77.6 Door Height Above Pavement

DEFAULT

It shall be possible to open and close either passenger door when the bus loaded to gross vehicle weight rating is not knelt and parked with the tires touching an 8in. high curb on a street sloping toward the curb so that the street-side wheels are 5 in. higher than the right-side wheels.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 77.7 Closing Force

DEFAULT

Closing door edge speed shall not exceed 12 in. per second, and opening door speed shall not exceed 19 in. per second. Power doors shall not slam closed under any circumstance, even if the door is obstructed during the closing cycle. If a door is obstructed during the closing cycle, the pressure exerted on the obstruction shall not increase once initial contact has been made.

Doors closed by a return spring or counterweight-type device shall be equipped with an obstruction-sensing device that, at a minimum, alerts the driver if an obstruction is detected between the closing doors. Doors closed by a return spring or counterweight type device, when unlocked, shall be capable of being pushed to the point where the door starts to open with a force not to exceed 25 lbs. applied to the center edge of the forward door panel.

Whether or not the obstruction-sensing system is present or functional, it shall be possible to withdraw a 1½ in. diameter cylinder from between the center edges of a closed and locked door with an outward force not greater than 35 lbs.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 77.7.1 Rear Door Closing Force

DEFAULT

Power-close rear doors shall be equipped with an obstruction-sensing system such that if an obstruction is within the path of the closing doors, the doors will stop and/or reverse direction prior to imparting a 10-lb force on 1 sq. in. of that obstruction. If a contactless obstruction sensing system is employed, it shall be capable of discriminating between the normal doorway environment and passengers or other obstructions within the doorway, and of altering the zones of detection based upon the operating state of the door system.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 77.8 Actuators

Doors shall open or close completely in not more than 3.5 seconds from the time of control actuation and shall be subject to the closing force requirements.

Door actuators shall be adjustable so that the door opening and closing speeds can be independently adjustable to satisfy the above requirements. Actuators and the complex door mechanism shall be concealed from passengers but shall be easily accessible for servicing. The door actuators shall be rebuildable. If powered by compressed air, exhaust from the door system shall be routed below the floor of the bus to prevent accumulation of any oil that may be present in the air system and to muffle sound.

Door actuators and associated linkages shall maximize door holding forces in the fully open and fully closed positions to provide firm, non-rattling, non-fluttering door panels while minimizing the force exerted by the doors on an obstruction midway between the fully open and closed positions.

DEFAULT

The rear door actuator(s) shall be under the complete control of the vehicle operator and shall open and close in response to the position of the driver's door control.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 77.8.1 Rear Door Interlocks

See "Hardware Mounting" for door system interlock requirements.

TS 77.9 Emergency Operation

DEFAULT

In the event of an emergency, it shall be possible to manually open doors designated as emergency exits from inside the bus using a force of no more than 25 lbs. after actuating an unlocking device. The unlocking device shall be clearly marked as an emergency-only device and shall require two distinct actions to actuate. The respective door emergency unlocking device shall be accessible from the doorway area. The unlocking device shall be easily reset by the operator without special tools or opening the door mechanism enclosure. Doors that are required to be classified as "emergency exits" shall meet the requirements of FMVSS 217.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 77.10 Door Control

The door control shall be located in the operator's area within the hand reach envelope described in SAE Recommended Practice J287, "Driver Hand Control Reach." The driver's door control shall provide tactile feedback to indicate commanded door position and resist inadvertent door actuation.

DEFAULT

Door control located on street side. The front door shall remain in commanded state position even if power is removed or lost.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 77.11 Door Controller

TS 77.11.1 Transit Coach

DEFAULT

Five-Position Driver's Door Controller

The control device shall be protected from moisture. Mounting and location of the door control device handle shall be designed so that it is within comfortable, easy arm's reach of the seated driver. The door control device handle shall be free from interference by other equipment and have adequate clearance so as not to create a pinching hazard.

Base Bus-Vapor Door Controller

Position of the door control handle shall result in the following operation of the front and rear doors:

- **Center position:** Front door closed, rear door closed or set to lock.
- **First position forward:** Front door open, rear door closed or set to lock.
- **Second position forward:** Front door open, rear door open or set to open.
- **First position back:** Front door closed, rear door open or set to open.
- **Second position back:** Front door open, rear door open or set to open.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 77.12 Door Open/Close

DEFAULT

A control or valve in the operator's compartment shall shut off the power to, and/or dump the power from, the front door mechanism to permit manual operation of the front door with the bus shut down. A master door switch, which is not within reach of the seated operator, when set in the "off" position shall close the rear door, deactivate the door control system, release the interlocks and permit only manual operation of the rear door.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 78. Accessibility Provisions

DEFAULT

Space and body structural provisions shall be provided at the front or rear door of the bus to accommodate a wheelchair loading system.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 78.1 Loading Systems

There are three options:

- high-floor lift
- low-floor ramp
- platform (boarding bridge plate) level boarding

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment: Low-Floor Ramp is only option

TS 78.2 Lift

The wheelchair lift control system must be capable of receiving multiplex commands from vehicle interlocks.

An automatically controlled, power-operated wheelchair lift system compliant to requirements defined in 49 CFR 571.403(FMVSS 403) shall provide ingress and egress quickly, safely and comfortably, both in forward and rearward directions, for a passenger in a wheelchair from a level street or curb.

DEFAULT

Wheelchair Ramp mounted in front step well.
Base Bus-Lift U LU 18

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 78.3 Loading System for 30 to 40 ft. Low-Floor Bus

An automatically controlled, power-operated ramp system compliant to requirements defined in 49 CFR Part 38, Subpart B, §38.23c shall provide ingress and egress quickly, safely and comfortably, both in forward and rearward directions, for a passenger in a wheelchair from a level street or curb.

DEFAULT

Front Door Location of Loading System, Flip-Out Design Ramp with 6:1 Slope

The wheelchair loading system shall be located at the front door, with the ramp being of a simple hinged, flip-out type design being capable of deploying to the ground at a maximum 6:1 slope.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 78.4 Wheelchair Accommodations

NOTE: Agency will approve acceptable securement system.

DEFAULT

Two Forward-Facing Wheelchair Securement Locations

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

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 78.5 Interior Circulation

DEFAULT

Maneuvering room inside the bus shall accommodate easy travel for a passenger in a wheelchair from the loading device and from the designated securement area. It shall be designed so that no portion of the wheelchair protrudes into the aisle of the bus when parked in the designated parking space(s). When the positions are fully utilized, an aisle space of no less than 20 in. shall be maintained. As a guide, no width dimension should be less than 34 in. Areas requiring 90deg

turns of wheelchairs should have a clearance arc dimension no less than 45 in., and in the parking area where 180deg turns are expected, space should be clear in a full 60in.diameter circle. A vertical clearance of 12in. above the floor surface should be provided on the outside of turning areas for wheelchair footrests.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 78.6 Lift Door

DEFAULT

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 to 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 luggage door is a preferred design.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment: There are no "Lifts" on the low floor bus. The bus will have a ramp that can also be manually deployed. The Hazard lights will not turn on automatically as this would violate FMVSS regulations that the Hazard lights must always be turned on by a manual dedicated switch.

TS 78.7 Lift Width

DEFAULT

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 an 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 wheelchair securement positions.

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

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment: Reference above. Only Ramp is available. No Lift.

TS 78.8 Lighting Requirements

DEFAULT

Lighting for the lift areas shall be designed to meet 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 bus through the wheelchair lift door. During lift operation, the street surface shall be illuminated to a minimum of 6 candlepower a distance of 3 ft. beyond the external dimensions of the lift platform once deployed and lowered. Additional lighting shall be provided to ensure illumination of the instruction placard and the manual override pump when it is in use.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 78.9 Securement System

DEFAULT

The vehicle interior shall permit the securement of two forward-facing wheelchair passengers in which the primary position shall be on the street side of the coach directly across from the lift. Securement areas shall be a minimum 30 × 48 in. as required by the 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. A minimum 10.5 in. high barrier shall also be provided at the rear of the lift area for additional passenger protection.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 78.10 Roof Ventilation/Escape Hatches

DEFAULT

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

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

SIGNAGE AND COMMUNICATION

TS 79. Destination Signs

DEFAULT

A destination sign system shall be furnished on the front, on the right side near the front door. The driver shall be able to access the sign while seated.
The destination sign compartments shall meet the following minimum requirements:

- Compartments shall be designed to prevent condensation and entry of moisture and dirt.
- Compartments shall be designed to prevent fogging of both compartment window and glazing on the unit itself.
- Access shall be provided to allow cleaning of inside compartment window and unit glazing.
- The front window shall have an exterior display area of no less than 8.5 in. high by 56 in. wide.

Base Bus-Hanover White

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 80. Passenger Information and Advertising

TS 80.1 Interior Displays

DEFAULT

Provisions shall be made on the rear of the driver's barrier or equipment box located on the wheel well for a frame to retain information such as routes and schedules.

Advertising media 11 in. high and 0.09 in. thick shall be retained near the juncture of the bus ceiling and sidewall. The retainers may be concave and shall support the media without adhesives. The media shall be illuminated by the interior light system.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 80.2 Exterior Displays

DEFAULT

Provisions shall be made to integrate advertising into the exterior design of the bus. Advertising media, frames or supporting structures shall not detract from the readability of destination signs and signal lights, and shall not compromise passenger visibility. Advertising provisions shall not cause pedestrian hazards or foul automatic bus washing equipment, and shall not cover or interfere with doors, air passages, and vehicle fittings or in any other manner restrict the operation or serviceability of the bus.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 81. Passenger Stop Request/Exit Signal

TS 81.1 Transit Coach

DEFAULT

Pull Cord

A passenger "stop requested" signal system that complies with applicable ADA requirements defined in 49 CFR, Part 38.37, shall be provided. The system shall consist of a touch tape, chime

and interior sign message. The touch tape shall be accessible to all seated passengers, with provisions for standees .It shall be easily accessible to all passengers, seated or standing. Vertical touch tape shall be provided at each window mullion and adjacent to each wheelchair parking position and priority seating positions.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment: Clarification: The header notes Pull Cords. The description notes touch tape. The bus will come with Pull Cords accessible to all passengers.

TS 81.2 Signal Chime

TS 81.2.1 Transit Coach

DEFAULT

A single "stop requested" chime shall sound when the system is first activated. A double chime shall sound anytime the system is activated from wheelchair passenger areas.

Exit signals located in the wheelchair passenger area shall be no higher than 4 ft. above the floor. Instructions shall be provided to clearly indicate function and operation of these signals.

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 82. Communications

TS 82.1 Camera Surveillance System

DEFAULT

Base Bus- Apollo 8 camera 6TB HD

Our specification being proposed for the section above (circle one below):

EXCEEDS ***MEETS*** ***DOES NOT MEET***

Comment:

TS 82.2 Public Address System

DEFAULT

A public address system shall be provided on each bus for facilitating radio system and driver-originated announcements to passengers.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 82.2.1 Speakers

DEFAULT

Interior loudspeakers shall be provided, semi-flush mounted, on alternate sides of the bus passenger compartment, installed with proper phasing. Total impedance seen at the input connecting end shall be 8 Ohms. Mounting shall be accomplished with riv-nuts and machine screws.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 82.3 Automatic Passenger Counter (APC)

DEFAULT

Base Bus -UTA An infrared APC system shall be installed. Agency to provide details of APC system, including installation locations and number of buses to be equipped.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 82.4 Radio Handset and Control System

TS 82.4.1 Drivers Speaker

DEFAULT

Each bus shall have a recessed speaker in the ceiling panel above the driver. This speaker shall be the same component used for the speakers in the passenger compartment. It shall have 8 Ohms of impedance.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 82.4.2 Handset

DEFAULT

Contractor will install a handset for driver use.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 82.4.3 Emergency Alarm

DEFAULT

Contractor shall install an emergency alarm that is accessible to the driver but hidden from view.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

TS 83. Event Data Recorders (EDR)

DEFAULT

No EDR shall be installed.

Our specification being proposed for the section above (circle one below):

EXCEEDS *MEETS* *DOES NOT MEET*

Comment:

Exhibit 'B' – Proposal Pricing

(On following pages)

P-18-005 State of Florida Heavy Duty Buses

Base Bus Pricing

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
Base Bus Price		**$429,600.00**	**$435,525.00**	**$439,725.00**
ADVERTISING FRAMES	None	**INCLUDED**	**INCLUDED**	**INCLUDED**
AIR RESTRICTION INDICATOR	Donaldson (RBX00-2277) Air Restriction Indicator	**INCLUDED**	**INCLUDED**	**INCLUDED**
AIR SYSTEM	Cummins 30.4 CFM Air Compressor	**INCLUDED**	**INCLUDED**	**INCLUDED**
AIR SYSTEM	SKF HCT - 2000 AIR DRYER	**INCLUDED**	**INCLUDED**	**INCLUDED**
AIR SYSTEM	Shop Air Connection (Milton S790)	**INCLUDED**	**INCLUDED**	**INCLUDED**
AIR SYSTEM	Kingston Auto Drain Valve at Ping Tanks	**INCLUDED**	**INCLUDED**	**INCLUDED**
ALTERNATOR	EMP (400 Amp for EMP Electric Cooling System with EMP Radiator and Charge Air Cooler)	**INCLUDED**	**INCLUDED**	**INCLUDED**
AUTOMATIC PASSENGER COUNTER	UTA APC Sensors, Cabling, CPU Only (Integrated w/ ITS)	**INCLUDED**	**INCLUDED**	**INCLUDED**
AXLES & SEALS	Hub Piloted Wheels and Axles w/ Oil Seals	**INCLUDED**	**INCLUDED**	**INCLUDED**
AXLES & SEALS	Synthetic 75W90 Gear Oil	**INCLUDED**	**INCLUDED**	**INCLUDED**
BATTERIES	(2) DEKA 8D Side or Top Post Connections	**INCLUDED**	**INCLUDED**	**INCLUDED**
BATTERIES	Vanner 60Amp Battery Voltage Equalizer	**INCLUDED**	**INCLUDED**	**INCLUDED**
BATTERIES	Anderson 300 Jump Start Connector (Rear Only)	**INCLUDED**	**INCLUDED**	**INCLUDED**
BIKE RACKS	Byk-Rak, 2-Position, Powder Coated	**INCLUDED**	**INCLUDED**	**INCLUDED**
BIKE RACKS	Bike Rack Deployed Indicator Lamp on Driver's Dash	**INCLUDED**	**INCLUDED**	**INCLUDED**
BRAKES	S-Cam Drum Brakes with Wabco ABS	**INCLUDED**	**INCLUDED**	**INCLUDED**
COMMUNICATIONS SYSTEM	DC Power Filter for Radio Wiring	**INCLUDED**	**INCLUDED**	**INCLUDED**
COMMUNICATIONS SYSTEM	Power Circuit (Route to RH Dash & Electrical Equipment Box)	**INCLUDED**	**INCLUDED**	**INCLUDED**
COOLING SYSTEM	EMP Electric Cooling Fan System with EMP Radiator MH-4	**INCLUDED**	**INCLUDED**	**INCLUDED**
DESTINATION SIGNS	Hanover 100% White LED Sign (17 x 160)--Front ,Side, Rear	**INCLUDED**	**INCLUDED**	**INCLUDED**
DOOR SYSTEM-FRONT	OEM Standard Air Open/Air Close Front Door with Full Driver Control 31.75" Minimum Doorway Clear Width	**INCLUDED**	**INCLUDED**	**INCLUDED**
DOOR SYSTEM-REAR	OEM Standard Air Open/Spring Close Rear Door with Full Driver Control 24.8" Minimum Doorway Clear Width	**INCLUDED**	**INCLUDED**	**INCLUDED**
DOOR SYSTEM-REAR	Add Touch Bars (Air Open / Spring Close) at Rear Door with Driver Override	**INCLUDED**	**INCLUDED**	**INCLUDED**
DRIVER BARRIER	None STANDARD WRAP AROUND (35'/40') / FLAT MELAMINE (29') BARRIER	**INCLUDED**	**INCLUDED**	**INCLUDED**
DRIVER CONTROLS	Williams Controls 41 Degree Throttle and Brake Pedal (Non-Adjustable)	**INCLUDED**	**INCLUDED**	**INCLUDED**
DRIVER HEATERS	MCC Drivers Heater-Brushless Motors, Electric Control, Removable Filter	**INCLUDED**	**INCLUDED**	**INCLUDED**

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
DRIVERS SEAT	USSC G2A Evolution, with Fabric, with 3-Point Belt (Lap & Shoulder)	**INCLUDED**	**INCLUDED**	**INCLUDED**
ELECTRICAL EQUIPMENT CABINET	44"H x 22.5"W x 20"D, 1-Door	**INCLUDED**	**INCLUDED**	**INCLUDED**
ENGINE	Cummins L9 280 H.P. Diesel	**INCLUDED**	**INCLUDED**	**INCLUDED**
ENGINE OIL SYSTEM	Magnetic Drain Plug (Internal Hex Head)	**INCLUDED**	**INCLUDED**	**INCLUDED**
EXHAUST SYSTEM	Cummins Compucheck Fitting at Turbo Outlet Pipe	**INCLUDED**	**INCLUDED**	**INCLUDED**
EXTERIOR LIGHTS	4" Diameter LED Tail Lights Turn, Tail, Stop, Reverse	**INCLUDED**	**INCLUDED**	**INCLUDED**
EXTERIOR LIGHTS	4 LED Headlights (Low & High Beam) Peterson	**INCLUDED**	**INCLUDED**	**INCLUDED**
EXTERIOR MIRRORS	B&R 10"x11", 2-Piece, no heat or remote adjustment (Street Side)	**INCLUDED**	**INCLUDED**	**INCLUDED**
EXTERIOR MIRRORS	B&R 10"x11", 2-Piece, with remote adjustment (Curbside Mirror) No Heat	**INCLUDED**	**INCLUDED**	**INCLUDED**
FARE COLLECTION	No Farebox , Provide Power Circuit and Groundstrap Only	**INCLUDED**	**INCLUDED**	**INCLUDED**
FIRE SUPPRESSION SYSTEM	Fogmaker Water Mist Fire Suppression System	**INCLUDED**	**INCLUDED**	**INCLUDED**
FLOORING	Greenwood ACQ Plywood in low floor section, composite in rear deck	**INCLUDED**	**INCLUDED**	**INCLUDED**
FLOORING	Transitflor Flooring	**INCLUDED**	**INCLUDED**	**INCLUDED**
FRAME	3CR12 Stainless Steel	**INCLUDED**	**INCLUDED**	**INCLUDED**
FUEL SYSTEM	Spin On Primary and Secondary Fuel Filters	**INCLUDED**	**INCLUDED**	**INCLUDED**
GAUGES--DRIVERS DASH	Speedometer, Air Pressure Gauge, 12/24 volt Gauges, DEF Gauge, Engine Oil Pressure Gauge, Engine Coolant Temp Gauge	**INCLUDED**	**INCLUDED**	**INCLUDED**
HEATING/AIR CONDITIONING	Thermo King T-14 with X430 Compressor, Brushless Evaporator & Condensor Motors	**INCLUDED**	**INCLUDED**	**INCLUDED**
HEATING/AIR CONDITIONING	R407C Refrigerent	**INCLUDED**	**INCLUDED**	**INCLUDED**
HUBOMETER	Veeder Root Mechanical without Tenths, without Guard	**INCLUDED**	**INCLUDED**	**INCLUDED**
INTERIOR LIGHTS	Pretoria LED Interior Lights	**INCLUDED**	**INCLUDED**	**INCLUDED**
INTERIOR MIRRORS	8.25" x 16" Interior Rear View Mirror, Flat Faced	**INCLUDED**	**INCLUDED**	**INCLUDED**
ITS SYSTEM	Clever Devices IVN 4 (AVL/GPS/CAD/Automatic Stop Annunciation) Controller, TCH, Antenna, Wiring, AVC Mic, Cellular (excludes services), WLAN and GPS	**INCLUDED**	**INCLUDED**	**INCLUDED**
MISCELLANOUS	Scissor Style Sunshades--Drivers Windows	**INCLUDED**	**INCLUDED**	**INCLUDED**
MODESTY PANELS	Standard Melamine Panels on Lower Section	**INCLUDED**	**INCLUDED**	**INCLUDED**
PAINT	One Color w/ Black Mask at Windows Single Stage Paint w/Bus numbers only	**INCLUDED**	**INCLUDED**	**INCLUDED**
PASSENGER BARRIERS	Wheelchair Barrier--Curbisde Aft of ADA Area	**NOT AVAILABLE**	**INCLUDED**	**INCLUDED**
PASSENGER BARRIERS	Wheelchair Barrier--Streetside Aft of ADA Area	**NOT AVAILABLE**	**INCLUDED**	**INCLUDED**
PASSENGER SEATING	USSC 4ONE Gemini (30' - SL - 66631 - xxxxx, 35' - SL - 71211 - 007, 40' - SL - 71211 - 006)	**INCLUDED**	**INCLUDED**	**INCLUDED**

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
PASSENGER SIGNALS	Pull Cords (Neutral) with Touch Pad at Wheelchair Location	**INCLUDED**	**INCLUDED**	**INCLUDED**
PASSENGER WINDOWS	Ricon Hidden Frame/Bonded--Full Fixed	**INCLUDED**	**INCLUDED**	**INCLUDED**
PUBLIC ANNOUNCEMENT SYSTEM	PA with Handheld Mic w / (8) Flush Mount Speakers 35' (6) w / 30'	**INCLUDED**	**INCLUDED**	**INCLUDED**
REAR RUN CONTROLS	Engine Run Control and Start Switch, Compartment Light Switch	**INCLUDED**	**INCLUDED**	**INCLUDED**
ROOF HATCHES	Manual Hatch at Front and Rear Positions	**INCLUDED**	**INCLUDED**	**INCLUDED**
SAFETY EQUIPMENT	5LBS ABC Fire Extinguisher (Mounted Behind Driver Seat)	**INCLUDED**	**INCLUDED**	**INCLUDED**
SAFETY EQUIPMENT	95-03-010 Safety Triangles	**INCLUDED**	**INCLUDED**	**INCLUDED**
SCHEDULE RACK	NONE	**NOT INCLUDED**	**NOT INCLUDED**	**NOT INCLUDED**
STANCHIONS/GRAB RAILS	Stainless Steel Vertical Stanchions, Grabrails, and Modesty Panel Tubes	**INCLUDED**	**INCLUDED**	**INCLUDED**
STANCHIONS/GRAB RAILS	Vinyl Coated Nylon Grab Straps--Each	**$20.00**	**$20.00**	**$20.00**
STARTER	Delco 42MT Electric	**INCLUDED**	**INCLUDED**	**INCLUDED**
STEERING SYSTEM	Douglas, Single Tilt, Without Column Turn Signal, Without High-Low Beam Switch	**INCLUDED**	**INCLUDED**	**INCLUDED**
STEERING SYSTEM	Steering Wheel--Standard 20" Non-Padded 3 Spoke Wheel with Center Horn Button	**INCLUDED**	**INCLUDED**	**INCLUDED**
STEERING SYSTEM	TRW TAS6505	**INCLUDED**	**INCLUDED**	**INCLUDED**
STYLING PACKAGES	Standard Styling Package	**INCLUDED**	**INCLUDED**	**INCLUDED**
STYLING PACKAGES	Windshield 2-Piece	**INCLUDED**	**INCLUDED**	**INCLUDED**
SURVEILLANCE CAMERA SYSTEMS	Apollo (8) Standard Definition Color Camera System, 6TB HDD, GPS, Wireless, Impact Sensor ROAD RUNNER 8	**INCLUDED**	**INCLUDED**	**INCLUDED**
TIRES	Agency Supplied Tires	**INCLUDED**	**INCLUDED**	**INCLUDED**
TOWING	None	**INCLUDED**	**INCLUDED**	**INCLUDED**
TRANSMISSION	Voith D864.6, or Latest Model	**INCLUDED**	**INCLUDED**	**INCLUDED**
WHEELCHAIR RAMP	Lift U--Ramp (LU-18 Dual Mode Front Door Ramp Only)	**INCLUDED**	**INCLUDED**	**INCLUDED**
WHEELCHAIR SECUREMENT	USSC--V-PRO-Reliant	**INCLUDED**	**INCLUDED**	**INCLUDED**
WHEELS/RIMS	6 (7) Alcoa Aluminum Polished Finish with Durabrite	**INCLUDED**	**INCLUDED**	**INCLUDED**
DECALS & SIGNAGE	ADA Priority Seat Decals--"PLEASE OFFER THESE SEATS TO THE ELDERLY AND PERSONS WITH DISABILITIES", Black on Clear	**INCLUDED**	**INCLUDED**	**INCLUDED**
DECALS & SIGNAGE	Drivers Instructions & Warning--English, Black on White	**INCLUDED**	**INCLUDED**	**INCLUDED**
DECALS & SIGNAGE	Interior Symbol Decals (3)--ISO Symbols, No Smoking/Eating/Drinking/Radio. Blue on White	**INCLUDED**	**INCLUDED**	**INCLUDED**
DECALS & SIGNAGE	Vehicle Height Decal--English "Caution Clearance Height XX FT XX IN, Black on Yellow	**INCLUDED**	**INCLUDED**	**INCLUDED**

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
DECALS & SIGNAGE	Drivers /Passengers Standee Warning Decal for Florida--"It Is A Violation For This Bus To Be In Operation With Passengers Occupying The Area Forward Of Yellow Line. Therefore Passengers May Not Stand Forward Of The Yellow Line While Bus Is In Motion." White on Black	**INCLUDED**	**INCLUDED**	**INCLUDED**
MANUALS	Drivers, Service, Parts, Electrical, Vendor (Hardcopy) & Compact Disc (CD)--1 Set Hardcopy & 1 CD (Up to 3 buses ordered)	**INCLUDED**	**INCLUDED**	**INCLUDED**

P-18-005 State of Florida Heavy Duty Buses

Options Pricing List

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
ADVERTISING FRAMES	(1) Information Board (#15-55401-000)	$181.00	$181.00	$181.00
ADVERTISING FRAMES	Advertising Frame - Interior 22" X 21",RH Load, Open Back, Clear Aluminum Finish	$175.00	$175.00	$175.00
AIR SYSTEM	Bendix ADIP , Heated, Air Dryer (DUAL AIR DRYERS WITH HALDEX DUAL CONCEP AIR FILTER/OIL SEPARATOR)	$719.00	$719.00	$719.00
AIR SYSTEM	Bendix Puraguard Air / Oil Separator	INCLUDED W/DUAL ADIP DRYER	INCLUDED W/DUAL ADIP DRYER	INCLUDED W/DUAL ADIP DRYER
AIR SYSTEM	Chicago Rawhide Dual Turbo 2000 Air Dryer	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
AIR SYSTEM	Electric Driven 12.5 CFM--BAE Hybrid Package INCLUDES POWER DISTRIBUTION UNIT	NOT AVAILABLE	$13,669.00	$13,669.00
AIR SYSTEM	Graham White Sludge Braker QBA15 Air Dryer	QUOTE	QUOTE	QUOTE
AIR SYSTEM	Graham White Sludge Braker QBA60 Air Dryer	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
AIR SYSTEM	Haldex Consep Moisture Ejector, Heated, at Air Dryer	$556.00	$556.00	$556.00
AIR SYSTEM	Shop Air Connection (Milton 770)	NO CHARGE	NO CHARGE	NO CHARGE
AIR SYSTEM	Shop Air Connection (Milton 727)	NO CHARGE	NO CHARGE	NO CHARGE
AIR SYSTEM	SKF, HCT 2000 Duraguard, 24V Heated, Filtration Plus Air Dryer	INCLUDED	INCLUDED	INCLUDED
AIR SYSTEM	SKF, HCT_2000 Duraguard Air Dryer	INCLUDED	INCLUDED	INCLUDED
AIR SYSTEM	Wabco SS 1800, Heated, Air Dryer	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
ALTERNATOR	BAE APS2 Beltless Alternator DC-DC Converter with High Voltage Sub-Systems	NOT AVAILABLE	SEE HYBRID & ACCESSORY OPTIONS	SEE HYBRID & ACCESSORY OPTIONS
ALTERNATOR	ALTERNATOR MOUNTED Neihoff 803D (525 AMP) with Regulator	$250.00	$250.00	$250.00
ALTERNATOR	Neihoff C703 (330 AMP)	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
ALTERNATOR	ALTERNATOR MOUNTED Neihoff C803 Alternator with Regulator	$250.00	$250.00	$250.00
ALTERNATOR	Vanner 300 AMP DC-DC Converter	SEE ALLISON HYBRID OPTION	SEE ALLISON HYBRID OPTION	SEE ALLISON HYBRID OPTION
AUTOMATIC PASSENGER COUNTER	Clever Devices CleverCount System	$4,149.00	$4,149.00	$4,149.00
AUTOMATIC PASSENGER COUNTER	UTA Automatic Passenger Counter System with GPS, WLAN Capabilities (DOES NOT INCLUDE LANDSIDE EQUIPMENT OR SOFTWARE)	$2,666.00	$2,666.00	$2,666.00

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
AUTOMATIC PASSENGER COUNTER	UTA Automatic Passenger Counter System with GPS, WLAN Capabilities (without APC software & Wi-Fi data transfer) (DOES NOT INCLUDE LANDSIDE EQUIPMENT OR SOFTWARE)	$2,666.00	$2,666.00	$2,666.00
AXLES & SEALS	Hub Piloted Wheels and Axles w/ Grease Seals PER AXLE	($35.00)	($35.00)	($35.00)
AXLES & SEALS	STUD Piloted Wheels, Axles with Oil Seals	QUOTE	QUOTE	QUOTE
AXLES & SEALS	Rear Axle Oil Drain Plug--Magnetic Internal Hex Head Plug	INCLUDED	INCLUDED	INCLUDED
AXLES & SEALS	Stud Piloted Wheels and Axles w/ Grease Seals	QUOTE	QUOTE	QUOTE
BATTERIES	24 Volt to 13.6 Volt DC-DC Converter - VANNER 60 AMP EQUALIZER	INCLUDED	INCLUDED	INCLUDED
BATTERIES	Anderson 350 Jump Start Connector (Each)	$178.00	$178.00	$178.00
BATTERIES	Anderson 350 Jump Start Delete	($178.00)	($178.00)	($178.00)
BATTERIES	Group 31 Batteries - DEKA	$219.00	$219.00	$219.00
BATTERIES	Marine Cabling for Charging System	QUOTE	QUOTE	QUOTE
AUTOMATIC PASSENGER COUNTER	UTA APC SOFTWARE, TRAINING, DOCUMENTATION, WLAN BASE STATION	$63,500.00	$63,500.00	$63,500.00
BATTERIES	Ultra Capacitors –Vanner Start Sentry	QUOTE	QUOTE	QUOTE
BATTERIES	Ultra Capacitors--HBI KA Power WITH (2) DEKA GROUP 31 BATTERIES	$3,818.00	$3,818.00	$3,818.00
BATTERIES	Vanner 85 series Smart Battery Equalizer w/CAN	$515.00	$515.00	$515.00
BATTERIES	Voltage spike arrestor, S.K.I. Products SKI241-101445, or approved equal	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
BIKE RACKS	Byk-Rak Pivot Plate Only	($600.00)	($600.00)	($600.00)
BIKE RACKS	Byk-Rak, 2-Position, Stainless Steel	$220.00	$220.00	$220.00
BIKE RACKS	Byk-Rak, 3-Position, Powder Coated	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
BIKE RACKS	Byk-Rak, 3-Position, Stainless Steel	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
BIKE RACKS	Byk-Rak-Mounting Brackets Only	($650.00)	($650.00)	($650.00)
BIKE RACKS	Sportworks APEX 2, 2-Position, Powder Coated	$236.00	$236.00	$236.00
BIKE RACKS	Sportworks APEX 2, 2-Position, Stainless Steel	$206.00	$206.00	$206.00
BIKE RACKS	Sportworks APEX 3, 3-Position, Powder Coated	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
BIKE RACKS	Sportworks APEX3, 3-Position, Stainless Steel	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
BIKE RACKS	Sportworks DL2, 2-Position, Powder Coated	QUOTE	QUOTE	QUOTE
BIKE RACKS	Sportworks DL2,2-Position, Stainless Steel	$140.00	$140.00	$140.00
BIKE RACKS	Sportworks Mounting Brackets Only	($700.00)	($700.00)	($700.00)
BIKE RACKS	Sportworks Pivot Plate Only	($550.00)	($550.00)	($550.00)
BIKE RACKS	Sportworks Trilogy (DL3), 3-Position, Powder Coated	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
BIKE RACKS	Sportworks Trilogy (DL3), 3-Position, Stainless Steel	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
BRAKES	Automatic Traction Control-(ATC)	$121.00	$121.00	$121.00

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
BRAKES	Four Wheel Disc Brakes with ABS	$3,915.00	$3,915.00	$3,915.00
BRAKES	MGM E-Stroke Brake Wear Monitoring System	QUOTE	QUOTE	QUOTE
CNG	201X Cummins ISL-G 280 HP, with (4) 120" III Fuel Tanks	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
CNG	201X Cummins ISL-G 280 HP, with (4) 85" & (4) 120" Type III Fuel Tanks	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
CNG	201X Cummins ISL-G 280 HP, with (8) 85" III Fuel Tanks	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
CNG	20XX Cummins L9N 280 HP, with Minimum 17,500 SCF	$49,371.00	$49,371.00	$49,371.00
CNG	Add Second Fast Fill to Low Mount Position	$820.00	$820.00	$820.00
CNG	Electric Solenoid Fuel Tank Shut-Off Valves	QUOTE	QUOTE	QUOTE
CNG	Manual Fuel Tank Shut-Off Valves	INCLUDED W/CNG	INCLUDED W/CNG	INCLUDED W/CNG
CNG	Smart Gauge fuel System Monitoring Gauge (includes tank upgrade to electric solenoids)	QUOTE	QUOTE	QUOTE
COMMUNICATIONS SYSTEM	Antenna Specialist ASP 572 Antenna	$75.00	$75.00	$75.00
COMMUNICATIONS SYSTEM	Antenna Specialist ASP 930T Antenna with RG58 coax cable and TNC connector	QUOTE	QUOTE	QUOTE
COMMUNICATIONS SYSTEM	Antenna Specialist ASP 931 Antenna	$70.00	$70.00	$70.00
COMMUNICATIONS SYSTEM	GPS Antenna (Trimble 502 Model 18334)	$500.00	$500.00	$500.00
COMMUNICATIONS SYSTEM	Harris XG-25M	QUOTE	QUOTE	QUOTE
COMMUNICATIONS SYSTEM	Motorola APX 4500	$4,983.00	$4,983.00	$4,983.00
COMMUNICATIONS SYSTEM	Motorola APX 6500	$6,979.00	$6,979.00	$6,979.00
COOLING SYSTEM	Auxilary Coolant Heater	QUOTE	QUOTE	QUOTE
COOLING SYSTEM	Breeze Constant Tension Clamps	$25.00	$25.00	$25.00
COOLING SYSTEM	E - Coat Radiator, Charge Air Cooler, & Hydraulic Cooler	$1,054.00	$1,054.00	$1,054.00
COOLING SYSTEM	Masabi Radiator	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
COOLING SYSTEM	Modine Electric Cooling System without E-Coat - Panel Mount	($900.00)	($900.00)	($900.00)
COOLING SYSTEM	Modine Hydraulic Cooling Fan System	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
COOLING SYSTEM	Modine Side by Side Plate Fin Radiator	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
COOLING SYSTEM	Oetiker Constant Torque Clamps	INCLUDED	INCLUDED	INCLUDED
COOLING SYSTEM	Radiator Tank Guard	$363.00	$363.00	$363.00
COOLING SYSTEM	Radiator Tank Guard with Splash Shield	$439.00	$439.00	$439.00
DECALS & SIGNAGE	Wheechair Securement Decals--"WHEELCHAIR SEATING AREA SECUREMENTS ARE LOCATED BELOW THESE SEATS", Black on Optically Clear	$15.00	$15.00	$15.00
DECALS & SIGNAGE	Trilingual Decals	$150.00	$150.00	$150.00

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
DECALS & SIGNAGE	Yield Sign Decal	INCLUDED WITH YIELD SIGN	INCLUDED WITH YIELD SIGN	INCLUDED WITH YIELD SIGN
DESTINATION SIGN SOFTWARE	Hanover Wireless Programming	$769.00	$769.00	$769.00
DESTINATION SIGN SOFTWARE	Luminator Destination Sign Wireless Programming	$1,063.00	$1,063.00	$1,063.00
DESTINATION SIGN SOFTWARE	Luminator Program Software	NO CHARGE	NO CHARGE	NO CHARGE
DESTINATION SIGN SOFTWARE	TwinVision Program Software	NO CHARGE	NO CHARGE	NO CHARGE
DESTINATION SIGNS	200 x 24 Front Sign Amber Color - Hanover	$350.00	$350.00	$350.00
DESTINATION SIGNS	200 x 24 Front Sign White Color - Hanover	$756.00	$756.00	$756.00
DESTINATION SIGNS	Full Color Sign System - Hanover	$2,445.00	$2,445.00	$2,445.00
DESTINATION SIGNS	Hanover 100% Amber LED Sign (17 x 160)--Front ,Side, Rear	($370.00)	($370.00)	($370.00)
DESTINATION SIGNS	Hanover 100% Full Color LED Sign (17 x 160)--Front ,Side, Rear	$2,445.00	$2,445.00	$2,445.00
DESTINATION SIGNS	Hanover Program Software	NO CHARGE	NO CHARGE	NO CHARGE
DESTINATION SIGNS	Hanover--Add Front Run Sign--Amber LED	$738.00	$738.00	$738.00
DESTINATION SIGNS	Hanover--Add Front Run Sign--Color LED	$956.00	$956.00	$956.00
DESTINATION SIGNS	Hanover--Add Front Run Sign--White LED	$906.00	$906.00	$906.00
DESTINATION SIGNS	Hanover--Delete Rear Sign	($800.00)	($800.00)	($800.00)
DESTINATION SIGNS	Luminator GEN 4 Horizon 100% Amber LED Sign (16x 160)--Front, Side , and Rear	NO CHARGE	NO CHARGE	NO CHARGE
DESTINATION SIGNS	Luminator GEN 4 Horizon 100% Silver LED Sign (16 x 160)--Front, Side , and Rear	NO CHARGE	NO CHARGE	NO CHARGE
DESTINATION SIGNS	Luminator InfoLite 24" monitor	$4,597.00	$4,597.00	$4,597.00
DESTINATION SIGNS	Luminator InfoTransit 24" monitors - Full System w/2 Monitors	$16,204.00	$16,204.00	$16,204.00
DESTINATION SIGNS	Luminator RearView Camera Integraded into Rear LED Sign - Amber or White	$188.00	$188.00	$188.00
DESTINATION SIGNS	Luminator Rearview Camera without Rear LED Sign (Not Available with Camera #12)	$500.00	$500.00	$500.00
DESTINATION SIGNS	Luminator Spectrum 100% Full Color LED GEN IV Front Sign (24 x 200)	$2,175.00	$2,175.00	$2,175.00
DESTINATION SIGNS	Luminator Titan Amber Series Sign (24 x 200)--Front, Side, and Rear	$425.00	$425.00	$425.00
DESTINATION SIGNS	Luminator Titan Silver Series LED Sign (24 X 200)--Front, Side, and Rear	$425.00	$425.00	$425.00
DESTINATION SIGNS	Luminator/Twinvision--Add Front Run Sign--Amber LED	$500.00	$500.00	$500.00
DESTINATION SIGNS	Luminator/Twinvision--Add Front Run Sign--Color LED	$1,250.00	$1,250.00	$1,250.00
DESTINATION SIGNS	Luminator/Twinvision--Add Front Run Sign--Silver LED	$500.00	$500.00	$500.00
DESTINATION SIGNS	Luminator--Delete Rear Sign	($700.00)	($700.00)	($700.00)

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
DESTINATION SIGNS	TwinVision Smart Series 3 100% Amber LED Sign (16 x 160)--Front, Side, and Rear	NO CHARGE	NO CHARGE	NO CHARGE
DESTINATION SIGNS	TwinVision Smart Series 3 100% Silver LED Sign (16 X 160)-- Front, Side, and Rear	NO CHARGE	NO CHARGE	NO CHARGE
DOOR SYSTEM	Add Exterior Air Release (Front Door Control Valve)	$44.00	$44.00	$44.00
DOOR SYSTEM	Add Push Button Door Controls	$70.00	$70.00	$70.00
DOOR SYSTEM	Add Vapor 5 Position Analog Controller	INCLUDED	INCLUDED	INCLUDED
DOOR SYSTEM	Add--Vapor Activair Differential Engine for Slide-Glide Doors	$295.00	$295.00	$295.00
DOOR SYSTEM	Add--Vapor CLASS Acoustic (Photo Sensor)	$2,708.00	$2,708.00	$2,708.00
DOOR SYSTEM	Add--Vapor Digital Door Control - DDC	$521.00	$521.00	$521.00
DOOR SYSTEM	Add--Vapor Electric Transit Operator - ETO Front and Rear Doors	$4,000.00	$4,000.00	$4,000.00
DOOR SYSTEM	Add--Vapor Light Touch Bars	$435.00	$435.00	$435.00
DOOR SYSTEM	Add--Vapor Optical Pressure Switch - OPS	$595.00	$595.00	$595.00
DOOR SYSTEM--REAR	Add Touch Tape at Rear Doors	NO CHARGE	NO CHARGE	NO CHARGE
DRIVER BARRIER	Drivers Barrier Storage Box Mounted to Driver's Barriers (Standard)	INCLUDED	INCLUDED	INCLUDED
DRIVER BARRIER	Driver's Security Enclosure Arow MV3080018	$4,890.00	$4,890.00	$4,890.00
DRIVER BARRIER	Flat Melamine, Two Piece	INCLUDED	NOT AVAILABLE	NOT AVAILABLE
DRIVER BARRIER	Plexiglass Drivers Security Enclosure Door	$835.00	$835.00	$835.00
DRIVER BARRIER	Wrap Around Drivers Barrier	NOT AVAILABLE	INCLUDED	INCLUDED
DRIVER BARRIER	Wraparound, without schedule holders, with drivers barrier grap handle	NOT AVAILABLE	INCLUDED	INCLUDED
DRIVER CONTROLS	12 V Cigarette Light Adaptor for PC auxilary power-Drivers area	$100.00	$100.00	$100.00
DRIVER CONTROLS	Kongsberg Adjustable Throttle and Brake Pedal	$925.00	$925.00	$925.00
DRIVER CONTROLS	Teleflex Adjustable Throttle and Brake Pedal	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
DRIVER HEATERS	Dash Fan	$89.00	$89.00	$89.00
DRIVERS SEAT	Add Adjustable D-Ring to Recaro Ergo Metro	$250.00	$250.00	$250.00
DRIVERS SEAT	Add Adustable D-Ring to USSC Seat	$85.00	$85.00	$85.00
DRIVERS SEAT	Add Drivers Seat Vacancy Alarm to Recaro Ergo Metro	$120.00	$120.00	$120.00
DRIVERS SEAT	Add Drivers Seat Vacancy Alarm to USSC Seat	$100.00	$100.00	$100.00
DRIVERS SEAT	Add Headrest to Recaro Ergo Metro	NO CHARGE	NO CHARGE	NO CHARGE
DRIVERS SEAT	Add Headrest to USSC Seat	$50.00	$50.00	$50.00
DRIVERS SEAT	Add Orange Shoulder Belt to Recaro Ergo Metro	$250.00	$250.00	$250.00
DRIVERS SEAT	Add Orange Shoulder Belt to USSC Seat	$250.00	$250.00	$250.00
DRIVERS SEAT	Add Seat Belt Alarm to Recaro Ergo Metro	$35.00	$35.00	$35.00
DRIVERS SEAT	Add Seat Belt Alarm to USSC Seat	$50.00	$50.00	$50.00
DRIVERS SEAT	Add Vinyl Upholstery to Recaro Ergo Metro	NO CHARGE	NO CHARGE	NO CHARGE

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
DRIVERS SEAT	Add Vinyl Upholstery to USSC Seat	NO CHARGE	NO CHARGE	NO CHARGE
DRIVERS SEAT	Recaro Ergo Metro, with Fabric, with 3-Point Belts (Lap & Shoulder)	($325.00)	($325.00)	($325.00)
DRIVERS SEAT	USSC 9100 ALX, with Fabric, with 2-Point Belt (Lap)	($375.00)	($375.00)	($375.00)
DRIVERS SEAT	USSC 9100 ALX, with Fabric, with 3-Point Belt (Lap & Shoulder)	($125.00)	($125.00)	($125.00)
DRIVERS SEAT	USSC G2 Evolution, with Fabric, with 2-Point Belt (Lap)	($200.00)	($200.00)	($200.00)
DRIVERS SEAT	USSC G2 Evolution, with Fabric, with 3-Point Belt (Lap & Shoulder)	INCLUDED	INCLUDED	INCLUDED
DRIVERS SEAT	USSC G2A Evolution, with Fabric, with 2-Point Belt (Lap)	($200.00)	($200.00)	($200.00)
DRIVERS SEAT	USSC Q Series, with Fabric, with 2-Point Belt (Lap) - Q900	($200.00)	($200.00)	($200.00)
DRIVERS SEAT	USSC Q Series, with Fabric, with 3-Point Belt (Lap & Shoulder) - Q900	$50.00	$50.00	$50.00
ELECTRICAL EQUIPMENT CABINET	33"H x 20"D x 22.5"W, 1-Door	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
ELECTRICAL EQUIPMENT CABINET	33"H x 20"D x 22.5"W, 1-Door, Louvered Back Panel	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
ELECTRICAL EQUIPMENT CABINET	33"H x 20"D x 22.5"W, 2-Doors	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
ELECTRICAL EQUIPMENT CABINET	8.25"H x 20"W x 19"D, 1-Door, Curbside Wheelhousing Storage Box	$450.00	$450.00	$450.00
ELECTRICAL EQUIPMENT CABINET	Add 5/16" Square Key Lock - Each	$75.00	$75.00	$75.00
ELECTRICAL EQUIPMENT CABINET	Add Exhaust Ventilation Fan - Each (2 Fans Included)	INCLUDED	INCLUDED	INCLUDED
ELECTRICAL EQUIPMENT CABINET	Add Standard Key Lock--Each	$75.00	$75.00	$75.00
ENGINE OIL SYSTEM	Femco Auto Drain	$55.00	$55.00	$55.00
ENGINE OIL SYSTEM	KP Series Pushbutton Sampling Valve - engine oil (Checkfluid KP18NV)	$44.00	$44.00	$44.00
ENGINE OIL SYSTEM	Sample Test Port--Titan Probalizer OD-1014	$44.00	$44.00	$44.00
ENGINE OIL SYSTEM	Spinner II Bypass Filter System	$1,156.00	$1,156.00	$1,156.00
EXTERIOR LIGHTS	2 LED Headlights (High Beam)	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
EXTERIOR LIGHTS	2 LED Headlights (Low Beam Only) - Peterson	($250.00)	($250.00)	($250.00)
EXTERIOR LIGHTS	7" Diameter LED Tail Lights-Turn, Tail, Stop, Reverse - Reverse Lamp is 4"	$235.00	$235.00	$235.00
EXTERIOR LIGHTS	Add 18" Amber LED Strip Brake Light--Each	$80.00	$80.00	$80.00
EXTERIOR LIGHTS	Add 18" Red LED Strip Brake Light--Each	$75.00	$75.00	$75.00
EXTERIOR LIGHTS	Add 4" Diameter LED Brake Light--Each	$65.00	$65.00	$65.00

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
EXTERIOR LIGHTS	Add 7" Diameter LED Brake Light--Each	$80.00	$80.00	$80.00
EXTERIOR LIGHTS	Add Amber Triangle Style LED "Yield" Sign	$640.00	$640.00	$640.00
EXTERIOR LIGHTS	Add Red LED "STOP" Sign	$470.00	$470.00	$470.00
EXTERIOR LIGHTS	Dual Halogen Headlights (Low & High Beam Only)	($500.00)	($500.00)	($500.00)
EXTERIOR LIGHTS	Fog Lights	QUOTE	QUOTE	QUOTE
EXTERIOR MIRRORS	5" Mirror Front Bike Rack Mirror	$30.00	$30.00	$30.00
EXTERIOR MIRRORS	Add Turn Signal Indicator on Exterior Mirror Head per Side	$100.00	$100.00	$100.00
EXTERIOR MIRRORS	B&R 10"x13", 1-Piece, Heated, Remote Control (Both Sides)	($35.00)	($35.00)	($35.00)
EXTERIOR MIRRORS	B&R 8"x10", 2-Piece, Heated, Remote Control (Both Sides)	NO CHARGE	NO CHARGE	NO CHARGE
EXTERIOR MIRRORS	B&R 8"x15", 2-Piece, Heated, Remote Control (Both Sides)	NO CHARGE	NO CHARGE	NO CHARGE
EXTERIOR MIRRORS	B&R 8"x8", 1-Piece, Remote Control Both Sides, Stainless Steel Arms	($100.00)	($100.00)	($100.00)
EXTERIOR MIRRORS	Delete Remote Control (Per Side)	($45.00)	($45.00)	($45.00)
FARE COLLECTION	Add Farebox Lamp, Ceiling mounted - Peterson	$25.00	$25.00	$25.00
FARE COLLECTION	GFI 41" Tall Odyssey - Without Trim, Standard Saturn 6000 Card Reader	$14,361.00	$14,361.00	$14,361.00
FARE COLLECTION	Install Customer Provided Farebox Base Plate	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
FIRE SUPPRESSION SYSTEM	Add Kidde Armored LTD	$415.00	$415.00	$415.00
FIRE SUPPRESSION SYSTEM	Add Kidde Optical Sensor (each)	$750.00	$750.00	$750.00
FIRE SUPPRESSION SYSTEM	Add Kidde TLSE	QUOTE	QUOTE	QUOTE
FIRE SUPPRESSION SYSTEM	Amerex Safety-Net Fire Suppression & 4 Sensor Methane Detection (CNG only)	$2,261.00	$2,261.00	$2,261.00
FIRE SUPPRESSION SYSTEM	Amerex V-25 Fire Suppression System	($369.00)	($369.00)	($369.00)
FIRE SUPPRESSION SYSTEM	Fogmaker Water Mist Fire Suppression & (4) Sensor Methane Detection (CNG only)	$2,155.00	$2,155.00	$2,155.00
FIRE SUPPRESSION SYSTEM	Kidde Dual Spectrum LTD Fire Detection and Suppression System	$228.00	$228.00	$228.00
FIRE SUPPRESSION SYSTEM	Kidde Dual Spectrum with LTD and (4) Sensor Methane Detection (CNG only)	$2,174.00	$2,174.00	$2,174.00
FLOORING	Altro Transflor	$400.00	$400.00	$400.00
FLOORING	Composite Sub Floor - Rear Deck and Low Floor Section	$2,500.00	$2,500.00	$2,500.00
FLOORING	Stainless Steel Trim on Risers and Wheelhousings	$300.00	$300.00	$300.00
FLOORING	Transitflor Rubber Flooring	INCLUDED	INCLUDED	INCLUDED
FRAME	Engine Skid Protection W/ Extended Tow Eyes & 2" Thick x 2" Wide Wear Plate	$230.00	$230.00	$230.00
FRAME	Engine Skid Protection with Extended Tow Eyes	$125.00	$125.00	$125.00
FRAME	Frame Undercoating	INCLUDED	INCLUDED	INCLUDED
FRAME	Reinforced A-Post Skid Plates (Per Side)	$50.00	$50.00	$50.00

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
FUEL SYSTEM	Davco 384 Fuel Filter, Heated	$475.00	$475.00	$475.00
FUEL SYSTEM	Davco 384 Fuel Filter, Non-Heated	$375.00	$375.00	$375.00
FUEL SYSTEM	Emco Wheaton Posi Lock 105 (Flip Cap or Twist Cap) - Diesel Fuel	INCLUDED	INCLUDED	INCLUDED
GAUGES--DRIVERS DASH	Add Auxiliary Stop Request Light	$35.00	$35.00	$35.00
GAUGES--DRIVERS DASH	Add Engine Hour Meter	$50.00	$50.00	$50.00
GAUGES--DRIVERS DASH	Add Fuel Gauge--CNG	$50.00	$50.00	$50.00
GAUGES--DRIVERS DASH	Add Fuel Gauge--Diesel	$50.00	$50.00	$50.00
GAUGES--DRIVERS DASH	Add Fuel Gauge--Diesel Hybrid	$50.00	$50.00	$50.00
GAUGES--DRIVERS DASH	Add Low Fuel Alarm	NO CHARGE	NO CHARGE	NO CHARGE
GAUGES--DRIVERS DASH	Add Low Fuel Warning Indicator	NO CHARGE	NO CHARGE	NO CHARGE
GAUGES--DRIVERS DASH	Add Mutil Function Display (MFD)	$2,706.00	$2,706.00	$2,706.00
HEATING/AIR CONDITIONING	HVAC MCC Electric System with Alternator	$7,091.00	$7,091.00	$7,091.00
HEATING/AIR CONDITIONING	HVAC MCC with brushless condensor and evaporator motors and 05G Compressor, Eco Temp Controls	($4,342.00)	($4,342.00)	($4,342.00)
HEATING/AIR CONDITIONING	SanUVAire- Safe Breathe Air Purification System	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
HEATING/AIR CONDITIONING	Sutrak All-Electric HVAC SYSTEM--(Roof Mounted/Rear Mounted HVAC system)	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
HEATING/AIR CONDITIONING	Thermo King Pressure and Return Display Mounted to Unit	INCLUDED	INCLUDED	INCLUDED
HEATING/AIR CONDITIONING	Thermo King T-14 All-Electric HVAC System -BAE Hybrid	NOT AVAILABLE	$2,395.00	$2,395.00
HEATING/AIR CONDITIONING	Thermo King T-14 with S391 Screw Compressor, Brushless Evaporator & Condensor Motors	$1,275.00	$1,275.00	$1,275.00
HEATING/AIR CONDITIONING	Thermo King T-14 with S616 Screw Compressor, Brushless Evaporator & Condensor Motors	$3,399.00	$3,399.00	$3,399.00
HEATING/AIR CONDITIONING	Thermo-King All-Electric HVAC System w/ HVDM--Allison Hybrid	QUOTE	QUOTE	QUOTE
HUBOMETER	Add Hubodometer Guard	$75.00	$75.00	$75.00
HUBOMETER	E J Ward Data System (Includes CANceiver, Display Unit, and Antenna)	$525.00	$525.00	$525.00
HUBOMETER	Engler (Stemco) Mechanical without Tenths, without Guard	NO CHARGE	NO CHARGE	NO CHARGE
HUBOMETER	S/A Fleetwatch Data Logger JX 55	QUOTE	QUOTE	QUOTE
HYBRID ELECTRIC SYSTEM	201X Cummins B6.7 280HP W/Allison H40EP Parallel Electric Drive System with Vanner HBA SUBJECT TO BUY AMERICA AVAILABILITY	$211,806.00	$211,806.00	$211,806.00
HYBRID ELECTRIC SYSTEM	201X Cummins B6.7 280HP W/BAE Series HybriDrive System APS2 with 32K Batteries	NOT AVAILABLE	$220,531.00	$220,531.00
HYBRID ELECTRIC SYSTEM	201X Cummins ISB 280HP W/Allison H40EP Parallel Electric Drive System with Vanner HBA	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
HYBRID ELECTRIC SYSTEM	201X Cummins ISB 280HP W/BAE Series HybriDrive System APS2	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
HYBRID ELECTRIC SYSTEM	Add BAE Electric Accessories R.E.A.L. System--(Diesel or CNG Engines Only)	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
HYBRID ELECTRIC SYSTEM	Add Extended Range Batteries--BAE	NOT AVAILABLE	QUOTE	QUOTE
HYBRID ELECTRIC SYSTEM	Add Full Electric Air Compressor Package--BAE (Includes Power Distribution Unit)	NOT AVAILABLE	$13,669.00	$13,669.00
HYBRID ELECTRIC SYSTEM	Add Full Electric Steering Package--BAE (Requires Full Electric Air Compressor)	NOT AVAILABLE	$3,490.00	$3,490.00
INTERIOR MIRRORS	12" Convex at Rear Door Stanchion	INCLUDED	INCLUDED	INCLUDED
INTERIOR MIRRORS	4.75" x 15" Interior Mirror, Flat Faced	NO CHARGE	NO CHARGE	NO CHARGE
INTERIOR MIRRORS	6" Flat Faced Spot Mirror at Bottom of Front Destination Sign Compartment	INCLUDED	INCLUDED	INCLUDED
ITS SYSTEM	Avail IVU with MDC, GPS, APC, and WLAN	QUOTE	QUOTE	QUOTE
ITS SYSTEM	Avail System Pre-Wire (IVU, MDT, APC, Fare Box)	QUOTE	QUOTE	QUOTE
ITS SYSTEM	Clever Devices Automatic Vehicle Monitoring System - AVM Software Incremental Services and Data Dictionary	$5,511.00	$5,511.00	$5,511.00
ITS SYSTEM	Clever Devices BusTime System - Bus Time Software & Incremental Services	$3,187.00	$3,187.00	$3,187.00
ITS SYSTEM	Clever Devices CleverCAD System - Clever CAD Software, Modem and Incremental Services	$5,040.00	$5,040.00	$5,040.00
ITS SYSTEM	Clever Devices CleverVision (2 Signs)	$20,804.00	$20,804.00	$20,804.00
ITS SYSTEM	Clever Devices Secure Bus Access System	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
ITS SYSTEM	Clever Devices Turn Warning System	$4,029.00	$4,029.00	$4,029.00
ITS SYSTEM	Intelligent Vehicle System Prewire Only (Pending System Specification)	QUOTE	QUOTE	QUOTE
ITS SYSTEM	Luminator InfoLite--2 Monitors (18.5") Proxys Module	$6,597.00	$6,597.00	$6,597.00
ITS SYSTEM	Luminator InfoLite--Upgrade to 29" Monitors FROM 18.5", per Monitor	$1,715.00	$1,715.00	$1,715.00
ITS SYSTEM	Luminator InfoLite--Upgrade to 37"Monitors FROM 18.5", per Monitor	$2,575.00	$2,575.00	$2,575.00
ITS SYSTEM	Luminator InfoTransit--2 Monitors (18.5") Proxys Module	$13,061.00	$13,061.00	$13,061.00
ITS SYSTEM	Luminator InfoTransit--Upgrade to 29" Monitors from 18.5", per Monitor	$2,430.00	$2,430.00	$2,430.00
ITS SYSTEM	Luminator InfoTransit--Upgrade to 37" Monitors from 18.5", per Monitor	$2,860.00	$2,860.00	$2,860.00
ITS SYSTEM	MobileEye Collision Avoidance System	QUOTE	QUOTE	QUOTE
ITS SYSTEM	None - Delete Clever Devices IVN4 & Integrated UTA APC	($17,169.00)	($17,169.00)	($17,169.00)
ITS SYSTEM	Opticom Traffic Signal Priority	QUOTE	QUOTE	QUOTE
ITS SYSTEM	Transloc Transit Visualization System AVL	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
MISCELLANOUS	Drivers Coat Hook	INCLUDED	INCLUDED	INCLUDED
MISCELLANOUS	Euramatic Cup Holder	$25.00	$25.00	$25.00
MISCELLANOUS	Registration Card holder	$25.00	$25.00	$25.00

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
MISCELLANOUS	Roller Style Sunshades--Drivers Windows	($50.00)	($50.00)	($50.00)
MISCELLANOUS	Stainless Steel Waste Basket and Bracket	$290.00	$290.00	$290.00
MODESTY PANELS	Front Door Modesty Panel	INCLUDED	INCLUDED	INCLUDED
MODESTY PANELS	Lower Modesty Panel Forward of Rear Door	$125.00	$125.00	$125.00
MODESTY PANELS	Melamine Panel Lower Section (Aft Rear Door)	INCLUDED	INCLUDED	INCLUDED
MODESTY PANELS	Quick Changing Glazing Upper Clear Plexiglas Modesty Panels Both Sides of Rear Exit Door	$400.00	$400.00	$400.00
MODESTY PANELS	Upper Clear Plexiglas Modesty Panel Forward Rear Door	$200.00	$200.00	$200.00
PAINT	Add Roof Numbers Decals	$100.00	$100.00	$100.00
PAINT	Add--Additional Color--Per Pass	$2,150.00	$2,150.00	$2,150.00
PAINT	Add--Clear Coat - per Paint Pass	$450.00	$450.00	$450.00
PAINT	Custom Paint / Decal Design (Per Spec)	QUOTE	QUOTE	QUOTE
PASSENGER SEATING	Add--3rd Step To Perimeter Seating (Except Settee)	QUOTE	QUOTE	QUOTE
PASSENGER SEATING	Add--Hinged Rear SeHee	QUOTE	QUOTE	QUOTE
PASSENGER SEATING	Add--USB Charging Ports at Passenger Locations	QUOTE	QUOTE	QUOTE
PASSENGER SEATING	AMESCO Insight Prime Plus	$749.00	$3,008.00	$4,490.00
PASSENGER SEATING	AMSECO Insight	$1,183.00	$3,645.00	$6,301.00
PASSENGER SEATING	AMSECO Vision	$2,521.00	$5,118.00	$6,809.00
PASSENGER SEATING	Kiel Citos	QUOTE	QUOTE	QUOTE
PASSENGER SEATING	Kiel North America Intra	QUOTE	QUOTE	QUOTE
PASSENGER SEATING	Prices Valid Only for Seat Layouts	SL-66631	SL-71211-007	SL-71211-006
PASSENGER SIGNALS	Stop Request Button At Rear Door Stanchion	$35.00	$35.00	$35.00
PASSENGER SIGNALS	Touch Tape (At Window Mullions)	$750.00	$930.00	$1,080.00
PASSENGER WINDOWS	Add Thermo Guard to Arow Hidden Frame/Bonded	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
PASSENGER WINDOWS	Add Thermo Guard to Arow Standard Frame	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
PASSENGER WINDOWS	Add Thermo Guard to Ricon Hidden Frame/Bonded	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
PASSENGER WINDOWS	Add Thermo Guard to Ricon Standard Frame	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
PASSENGER WINDOWS	Add Window Guards (Acrylic or Film) 6 MIL Film	$874.00	$1,095.00	$1,313.00
PASSENGER WINDOWS	Arow Hidden Frame/Bonded--Full Fixed	$2,150.00	$2,450.00	$2,410.00
PASSENGER WINDOWS	Arow Standard Frame, Safety Glass--Full Fixed	($685.00)	($950.00)	($1,000.00)
PASSENGER WINDOWS	Arow Standard Frame, Safety Glass--Full Sliders	$524.00	$674.00	$1,035.00

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
PASSENGER WINDOWS	Openable windows with a fixed transom panel and sliding lower panels	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
PASSENGER WINDOWS	Openable windows with full-height sliding panels	QUOTE	QUOTE	QUOTE
PASSENGER WINDOWS	Openable windows with inward-opening transom panels - Arow Hidden Frame/Bonded - Transom	$4,133.00	$5,256.00	$6,066.00
PASSENGER WINDOWS	Openable windows with sliding transom panels	QUOTE	QUOTE	QUOTE
PASSENGER WINDOWS	Ricon Standard Frame, Safety Glass--Full Fixed	($1,309.00)	($1,764.00)	($1,986.00)
PASSENGER WINDOWS	Ricon Standard Frame, Safety Glass--Full Sliders	($701.00)	($946.00)	($908.00)
PUBLIC ANNOUNCEMENT SYSTEM	(1) Interior/Both/Exterior Speaker Selct Toggle Switch without Guard & (1) Rheostat Volume Control with XLR Mic Jack	INCLUDED WITH DELETE ITS	INCLUDED WITH DELETE ITS	INCLUDED WITH DELETE ITS
PUBLIC ANNOUNCEMENT SYSTEM	Boom Microphone--Soundview SVA50SF (24") without ON/OFF Switch on Microphone, Momentary Button toe Switch, Floor Bracket Mounted	$100.00	$100.00	$100.00
PUBLIC ANNOUNCEMENT SYSTEM	Clever Devices Automated Voice Announcement System - LED Sign, AVA Software, Incremental Services	$3,721.00	$3,721.00	$3,721.00
PUBLIC ANNOUNCEMENT SYSTEM	Clever Devises - Speakeasy II	$1,950.00	$1,950.00	$1,950.00
PUBLIC ANNOUNCEMENT SYSTEM	Hanover AVA System (Voice)	QUOTE	QUOTE	QUOTE
PUBLIC ANNOUNCEMENT SYSTEM	Luminator VAS System	$7,821.00	$7,821.00	$7,821.00
REAR RUN CONTROLS	Radiator Electric Fan Controls--Fan Reverse Flow Momentary Toggle Switch & Indicator Lamp	INCLUDED	INCLUDED	INCLUDED
REAR RUN CONTROLS	Rear Hand Thottle Control--Rheostat Variable Speed Control with Toggle Witch & Guard	$156.00	$156.00	$156.00
REAR RUN GAUGES	Add A/C Hour Meter - Programmable Gauge	$100.00	$100.00	$100.00
REAR RUN GAUGES	Add Coolant Temperature - Electrical - Programmable Gauge	$100.00	$100.00	$100.00
REAR RUN GAUGES	Add Coolant Temperature--Mechanial	$155.00	$155.00	$155.00
REAR RUN GAUGES	Add Engine Hour Meter - Programmable Gauge	$100.00	$100.00	$100.00
REAR RUN GAUGES	Add Oil Pressure--Electrical	INCLUDED	INCLUDED	INCLUDED
REAR RUN GAUGES	Add Oil Pressure--Mechanical	$155.00	$155.00	$155.00
REAR RUN GAUGES	Add Transmission Temperature - Electrical - Programmable Gauge	$100.00	$100.00	$100.00
REAR RUN GAUGES	Add Transmission Temperature--Mechanical	$155.00	$155.00	$155.00
REAR RUN GAUGES	Add Voltmeter (12V or 24V) - Programmable Gauge	$100.00	$100.00	$100.00
ROOF HATCHES	Delete (1) Roof hatch	($240.00)	($240.00)	($240.00)
SAFETY EQUIPMENT	Bio- Hazard Disposal Kit	$35.00	$35.00	$35.00
SAFETY EQUIPMENT	Blood Born Pathogens Kit	$35.00	$35.00	$35.00

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
SAFETY EQUIPMENT	24 Unit First Aid Kit	$75.00	$75.00	$75.00
SAFETY EQUIPMENT	Wheel Chocks (Per Set)	$35.00	$35.00	$35.00
SCHEDULE RACK	(1) Schedule Holder OBIC 20/9 4PW-49/923BO- 4 Slots,Gray Color	$335.00	$335.00	$335.00
SCHEDULE RACK	22" x 21" Black, RH Load Open Back	$175.00	$175.00	$175.00
SCHEDULE RACK	Innocom Schedule Racks 3.75" x 7" x 1.5"	$25.00	$25.00	$25.00
SCHEDULE RACK	Innocom Schedule Racks 8.62" x 1 1" x 1"	$25.00	$25.00	$25.00
SCHEDULE RACK	OBIC To (4) Quad Pamphlet & (1) Single Pamphlet Holders	QUOTE	QUOTE	QUOTE
SCHEDULE RACK	Transit Info Products OBICT10P2LTRMC	$465.00	$465.00	$465.00
SCHEDULE RACK	Transit Information Products -19"x 21" OBIC 19/214P1LTRMC	$245.00	$245.00	$245.00
STANCHIONS/GRAB RAILS	Add Farebox Grabrail	INCLUDED	INCLUDED	INCLUDED
STANCHIONS/GRAB RAILS	Horizontal Grabrail on Curbside & Streetside Wheelhousing	INCLUDED	INCLUDED	INCLUDED
STANCHIONS/GRAB RAILS	SSTL Spring Loaded Grab Handle--Each	$130.00	$130.00	$130.00
STANCHIONS/GRAB RAILS	Vehicle Stanchion at Front Wheel Wells--Each	$50.00	$50.00	$50.00
STANCHIONS/GRAB RAILS	Yellow Powder Coated Vertical Stanchions Only	$200.00	$200.00	$200.00
STANCHIONS/GRAB RAILS	Yellow Powder Coated Vertical Stanchions, Grab Rails, and Modesty Panel Tubes	$400.00	$400.00	$400.00
STARTER	Delco 39MT Electric	NO CHARGE	NO CHARGE	NO CHARGE
STEEERING SYSTEM	VIP Textured Steering Wheel	NO CHARGE	NO CHARGE	NO CHARGE
STEERING SYSTEM	Steering Box--TRW TAS6505	INCLUDED	INCLUDED	INCLUDED
STEERING SYSTEM	TRW Electric Assisted Steering	$2,650.00	$2,650.00	$2,650.00
STYLING PACKAGES	BRT Front Cap Styling Only	QUOTE	QUOTE	QUOTE
STYLING PACKAGES	BRT Front Cap, Rear Cap and Engine Door Styling	QUOTE	QUOTE	QUOTE
STYLING PACKAGES	Low Floor Plus Enhanced Styling Package	$12,750.00	$12,750.00	$12,750.00
STYLING PACKAGES	BRT Plus Enhanced Styling Package	QUOTE	QUOTE	QUOTE
STYLING PACKAGES	BRT Roof Fairings, Front or Rear (each)	QUOTE	QUOTE	QUOTE
STYLING PACKAGES TROLLEY	Cow Catcher on Front Bumper	$3,786.00	$3,786.00	$3,786.00
STYLING PACKAGES TROLLEY	Exterior Roof Mounted Sign Boards	$4,431.00	$4,431.00	$4,431.00
STYLING PACKAGES TROLLEY	Exterior Wood Like Trim Installed On: Cupola, Front & Rear Overhand Eves, Arches, Window Mullions, Window Sills, Rub Rails, Skirt Panels, Front & Rear Door, Front & Rear Bumper.	$75,994.00	$85,494.00	$99,344.00

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
STYLING PACKAGES TROLLEY	Front Center Trolley Light	$824.00	$824.00	$824.00
STYLING PACKAGES TROLLEY	Front Roof Hatch Accomodations	$1,019.00	$1,019.00	$1,019.00
STYLING PACKAGES TROLLEY	Hybrid Bus Compatible Cupola Package	$11,355.00	$11,355.00	$11,355.00
STYLING PACKAGES TROLLEY	Interior Vinyl Seat Cushions	$4,211.00	$4,824.00	$5,449.00
STYLING PACKAGES TROLLEY	Interior Wood Like Trim Installed On: Ceiling Panel Strips, Window Tops & Sills, Overhead Passenger Lights, Driver's Dash Area.	INCLUDED W/EXTERIOR	INCLUDED W/EXTERIOR	INCLUDED W/EXTERIOR
STYLING PACKAGES TROLLEY	Roof Accent LED Rope Lighting	$3,786.00	$3,911.00	$4,074.00
STYLING PACKAGES TROLLEY	Vintage Style Trolley Seating, Solid Wood Slats, Bull Nose Top, and Bottom Roundover Edges	QUOTE	QUOTE	QUOTE
STYLING PACKAGES TROLLEY	Vintage Style Vinyl Graphics: Cupola Window & Exterior Window Graphic Motifs, Standard Gold Vinyl Pinstripping, Exterior Graphics Banner Package, Interior Graphics Banner at Rear I/O Enclosure, Exterior Bus Numbers, Gold Battery Disconnect	INCLUDED W/EXTERIOR	INCLUDED W/EXTERIOR	INCLUDED W/EXTERIOR
SURVEILLANCE CAMERA SYSTEMS	AngelTrax (7) Standard Definition Color Camera System, 1TB HDD, Wireless, GPS, Impact Sensor Vulcan Series 12 Channel HD/IP Mobile Digital Video Recorder w/ Seven Analog Cameras	$2,639.00	$2,639.00	$2,639.00
SURVEILLANCE CAMERA SYSTEMS	AngelTrax--Add (1) High Definition Color Camera (IP CAMERA)	$326.00	$326.00	$326.00
SURVEILLANCE CAMERA SYSTEMS	AngelTrax--Add (1) Standard Definition Color Camera (ANALOG CAMERA)	$241.00	$241.00	$241.00
SURVEILLANCE CAMERA SYSTEMS	AngelTrax--Add 1TB HDD (Double stacked 500GB HDD)	$326.00	$326.00	$326.00
SURVEILLANCE CAMERA SYSTEMS	Apollo -- Add (1) 4K Color Camera & Upgrad to HD System	$2,781.00	$2,781.00	$2,781.00
SURVEILLANCE CAMERA SYSTEMS	Apollo -- Add (1) High Definition 360° Camera & Upgrade to HD System	$2,551.00	$2,551.00	$2,551.00
SURVEILLANCE CAMERA SYSTEMS	Apollo -- WC340 LTE Advanced Mobile Cellular Router	$1,349.00	$1,349.00	$1,349.00
SURVEILLANCE CAMERA SYSTEMS	Apollo Back Up Camera with LCD Screen to SD System - Uses Camera #12 from System	$264.00	$264.00	$264.00
SURVEILLANCE CAMERA SYSTEMS	Apollo--Add (1) High Definition Color Camera & Upgrad to HD System	$2,181.00	$2,181.00	$2,181.00
SURVEILLANCE CAMERA SYSTEMS	Apollo--Add (1) Standard Definition Coler Camera	$356.00	$356.00	$356.00
SURVEILLANCE CAMERA SYSTEMS	Apollo--Add 6TB HDD	$1,073.00	$1,073.00	$1,073.00
SURVEILLANCE CAMERA SYSTEMS	Apollo--Delete (1) Standard Definition Color Camera	($356.00)	($356.00)	($356.00)
SURVEILLANCE CAMERA SYSTEMS	Camera Pre Wire Package	($4,957.00)	($4,957.00)	($4,957.00)

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
SURVEILLANCE CAMERA SYSTEMS	March Network 5412 (10) Camera--Kalatel Mobileview	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
SURVEILLANCE CAMERA SYSTEMS	March Networks - 4TB HDD (Caddy GTxx G1 HDD 2x2TB) - Includes Delete Base System	($3,217.00)	($3,217.00)	($3,217.00)
SURVEILLANCE CAMERA SYSTEMS	March Networks - 4TB SSD (Caddy GTxx G1 SSD 2x1.92TB) - Includes Delete Base System	($622.00)	($622.00)	($622.00)
SURVEILLANCE CAMERA SYSTEMS	March Networks - Add (1) High [IP] Definition 360 Interior Camera	$514.00	$514.00	$514.00
SURVEILLANCE CAMERA SYSTEMS	March Networks - Add (1) High [IP] Definition Exterior Camera	$557.00	$557.00	$557.00
SURVEILLANCE CAMERA SYSTEMS	March Networks - Add (1) High [IP] Definition Interior Camera with Microphone	$376.00	$376.00	$376.00
SURVEILLANCE CAMERA SYSTEMS	March Networks - Add (1) High [IP] Definition Windshield Mounted Interior Camera	$666.00	$666.00	$666.00
SURVEILLANCE CAMERA SYSTEMS	March Networks - Add (1) Standard [Analog] Definition Exterior Camera	$406.00	$406.00	$406.00
SURVEILLANCE CAMERA SYSTEMS	March Networks - Add (1) Standard [Analog] Definition Interior Camera	$467.00	$467.00	$467.00
SURVEILLANCE CAMERA SYSTEMS	March Networks - RideSafe GT08: 8 Standard [Analog] Definition Color Camera System, 1TB SSD, Wireless, Accelerometer/Impact Sensor	($2,646.00)	($2,646.00)	($2,646.00)
SURVEILLANCE CAMERA SYSTEMS	March Networks - RideSafe GT12: 4 High [IP] & 8 Standard [Analog] Definition Color Camera System, 2TB SSD, Wireless, Accelerometer/Impact Sensor	($979.00)	($979.00)	($979.00)
SURVEILLANCE CAMERA SYSTEMS	March Networks - RideSafe GT16: 8 High [IP] & 8 Standard [Analog] Definition Color Camera System, 2TB SSD, Wireless, Accelerometer/Impact Sensor	($429.00)	($429.00)	($429.00)
SURVEILLANCE CAMERA SYSTEMS	March Networks - RideSafe GT20: 12 High [IP] & 8 Standard [Analog] Definition Color Camera System, 2TB SSD, Wireless, Accelerometer/Impact Sensor	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
SURVEILLANCE CAMERA SYSTEMS	March Networks - RideSafe MT04: 4 High [IP] Definition Color Camera System, 1TB SDD, Wireless, Accelerometer/Impact Sensor	($4,029.00)	($4,029.00)	($4,029.00)
SURVEILLANCE CAMERA SYSTEMS	March Networks - RideSafe MT06: 6 High [IP] Definition Color Camera System, 2TB SDD, Wireless, Accelerometer/Impact Sensor	($3,121.00)	($3,121.00)	($3,121.00)
SURVEILLANCE CAMERA SYSTEMS	Mobileview NVR7000 (10) Camera System, High Definition, 4TB HDD, Wireless, GPS, Impact Sensor	($1,695.00)	($1,695.00)	($1,695.00)
SURVEILLANCE CAMERA SYSTEMS	Mobileview--Add (1) High Definition Camera	$413.00	$413.00	$413.00
SURVEILLANCE CAMERA SYSTEMS	Mobileview--Add Solid State Harddrive (SSD) - 2TB	$2,139.00	$2,139.00	$2,139.00
SURVEILLANCE CAMERA SYSTEMS	REI Bus Watch Digital - HD5-1200 DVR (8) Camera, 2 TB HDD, Wireless, GPS, Impact Sensor	QUOTE	QUOTE	QUOTE
SURVEILLANCE CAMERA SYSTEMS	SEON Add (1) High Definition Color Camera	$400.00	$400.00	$400.00
SURVEILLANCE CAMERA SYSTEMS	SEON Add (1) Standard Definition Color Camera	$269.00	$269.00	$269.00
SURVEILLANCE CAMERA SYSTEMS	HDD SEON Add 2TB Harddrive	$421.00	$421.00	$421.00
SURVEILLANCE CAMERA SYSTEMS	SSD SEON NX-16 (7) Camera System, 2TB Wireless, GPS, Impact Sensor	$1,093.00	$1,093.00	$1,093.00
SURVEILLANCE CAMERA SYSTEMS	TSI Nexus - HVR (8) Standard Definition Color Camera System, 4TB HDD, Remote LED Status Indicator, Wireless, GPS, Impact Sensor	QUOTE	QUOTE	QUOTE

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
TIRES	OEM Supplied Tires	QUOTE	QUOTE	QUOTE
TIRES	Tire Pressure Monitoring System	QUOTE	QUOTE	QUOTE
TOWING	Cole Hersee 12063 Electrical Tow Connector	$235.00	$235.00	$235.00
TOWING	Delete Cole Hersee Tow Connector	INCLUDED	INCLUDED	INCLUDED
TRANSMISSION	Allison B-400R, GEN IV or Latest GEN	$5,459.00	$5,459.00	$5,459.00
TRANSMISSION	Davco Electronic Fluid Level Gauge	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
TRANSMISSION	KP Series Pushbutton Sampling Valve - Transmission Fluid CheckFluid KP18NV	$44.00	$44.00	$44.00
TRANSMISSION	Titan Probalizer OD-1014	$44.00	$44.00	$44.00
TRANSMISSION	ZF 6AP1400B	($1,446.00)	($1,446.00)	($1,446.00)
WARRANTY	Extended Warranty	QUOTE	QUOTE	QUOTE
WHEELCHAIR RAMP	Ricon – 4:1 Ratio, FR2E - Front Door Only	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
WHEELCHAIR RAMP	Ricon--6:1 Ratio, Single Slope Ramp – SSR - Front Door Only	$862.00	$862.00	$862.00
WHEELCHAIR SECUREMENT	American Seating--Advanced Restraint Module (ARM) with Remote Belt Release	INCLUDED WITH AMERICAN SEATING	INCLUDED WITH AMERICAN SEATING	INCLUDED WITH AMERICAN SEATING
WHEELCHAIR SECUREMENT	American Seating--Dual Auto Lok with Advanced Restraint Module (ARM)	NOT AVAILABLE WITH LAYOUT	$1,170.00	$1,170.00
WHEELCHAIR SECUREMENT	American Seating--Q'Straint Q'Pod - to American Seating Models (2 locations)	NOT AVAILABLE WITH LAYOUT	$5,225.00	$5,225.00
WHEELCHAIR SECUREMENT	Belt Guard and Wheelchair Ramp Pan Identification Numbers	QUOTE	QUOTE	QUOTE
WHEELCHAIR SECUREMENT	Kiel North America K-Pod with Secubar	QUOTE	QUOTE	QUOTE
WHEELCHAIR SECUREMENT	Q'Straint Quantum	QUOTE	QUOTE	QUOTE
WHEELCHAIR SECUREMENT	USSC--Q'Straint Q' POD - to Base Layout - Each Q'Pod	$2,870.00	$2,870.00	$2,870.00
WHEELS/RIMS	(7) Alcoa Aluminum Clean & Buff Finish	($445.00)	($445.00)	($445.00)
WHEELS/RIMS	(7) Alcoa Aluminum Clean & Buff Finish with Durabrite	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
WHEELS/RIMS	(7) Alcoa Aluminum Polished Finish	NO CHARGE	NO CHARGE	NO CHARGE
WHEELS/RIMS	(7) Steel Powder Coated Finish, White or Black	($1,488.00)	($1,488.00)	($1,488.00)
WHEELS/RIMS	Alcoa Wheels--Add Duraflange	QUOTE	QUOTE	QUOTE
WHEELS/RIMS	Delete Spare Aluminum Wheel	($300.00)	($300.00)	($300.00)
WHEELS/RIMS	Delete Spare Steel Wheel	($96.00)	($96.00)	($96.00)

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
WARRANTY	Complete Bus--1 Year/50,000 Miles	Included	Included	Included

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
WARRANTY	Body Structure 3 Years/150,000 Miles, Body and Chassis Structure Structural Integrity/Corrosion 7 Years/350,000 Miles	Included	Included	Included
WARRANTY	Engine (Base Coverage Includes Towing & Travel)-2 Years/Unlimited Miles	Included	Included	Included
WARRANTY	L9 Engine (Extended Coverage Included Towing & Travel)--5 Years/300,000 Miles	$5,202.00	$5,202.00	$5,202.00
WARRANTY	L9N Engine (Extended Coverage Included Towing & Travel)--5 Years/300,000 Miles	$5,840.00	$5,840.00	$5,840.00
WARRANTY	B6.7 Engine (Extended Coverage Included Towing & Travel)--5 Years/300,000 Miles	$4,794.00	$4,794.00	$4,794.00
WARRANTY	Emission Control Systems--5 Years/100,000 Miles	Included	Included	Included
WARRANTY	Transmission 5 Years/300,000 Miles	Included	Included	Included
WARRANTY	Hybrid Drive System 5 Years/300,000 Miles	Included	Included	Included
WARRANTY	5 Year/300,000 Miles	Included	Included	Included
WARRANTY	Differential (Extended Coverage Includes Towing & Travel)--7 Years/Unlimited Miles	Not Available	Not Available	Not Available
WARRANTY	HVAC (Base Coverage) 2 Years/Unlimited Miles	Included	Included	Included
WARRANTY	HVAC (Extended Coverage) 3Years/Unlimited Miles	Included	Included	Included
WARRANTY	Wheelchair Ramp (Base Coverage Includes Parts & Labor) 2 Years/Unlimited Miles	Included	Included	Included
WARRANTY	Wheelchair Ramp (Extended Coverage Includes Parts & Labor) 3Years/Unlimited Miles	Included	Included	Included
WARRANTY	Exterior Paint (Base Coverage) 4 Years/Unlimited Miles Prorated - See Terms	Included	Included	Included
WARRANTY	Structure/Body Integrity Against Corrosion (Base Coverage)--12 Years/500,000 Miles	$1,000.00	$1,000.00	$1,000.00
WARRANTY	Sub-Floor (Base Coverage)--12 Years/Unlimited Miles	Included	Included	Included
WARRANTY	Flooring (Rubber) (Base Coverage Includes Parts & Labor)--12 Years/Unlimited Miles	Included	Included	Included
WARRANTY	Flooring (Composite) (Base Coverage Includes Parts & Labor) 12 Years/Unlimited Miles	Included	Included	Included
WARRANTY	Body and Window Frames Against Leakage (Includes Parts & Labor) 1 Year/ 50,000 Miles	Included	Included	Included
WARRANTY	Brake Systems 2 Year/100,000 Miles	Included	Included	Included
WARRANTY	Electrical System (Base Coverage) - 1 Year/ 50,000 Miles	Included	Included	Included
WARRANTY	Electrical System (Extended Coverage) - 3 Years/ Unlimited Miles	Not Available	Not Available	Not Available
WARRANTY	Suspension System--2 Years/Unlimited Miles	Included	Included	Included

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Options Pricing List

Category	Item Description	Price per Item
MANUALS	Additional Driver's Handbook--Each	$20.00
MANUALS	Additional Service Manual (Hardcopy) - Each	$125.00
MANUALS	Additional Parts Manual (Hardcopy) - Each	$200.00
MANUALS	Additional Electrical Schematics (Hardcopy) -Each	$100.00
MANUALS	Additional Drivers, Service, Parts, or Electrical Schematics (CD) -Each	$25.00
MANUALS	Additional Vendor Manuals (Hardcopy) -Each	QUOTE
MANUALS	Additional Vendor Manuals (CD) - Each	QUOTE
TRAINING	Operator Orientation Training -By Bus Manufacturer and/or OEM Supplier atAgency Property (Per Driver/Per Class)	Included with PDI
TRAINING	Maintenance Orientation Training - By Bus Manufacturer and/or OEM Supplier atAgency Property (Per Technician/Per Class	Included with PDI
TRAINING	Steering System--By OEM Supplier at Agency Property (Per Technician/Per Class) Hydraulics - Steering Up to 12 students, 8 hrs	$1,650.00
TRAINING	Chassis & Body--By OEM Supplier at Agency Property (Per Technician/Per Class) Up to 12 students, 8 hrs	$1,650.00
TRAINING	Door Systems--By OEM Supplier at Agency Property (Per Technician/Per Class)	Included with Air & Brake Class
TRAINING	Suspension--By OEM Supplier at Agency Property (Per Technician/Per Class) Up to 12 students, 8 hrs	$1,650.00
TRAINING	Electrical & Electronics - By Bus Manufacturer and/or OEM Supplier at Agency Property (Per Technician/Per Class) Up to 12 students, 24 hrs class	$5,000.00
TRAINING	Air & Brake Systems--By OEM Supplier at Agency Property (Per Technician/Per Class) Up to 12 students, 24 hrs class	$5,000.00
TRAINING	HVAC & Climate Controls--By OEM Supplier at Agency Property (Per Technician/Per Day	$350.00
TRAINING	Engine----By OEM Supplier at Agency Property (Per Technician/Per)Day	$500.00
TRAINING	Transmission--By OEM Supplier at Agency Property (Per Technician/Per Day	$500.00
TRAINING	Lift-U Wheelchair Ramp--By OEM Supplier at Agency Property (Per Technician/Per Class) Ricon	No Charge No Charge

Category	Item Description	Price per Item
TRAINING	Luminator/Twin Vision Destination Sign--By OEM Supplier at Agency Property (Per Technician/Per Class) Hanover	No Charge No Charge
TRAINING	Kidde Fire Suppression--By OEM Supplier at Agency Property (Per Technician/Per Class) Amerex - FogMaker	1 Day Free for every 10 buses No Charge Quote
TRAINING	Hybrid Propulsion System--By OEM Supplier at Agency Property (Per Technician/Per Day	$500.00
TRAINING	Camera System Training--By OEM Supplier at Agency Property (Per Technician/Per Class) Apollo	$2,000.00
TRAINING	Automatic Passenger Counting System--By OEM Supplier at Agency Property (Per Technician/Per Class) UTA	$5,500.00
TRAINING	Fare Collection Training--By OEM Supplier at Agency Property (Per Technician/Per Class	Quote
TRAINING	ITS Technical Training--By OEM Supplier at Agency Property (Per Technician/Per Class) Clever Devices	$7,178.00
TRAINING MODULES	Thermo-King Intelligaire Training Module TK T14, Brushless Motors, X430	$42,350.00
TRAINING MODULES	I/O Controls Multiplex Board	$25,500.00
TRAINING MODULES	Air Brake Training Board	$34,600.00
TRAINING MODULES	BAE Hybrid Drive Module	$240,000.00
TRAINING MODULES	Cummins Engine Module - L9	$71,675.00
TRAINING MODULES	Cummins L9/Allison B400R Power Plant	$169,500.00
TRAINING MODULES	Cummins L9/Voith D864.5 (or latest model)	$169,000.00
TRAINING MODULES	Cummins L9/ZF 6AP1400B	$169,000.00
TRAINING MODULES	Vapor Door Training Module	$40,000.00
DIAGNOSTIC TOOLS	Cummins Tune Up Kit (pressure gauge, torque wrench, oil filter wrench, engine coolant & fuel wrench, belt tension gauge, charge A/C CAC pressure kit, engine barring gear, roller follower removal & installation tool, compucheck fitting)	$4,850.00
DIAGNOSTIC TOOLS	Nexiq USB Link 2 Wi-Fi Edition with 9-Pin Deutsch Adapter Kit, Insite (X) Software	$975.00
DIAGNOSTIC TOOLS	Set of Multiplexing Diagnostics (circuit tester, program loader, program, ID writer/verification, RS232/RS485 Converter, read time ladder logic, hand held computer, all required RTM software	$8,900.00
DIAGNOSTIC TOOLS	Amprobe AMB-45 Insulation Resistance Tester	$700.00

Category	Item Description	Price per Item
DIAGNOSTIC TOOLS	Amprobe MO-100 Milliohm Meter	$1,215.00
DIAGNOSTIC TOOLS	Hybrid Battery Removal Tool Kit	$3,400.00
DIAGNOSTIC TOOLS	Electric Drive Removal Tool Kit (Jack & Dolley)	$2,000.00
DIAGNOSTIC TOOLS	Kvaser Leaf Light HS v2 J1939-13 Type II	$1,150.00
DIAGNOSTIC TOOLS	TK60 - 60pcs. 1000v Insulated Tool Kit	$3,655.00
DIAGNOSTIC TOOLS	Thermo King Intelligaire III Diagnostic Kit with Flash Load Programming Cable PCAN Adapter Diagnostic Cable Your PC PCAN Software USB to Serial Port Adapter CAN DIAG Program	$1,615.00
DIAGNOSTIC TOOLS	Meritor Software (Tool Box), Serial Link/Interface Kit	$432.00
TOOLS	Engine Dolley	$5,550.00
TOOLS	Transmission Jack	$2,625.00

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Options Pricing List

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
WARRANTY	Complete Bus--1 Year/50,000 Miles	Included	Included	Included
WARRANTY	Body Structure 3 Years/150,000 Miles, Body and Chassis Structure Structural Integrity/Corrosion 7 Years/350,000 Miles	Included	Included	Included
WARRANTY	Engine (Base Coverage Includes Towing & Travel)-2 Years/Unlimited Miles	Included	Included	Included
WARRANTY	L9 Engine (Extended Coverage Included Towing & Travel)--5 Years/300,000 Miles	$5,202.00	$5,202.00	$5,202.00
WARRANTY	L9N Engine (Extended Coverage Included Towing & Travel)--5 Years/300,000 Miles	$5,840.00	$5,840.00	$5,840.00
WARRANTY	B6.7 Engine (Extended Coverage Included Towing & Travel)--5 Years/300,000 Miles	$4,794.00	$4,794.00	$4,794.00
WARRANTY	Emission Control Systems--5 Years/100,000 Miles	Included	Included	Included
WARRANTY	Transmission 5 Years/300,000 Miles	Included	Included	Included
WARRANTY	Hybrid Drive System 5 Years/300,000 Miles	Included	Included	Included
WARRANTY	5 Year/300,000 Miles	Included	Included	Included
WARRANTY	Differential (Extended Coverage Includes Towing & Travel)--7 Years/Unlimited Miles	Not Available	Not Available	Not Available
WARRANTY	HVAC (Base Coverage) 2 Years/Unlimited Miles	Included	Included	Included
WARRANTY	HVAC (Extended Coverage) 3Years/Unlimited Miles	Included	Included	Included
WARRANTY	Wheelchair Ramp (Base Coverage Includes Parts & Labor) 2 Years/Unlimited Miles	Included	Included	Included
WARRANTY	Wheelchair Ramp (Extended Coverage Includes Parts & Labor) 3Years/Unlimited Miles	Included	Included	Included
WARRANTY	Exterior Paint (Base Coverage) 4 Years/Unlimited Miles Prorated - See Terms	Included	Included	Included
WARRANTY	Structure/Body Integrity Against Corrosion (Base Coverage)--12 Years/500,000 Miles	$1,000.00	$1,000.00	$1,000.00
WARRANTY	Sub-Floor (Base Coverage)--12 Years/Unlimited Miles	Included	Included	Included
WARRANTY	Flooring (Rubber) (Base Coverage Includes Parts & Labor)--12 Years/Unlimited Miles	Included	Included	Included
WARRANTY	Flooring (Composite) (Base Coverage Includes Parts & Labor) 12 Years/Unlimited Miles	Included	Included	Included
WARRANTY	Body and Window Frames Against Leakage (Includes Parts & Labor) 1 Year/ 50,000 Miles	Included	Included	Included
WARRANTY	Brake Systems 2 Year/100,000 Miles	Included	Included	Included
WARRANTY	Electrical System (Base Coverage) - 1 Year/ 50,000 Miles	Included	Included	Included
WARRANTY	Electrical System (Extended Coverage) - 3 Years/ Unlimited Miles	Not Available	Not Available	Not Available
WARRANTY	Suspension System--2 Years/Unlimited Miles	Included	Included	Included

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Options Pricing List

OPTIONAL EXTENDED WARRANTIES

Category	Item Description	30 Foot Bus	35 Foot Bus	40 Foot Bus
COMPLETE BUS	1 YEAR/UNLIMITED MILES	$600.00	$600.00	$600.00
BODY/CHASSIS STRUCTURE	TOTAL OF 12 YEARS/500,000 MILES	$1,500.00	$1,500.00	$1,500.00
DINEX I/O MODULES	3 YEARS/UNLIMITED MILES	$450.00	$450.00	$450.00

Exhibit 'C' - Warranty
(On following pages)

Warranty

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 the Authority each complete bus and specific subsystems and components as follows. Performance requirements based on design criteria shall not be deemed a warranty item.

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." The warranty is based on regular operation of the bus under the operating conditions prevailing in the Agency's locale.

Body and Chassis Structure

Body, body structure, structural elements of the suspension and engine cradle are warranted to be free from Defects and Related Defects for three years or 150,000 miles, whichever comes first.

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 or Class 2 Failure for a period of 7 years or 350,000 miles, whichever comes first.

Propulsion System

Propulsion system components, including the engine, transmission or drive motors, and generators (for hybrid technology) and drive and non-drive axles shall be warranted to be free from Defects and Related Defects for the standard one years or 50,000 miles, whichever comes first. An Extended Warranty to a maximum of five years or 300,000 miles, whichever comes first, may be purchased at an additional cost. Contractor Warranty documentation will be provided with each bus order.

Emission Control System (ECS)

The Contractor warrants the emission control system for five years or 100,000 miles, whichever comes first. The ECS shall include, but is not limited to, the following components:

Complete exhaust system, including catalytic converter (if required)
After treatment device
Components identified as emission control devices

Subsystems

Other subsystems shall be warranted to be free from Defects and Related Defects for one years or 50,000 miles, whichever comes first. The Original Equipment Manufacturer warranty will take precedent when in the best interest of the agency. Other subsystems are listed below:

Brake system: Foundation brake components, including advancing mechanisms, as supplied with the axles, excluding friction surfaces.

Destination signs: All destination sign equipment for the front, side and rear signs, power modules and operator control.
Heating, ventilating: Roof and/or rear main unit only, excluding floor heaters and front defroster.
AC unit and compressor: Roof and/or rear main unit only, excluding floor heaters and front defroster.
Door systems: Door operating actuators and linkages.
Air compressor
Air dryer
Wheelchair lift and ramp system: Lift and/or ramp parts and mechanical only.
Starter
Alternator: Alternator only. Does not include the drive system.
Charge air cooler: Charge air cooler including core, tanks and including related surrounding framework and fittings.
Fire suppression: Fire suppression system including tank and extinguishing agent dispensing system.
Hydraulic systems: Including radiator fan drive and power steering as applicable.
Engine cooling systems: Radiator including core, tanks and related framework, including surge tank.
Transmission cooler
Passenger seating excluding upholstery
Fuel storage and delivery system
Surveillance system including cameras and video recorders

Serial Numbers

Upon delivery of each bus, the Contractor shall provide a complete electronic list of serialized units installed on each bus to facilitate warranty tracking. The list shall include, but is not limited to the following:

Engine
Transmission
Alternator
Starter
A/C compressor and condenser/evaporator unit
Drive axle
Power steering unit
Fuel cylinders (if applicable)
Air compressor
Wheelchair ramp (if applicable)
Surveillance system

The Contractor shall provide updated serial numbers resulting from warranty campaigns. The format of the list shall be approved by the Agency prior to delivery of the first production bus.

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, then the applicable warranty period shall be extended by the number of days equal to the delay period.

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 Purchaser 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. The Purchaser shall maintain documentation, auditable by the Contractor, verifying service activities in conformance with the Contractor's maintenance manuals.

Exceptions and Additions to Warranty

The warranty shall not apply to the following items:

Scheduled maintenance items
Normal wear-out items
Items furnished by the Purchaser

Should the Purchaser require the use of a specific product and has rejected the Contractor's request for an alternate product, then the standard Contractor warranty for that product shall be the only warranty provided to the Purchaser. 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.

Pass-Through Warranty

Should the Contractor elect to not administer warranty claims on certain components and wish to transfer this responsibility to the subcontractors, or to others, the Contractor shall request this waiver.

Contractor shall state in writing that the Purchaser'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 the Purchaser to assign its warranty obligations to others, but only on a case-by-case basis approved in writing by the Purchaser. 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. The Contractor will be responsible for settling all disputes with subcontractors.

Superior Warranty

The Contractor shall pass on to the Purchaser any warranty offered by a component Contractor that is superior to that required herein. The Contractor shall provide a list to the Purchaser 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.

Fleet Defects

Occurrence and Remedy

A Fleet Defect is defined as cumulative failures of twenty-five (25) percent of the same components in the same or similar application in a minimum fleet size of twelve (12) or more buses where such items are covered by warranty. Fleet defect coverage is for a maximum of 12 months or 50,000 miles and includes all warrantable components and assemblies on the vehicle. When a Fleet defect is declared, the remaining warranty on that item/component stops. The warranty period does not restart until the Fleet Defect is corrected. The Contractor will notify the lead agency, or its designee, of all warranty claims within the same production year for all buses purchased off this contract.

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, the Purchaser 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 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. The Purchaser 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. That information will be shared with all contract participants.

When it is determined that a field service representative is required onsite the expectation is that the Contractor will have 48 hours to have the representative in place. The field service representative must be capable of performing technical repairs onsite.

As a part of the corrective action pertaining to fleet defects the Contractor will be required to assist and/or send their field representative to each property with buses built in the production year that is experiencing the defect.

Exceptions to Fleet Defect Provisions

The Fleet Defect component warranty provisions shall not apply to Purchaser-supplied items, such as radios, fare collection equipment, communication systems and tires. In addition, Fleet Defects shall not apply to interior and exterior finishes, hoses, fittings and fabric.

Repair Procedures

Repair Performance

The Contractor is responsible for all warranty-covered repair Work. To the extent practicable, the Purchaser will allow the Contractor or its designated representative to perform such Work. At its discretion, the Purchaser 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.

Repairs by the Contractor

If the Purchaser 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 Purchaser. The Purchaser shall make the bus available to complete repairs timely with the Contractor's repair schedule.

The Contractor shall provide at its own expense all spare parts, tools and space required to complete repairs. At the Purchaser's option, the Contractor may be required to remove the bus from the Purchaser's property while repairs are being effected. If the bus is removed from the Purchaser's property, then repair procedures must be diligently pursued by the Contractor's representative.

Repairs by the Purchaser

Parts Used

If the Purchaser performs the warranty-covered repairs, then it shall correct or repair the Defect and any Related Defects utilizing parts supplied by the Contractor specifically for this repair. At its discretion, the Purchaser may use Contractor-specified parts available from its own stock if deemed in its best interests.

Contractor-Supplied Parts

The Purchaser may require that the Contractor supply parts for warranty-covered repairs being performed by the Purchaser. Those parts may be remanufactured but shall have the same form, fit and function, and warranty. The parts shall be shipped prepaid to the Purchaser 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 Purchaser handling charge.

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."

Failure Analysis

The Contractor shall, upon specific request of the Purchaser, 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.

Reimbursement for Labor and Other Related Costs

Reimbursement for Labor of an approved warranty related claim shall be determined by each agency for a qualified mechanic at a loaded straight time wage rate not to exceed $95 per hour. Reimbursement for towing is covered under the applicable extended warranty provisions for the selected components and only if towing is a provision of the components extended warranty program and purchased by the agency.

Reimbursement for Parts

The Purchaser 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 15 percent handling costs. Handling costs shall not be paid if parts are supplied by the Contractor and shipped to the Purchaser.

Reimbursement Requirements

The Contractor shall respond to the warranty claim with an accept/reject decision including necessary failure analysis no later than thirty (30) days after the Purchaser submits the claim and defective part(s), when requested. Reimbursement for all accepted claims shall occur no later than thirty (30) days from the date of acceptance of a valid claim. The Purchaser 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 dispositioned.

Warranty after Replacement/Repairs

If any component, unit or subsystem is repaired, rebuilt or replaced by the Contractor or by the Purchaser with the concurrence of the Contractor, then the component, unit or subsystem shall have the unexpired warranty period of the original. Repairs shall not be warranted if 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.”

Once the Fleet Defect is corrected, the remaining warranty period shall begin on the repair/replacement date for corrected items on each bus if the repairs are completed by the Contractor or on the date the Contractor provides all parts to the Purchaser.

Warranty Processing Procedures

The following list represents requirements by the Contractor to the Purchaser for processing warranty claims. One failure per bus per claim is allowed.

Bus number and VIN
Total vehicle life mileage at time of repair
Date of failure/repair
Acceptance/in-service date
Contractor part number and description
Component serial number
Description of failure
All costs associated with each failure/repair (invoices may be required for third-party costs):

- Towing
- Road calls
- Labor
- Materials
- Parts
- Handling
- Troubleshooting time

Forms

The Purchaser's forms will be accepted by the Contractor if all of the above information is included. Electronic submittal must be made available between the Contractor and the Purchaser.

Return of Parts

When returning defective parts to the Contractor, the Purchaser shall tag each part with the following:

Bus number and VIN
Claim number
Part number
Serial number (if available)
Mileage

Timeframe

Each claim must be submitted no more than thirty to forty-five (30-45) 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 forty-five (45) days from the date of repair.

Reimbursements

Reimbursements are to be transmitted to the reporting Purchaser.

GILLIG LLC

LOW FLOOR TRANSIT COACH

STANDARD LIMITED WARRANTY & EXTENDED COVERAGE FOR

STATE OF FLORIDA – JACKSONVILLE, FL
RFP P-18-05 – MARCH 2019

GILLIG LLC warrants to the original purchaser, that its transit coaches, save and except for those major component assemblies and other parts described below which are separately warranted by their respective manufacturer's (OEM's), will be **FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USE AND SERVICE**, for the distance or time periods specified in the attached, and agrees to REPAIR or REPLACE the defective parts AT NO COST TO THE PURCHASER. This is a limited warranty subject to the provisions stated below and is referred to as GILLIG's Standard Limited Warranty.

This warranty **DOES NOT COVER** malfunction or failure resulting from the purchaser's or its agents or employees alteration, misuse, abuse, accident, neglect or failure to perform normal preventive maintenance as outlined in GILLIG's Service Manual, nor does it cover components or assemblies not originally provided by GILLIG. Further, this warranty **DOES NOT APPLY** to normal replacement items such as light bulbs, seals, filters or bushings, nor to consumable items such as belts, tires, brake linings or drums.

PURCHASER'S SOLE REMEDIES FOR LIABILITY OF ANY KIND WITH RESPECT TO THE PRODUCTS FURNISHED UNDER THIS WARRANTY AND ANY OTHER PERFORMANCE BY GILLIG UNDER OR PURSUANT TO THIS WARRANTY, OR WITH RESPECT TO PURCHASER'S USE THEREOF, INCLUDING NEGLIGENCE, SHALL BE LIMITED TO THE REMEDIES PROVIDED IN THIS WARRANTY AND SHALL IN NO EVENT INCLUDE ANY INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES OR LOSS OF USE, REVENUE OR PROFIT. IN NO EVENT SHALL GILLIG'S LIABILITY FOR DAMAGES WITH RESPECT TO ANY OF THE PRODUCTS COVERED UNDER THIS WARRANTY EXCEED THE AMOUNT PAID BY THE PURCHASER TO GILLIG FOR SUCH PRODUCTS.

GILLIG **DOES NOT WARRANT** some major component assemblies (such as the engines, transmissions and air conditioning systems) which are warranted by their respective manufacturers (OEM's) and identified as Category 3 items on page three (3) of this Warranty. **Warranty coverage for these items is as defined in those manufacturer's own warranty documents** and per their terms and conditions, and as administered by their own support networks.

GILLIG makes **NO OTHER WARRANTIES,** except as stated herein, and GILLIG's obligation under this warranty is **LIMITED AND FULLY DESCRIBED HEREIN**. Determination of warrantable defects is at GILLIG's (or the OEM's) discretion and will require inspection of failed components. Correction or compensation under this warranty for Category 1 and Category 2 items cannot be made unless requested on a GILLIG Application for Warranty Claim form and in accordance with the claim procedure established by GILLIG.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTY EXPRESSED OR IMPLIED, but if such has legal status, it **CANNOT EXCEED THE DURATIONS STATED HEREIN**. This warranty gives the purchaser specific legal rights and some state statutes may include other rights.

This is GILLIG's sole warranty with respect to its transit coaches. **GILLIG MAKES NO OTHER WARRANTY OF ANY KIND WHATEVER, EXPRESS OR IMPLIED; AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED THE AFORESAID OBLIGATION ARE HEREBY DISCLAIMED BY GILLIG AND EXCLUDED FROM THIS AGREEMENT.**

GILLIG LLC

LOW FLOOR TRANSIT COACH

STANDARD LIMITED WARRANTY & EXTENDED COVERAGE FOR

STATE OF FLORIDA – JACKSONVILLE, FL
RFP P-18-05 – MARCH 2019

GILLIG's Standard Limited Warranty which covers Category 1 and Category 2 parts, components and assemblies, covers the following systems, components or assemblies for the period specified, and includes 100% PARTS AND LABOR to repair or replace the defective components as determined by GILLIG. (See Page 3 for explanation of notes (1)-(7).)

CATEGORY 1

Includes GILLIG manufactured or assembled components and systems as well as some purchased assemblies. Warranty and warranty claims administration provided by GILLIG.

	Coverage Period [1]	
	Months	Miles
FULL COACH WARRANTY [2] [3] [7]	12	50,000
BODY STRUCTURE WARRANTY [4]	36	150,000
CORROSION & STRUCTURAL INTEGRITY WARRANTY [5]	84	350,000
WATER LEAKS	24	Unlimited

CATEGORY 2

Includes major components purchased and installed by GILLIG. Warranty provided by component OEM's. Warranty claims administration provided by GILLIG.

AXLE		
Meritor Front Steering	60	300,000
Meritor Rear Driving	60	300,000
BRAKE SYSTEM		
(Excludes Friction Material)		
Bendix Valves	24	100,000
Meritor Brakes	24	100,000
RADIATOR & CHARGE AIR COOLER		
EMP Gen IV MH4 Fan System	36	Unlimited

GILLIG LLC

LOW FLOOR TRANSIT COACH

STANDARD LIMITED WARRANTY & EXTENDED COVERAGE FOR

STATE OF FLORIDA – JACKSONVILLE, FL
RFP P-18-05 – MARCH 2019

Major components listed below under "Category 3" are covered by warranties or extended coverages[6], for the miles and/or months indicated, provided by the manufacturer (OEM's) of those components. Purchasers should refer to specific OEM warranty documents for details. Warranty claims are and will be administered by the respective manufacturers (OEM's) and all warranty claims must be made directly to said manufacturers. GILLIG will assist purchasers in dealing with these OEM's and warranty issues that may arise from time to time.

CATEGORY 3

	Coverage Period [1]	
	Months	Miles
ENGINE [7]		
Cummins L9	24	Unlimited
Emissions	60	100,000
ENGINE ACCESSORIES		
Delco Starter	36	350,000
EMP P450 Alternator	24	Unlimited
Air Compressor	24	Unlimited
TRANSMISSION		
Voith D864.6	60	300,000
AIR CONDITIONING SYSTEM		
Thermo King	36	Unlimited
WHEELCHAIR RAMP		
Lift-U LU18	36	Unlimited
DOOR SYSTEM		
Vapor	12	Unlimited
GEMINI PASSENGER SEATS		
Metal Components	60	Unlimited
Plastic Components & Moving Parts	36	Unlimited
Wheelchair Restraints, Polyurethane Foam & Woven Upholstery	24	Unlimited
ADA Call Devices, Docket 90 Foam & Vinyl Upholstery	12	Unlimited
DRIVER'S SEAT		
United States Seating G2A	12	Unlimited

CATEGORY 3…CONTINUED

	Coverage Period [1]	
	Months	Miles
SUBFLOOR		
GW Industries Transit Deck XP Plus	144	500,000
RUBBER FLOOR		
TransitFlor	144	Unlimited
EXTERIOR MIRROR		
SafeFleet	12	Unlimited
MULTIPLEXING		
I/O Controls G4	12	Unlimited
FIRE SUPPRESSION		
Fogmaker	24	Unlimited
SURVEILLANGE SYSTEM		
Apollo	24	Unlimited

Low Floor Transit Coach Emission Warranty

GILLIG warrants to the ultimate purchaser and each subsequent purchaser that the new vehicle isdesigned, built and equipped so it conforms at the time of sale to the ultimate purchaser with all U.S. federal emissions regulations applicable at the time of manufacture and that it is free from defects in materials or workmanship which would cause the vehicle to fail to not meet these regulations within five years or 100,000 miles of operation, whichever occurs first, as measured from the date the vehicle is placed into service. In no case may this period be less than the Standard Limited Warranty where applicable to emission warrantable parts. If the ultimate purchaser registers the vehicle in the state of California (or any other state following the applicable California Air Resources Board regulations) a separate California Emissions Warranty applies.

GILLIG LLC

LOW FLOOR TRANSIT COACH

STANDARD LIMITED WARRANTY & EXTENDED COVERAGE FOR

STATE OF FLORIDA – JACKSONVILLE, FL
RFP P-18-05 – MARCH 2019

GILLIG warrants to the ultimate purchaser that registers the vehicle in the state of California (or any other state following the applicable California Air Resources Board regulations), and each subsequent purchaser, that the new vehicle is designed, built and equipped so it conforms at the time of sale to the ultimate purchaser with all applicable regulations adopted by the California Air Resources Board at the time of manufacture and that it is free from defects in materials or workmanship which would cause the vehicle to fail to not meet these regulations within five years, 100,000 miles or 3000 hours of operation, whichever occurs first, as measured from the date the vehicle is placed into service. In no case may this period be less than the basic mechanical warranty provided to the purchaser of the engine.

GILLIG warrants to the ultimate purchaser and each subsequent purchaser that the tires on this vehicle conform at the time of sale to the ultimate purchaser with all U.S federal emissions regulations and all applicable regulations adopted by the California Air Resources Board at the time of manufacture and are free from defects in materials or workmanship which would cause the vehicle to fail to not meet these regulations for a period of 2 years or 24,000 miles, whichever occurs first.

This list of emission control parts may be covered by the Emission Warranty under certain failure modes.

- Ambient Air Temperature Sensor
- Charge Air Cooler and associated plumbing
- Wire harness circuits connected at both ends to emissions warrantable components
- Exhaust gas pipes from turbocharger out to the last after treatment device
- Urea quality sensor
- Urea tank, heating element, level sensor, temperature sensor, coolant control valve
- Urea lines and line heater controls
- On-Board Diagnostic (OBD) Malfunction Indicator Lamp (MIL)
- Diesel Exhaust Fluid (DEF) Lamp
- OBD Connector

NOTES

1) Coverage ceases at the first expiration of the time or distance noted.
2) Full coach warranty includes and applies to electrical, doors, seats, flooring, roof hatches, destination signs, wheelchair ramp, handrails, radio, P.A., etc., but not to IVS systems or special options.
3) Fleet defect coverage is for a maximum of 12 months or 50,000 miles and includes all warrantable components and assemblies on the vehicle.
4) Basic body structure warranty includes and applies to structural members in the body and undercarriage including the structural members in the suspensions.
5) The corrosion and structural integrity guarantee covers against a significant loss of structural integrity of the assembly or its functional performance, resulting from a pertinent loss of cross-section due to corrosion caused by normal environmental elements but excludes corrosion caused by aggressive road de-icers such as Magnesium Chloride or equivalents, unless Gillig approved preventative measures are taken (see Service Manual).
6) Extended coverage may not duplicate Standard Limited warranty coverage. Note: Please refer to OEM warranty documents for details.
7) Use of non-ASTM biodiesel blends from non-BQ9000 suppliers in excess of B20 may void the engine manufacturer's warranty on fuel related components, and also may void warranties of hoses, seals and fittings in contact with the fuel.

Exhibit 'D' - Required Forms

(On following pages)

Acknowledgement of Receipt of Addenda

I hereby certify that I have read and understand and certify the truthfulness of the required statements of the Solicitation and acknowledge receipt of the following Addenda issued during the advertisement period for this Solicitation.

Addendum	Dated	Signature/Title
No. 1	8/8/2018	JOSEPH POLICARPIO VICE PRESIDENT
No. 2	8/27/2018	JOSEPH POLICARPIO VICE PRESIDENT
No. 3	8/31/2018	JOSEPH POLICARPIO VICE PRESIDENT
No. 4	9/5/2018	JOSEPH POLICARPIO VICE PRESIDENT
No. 5	9/10/2018	JOSEPH POLICARPIO VICE PRESIDENT
No. 6	9/12/2018	JOSEPH POLICARPIO VICE PRESIDENT

Signature of Proposer's Authorized Representative: _____

Typed/Printed Name: JOSEPH POLICARPIO

Title: VICE PRESIDENT Date: SEPTEMBER 12, 2018

Bus Testing Certification

CERTIFICATION OF COMPLIANCE WITH FTA'S BUS TESTING REQUIREMENTS

The undersigned [Contractor/Manufacturer] certifies that the vehicle offered in this procurement complies with 49 U.S.C. A 5323 and FTA's implementing regulation at 49 CFR Part 665.

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: SEPTEMBER 12, 2018

Signature: J Policarpio

Company Name: GILLIG LLC

Title: JOSEPH POLICARPIO, VICE PRESIDENT

REFERENCE OUR ATTACHED CERTIFICATION.

PLEASE REFERENCE FOLLOWING SECTION TAB 8 APPENDICES, TAB #1 FOR THE FOLLOWING ALTOONA BUS TESTS.

PTI-BT-R0410 - 35'/40' LOW FLOOR DIESEL (DEC'04)
PTBI-BT-R9922-06-00 - 29' LOW FLOOR DIESEL (JUNE'00)

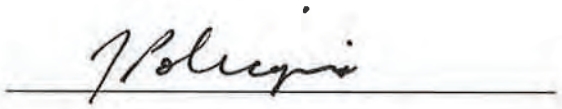
ALTOONA BUS TEST CERTIFICATION

This is to certify that the bus model proposed for your procurement complies with the bus testing regulations required by the Surface Transportation and Uniform Relocation Assistance Act of 1987 as defined in the Interim Final Rulemaking (IFR) by the FTA in the Federal Register 49 CFR Part 665, dated July 28, 1992 and the Final Rule in the Federal Register 49 CFR part 665, dated August 1, 2016.

This statement means that the proposed vehicle complies with one or more of the clauses below, as required by the above IFR:

- was in mass transportation service prior to September 30, 1988, or
- is the same vehicle model that has been previously tested in PTI (Altoona), and that
- any new component(s) has (have) been tested at PTI (Altoona), or
- the installation of any new component(s) did not result in significant structural modification to the vehicle; or
- the installation of the component(s) did not result in a significant change in the data obtained from previous testing of the vehicle model.

GILLIG LLC

By: 

JOSEPH POLICARPIO

Title: VICE PRESIDENT

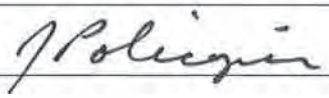
Date: SEPTEMBER 12, 2018

Buy America Certification (Rolling Stock) for Procurement of Buses, other Rolling Stock and Associated Equipment

Certificate of Compliance with 49 U.S.C. 5323(j)(2)(c)

The Bidder or offeror hereby certifies that it will comply with the requirements of 49 U.S.C. 5323(j)(2)(c) and the regulations at 49 CFR Part 661.

Date: SEPTEMBER 12, 2018

Signature: 

Company Name: GILLIG LLC

Title: JOSEPH POLICARPIO, VICE PRESIDENT

Certificate of Non-Compliance with 49 U.S.C. 5323(j)(2)(c)

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

Date: ------

Signature: _____

Company Name: ------

Title: ------

STATE OF FLORIDA
JACKSONVILLE, FL
PRE-AWARD BUY AMERICA CERTIFICATE
FORTY FOOT LOW FLOOR TRANSIT BUSES (RFP# P 18-005)
24-Sep-18

GILLIG IS ONE OF THE MOST "AMERICAN" BUS MANUFACTURERS IN THE WORLD. Gillig is 100% U.S. owned and operated. ALL OF OUR FACILITIES are located in the U.S.A. ALL OF OUR MANUFACTURING is done in the U.S.A. and we have a policy that stresses the use of products produced in the U.S.A.

We certify full compliance with the FTA's "Buy America" regulations (Section 49 CFR Part 663) and submit the following abbreviated listing as evidence of this compliance.

COMPONENT	MANUFACTURER	COUNTRY OF ORIGIN	PERCENT OF TOTAL COST
A/C TRANSITION DUCTS	THERMAL STRUCTURES, INC	U.S.A.	0.10%
AIR CONDITIONING SYSTEM	THERMO KING	U.S.A.	6.54%
AIR DRYER ASSEMBLY	SKF USA, INC	U.S.A.	0.16%
BIKE RACK	BYK-RAK	U.S.A.	0.33%
BULKHEAD ASSEMBLY	ALVA GWYN	U.S.A.	0.16%
CEILING PANELS	WILSONART INTERNATIONAL	U.S.A.	0.38%
COMPOSITE FLOORING	MILWAUKEE COMPOSITES	U.S.A.	0.41%
COOLANT PUMP	ENGINEERED MACHINED PRODUCTS, INC	U.S.A.	0.12%
DESTINATION SIGNS	HANOVER DISPLAYS	U.S.A.	1.14%
DOOR CONTROLS & PANELS - FRONT	VAPOR BUS INTERNATIONAL	U.S.A.	0.75%
DOOR CONTROLS & PANELS - REAR	VAPOR BUS INTERNATIONAL	U.S.A.	0.60%
DRIVER'S BARRIER	McCLARIN PLASTICS DBA AMTECH	U.S.A.	0.11%
DRIVER'S SEAT	UNITED STATES SEATING	U.S.A.	0.70%
ELECTRICAL HARNESSES & CABLES	LACO INCORPORATED	U.S.A.	1.12%
ELECTRICAL HARNESSES, CABLES & PANELS	COMPASS COMPONENTS	U.S.A.	4.61%
ENGINE & AFTERTREATMENT SYSTEM	CUMMINS, INC	U.S.A.	14.02%
EXTERIOR MIRRORS	SAFE FLEET BUS & RAIL	U.S.A.	0.29%
EXTRUSIONS	SAPA	U.S.A.	0.94%
FABRICATIONS-BAYFAB METALS	BAYFAB METALS INC	U.S.A.	0.18%
FABRICATIONS-COMMERCIAL PATTERN	COMMERCIAL PATTERN	U.S.A.	0.28%
FABRICATIONS-DIAMOND MANUFACTURING	DIAMOND MANUFACTURING	U.S.A.	0.56%
FABRICATIONS-DETENTION DEVICES	DETENTION DEVICE SYSTEMS	U.S.A.	0.41%
FABRICATIONS-DIE & TOOL PRODUCTS	DIE & TOOL PRODUCTS, INC	U.S.A.	1.22%
FABRICATIONS-GCM	G C M	U.S.A.	1.01%
FABRICATIONS-GOLDEN PLASTICS	GOLDEN PLASTICS CORP	U.S.A.	0.17%
FABRICATIONS-HOGAN MANUFACTURING	HOGAN MFG. INC.	U.S.A.	4.89%
FABRICATIONS-IMPERIAL FABRICATORS	IMPERIAL FABRICATORS	U.S.A.	0.86%
FABRICATIONS-RON NUNES	RON NUNES ENTERPRISES	U.S.A.	0.45%
FIRE SUPPRESSION SYSTEM	FOGMAKER	U.S.A.	0.91%
FRONT AND REAR AXLE ASSEMBLIES	MERITOR AUTOMOTIVE	U.S.A.	4.31%
FRONT AND REAR BUMPER ASSEMBLIES	DYNATECH RO-LAB INC.	U.S.A.	0.63%
FRONT CAP	McCLARIN PLASTICS DBA AMTECH	U.S.A.	0.55%
ITS SYSTEM	CLEVER DEVICES LTD	U.S.A.	5.52%
INTERIOR LIGHTING KIT	SPECIALTY MANUFACTURING INC	U.S.A.	1.24%
MISCELLANEOUS-KD SPECIALTIES	KD SPECIALTIES	U.S.A.	0.48%
PASSENGER SEAT ASSEMBLIES	4ONE	U.S.A.	4.68%
PIPING & TUBING	SF TUBE	U.S.A.	1.11%
RADIATOR AND CHARGE AIR COOLER	ENGINEERED MACHINED PRODUCTS, INC	U.S.A.	2.24%
REAR CAP ASSEMBLY	COMMERCIAL PATTERN	U.S.A.	0.22%
REAR SUSPENSION	SAF HOLLAND USA	U.S.A.	0.99%
ROOF HATCH	SPECIALTY MANUFACTURING INC	U.S.A.	0.13%
ROOF SKIN	CRANE COMPOSITES	U.S.A.	0.19%
VIDEO SURVEILLANCE SYSTEM	APOLLO	U.S.A.	1.49%
VOLTAGE REGULATOR	VANNER, INC.	U.S.A.	0.13%
WHEELCHAIR RAMP	LIFT-U	U.S.A.	2.07%
WHEELWELL COVERS	McCLARIN PLASTICS DBA AMTECH	U.S.A.	0.35%
WINDOW ASSEMBLIES	RICON CORPORATION	U.S.A.	3.01%
SPECIFICALLY IDENTIFIED U.S. COMPONENTS AS A % OF TOTAL MATERIALS			72.74% *
FINAL ASSEMBLY - ALL VEHICLE ASSEMBLY OPERATIONS, STARTING WITH THE UNDERSTRUCTURE THROUGH TO FINAL ROAD TEST ARE DONE IN LIVERMORE, CA	GILLIG	U.S.A.	100.00%

GILLIG LLC
LIVERMORE, CALIFORNIA

DESCRIPTION AND COST
OF FINAL ASSEMBLY
FOR 35' & 40' LOW FLOOR BUSES
FY 2018

Gillig LLC certifies that final assembly of its buses occurs at its manufacturing plant in Livermore, California. The final assembly process consists of the assembly of the chassis; the installation and interconnection of the engine, transmission, axles, including the cooling and braking systems; the installation and interconnection of the heating and air conditioning equipment; the installation of pneumatic and electrical systems; mounting of the body structure to the chassis; installation of door systems; painting of the vehicle; installation of destination signs, windows, passenger seats, passenger grab rails, and wheelchair lifts; wheel alignment, dynamometer and road testing; final inspection, repairs and preparation of the vehicles for delivery.

The cost of the above mentioned activities for this order has been estimated to be $17,878.08 per bus.

STATE OF FLORIDA
JACKSONVILLE, FL
PRE-AWARD BUY AMERICA CERTIFICATE
THIRTY-FIVE FOOT LOW FLOOR TRANSIT BUSES (RFP# P 18-005)
24-Sep-18

GILLIG IS ONE OF THE MOST "AMERICAN" BUS MANUFACTURERS IN THE WORLD. Gillig is 100% U.S. owned and operated. ALL OF OUR FACILITIES are located in the U.S.A. ALL OF OUR MANUFACTURING is done in the U.S.A. and we have a policy that stresses the use of products produced in the U.S.A.

We certify full compliance with the FTA's "Buy America" regulations (Section 49 CFR Part 663) and submit the following abbreviated listing as evidence of this compliance.

COMPONENT	MANUFACTURER	COUNTRY OF ORIGIN	PERCENT OF TOTAL COST
A/C TRANSITION DUCTS	THERMAL STRUCTURES, INC	U.S.A.	0.11%
AIR CONDITIONING SYSTEM	THERMO KING	U.S.A.	6.60%
AIR DRYER ASSEMBLY	SKF USA, INC	U.S.A.	0.16%
BIKE RACK	BYK-RAK	U.S.A.	0.33%
BULKHEAD ASSEMBLY	ALVA GWYN	U.S.A.	0.16%
CEILING PANELS	WILSONART INTERNATIONAL	U.S.A.	0.33%
COMPOSITE FLOORING	MILWAUKEE COMPOSITES	U.S.A.	0.41%
COOLANT PUMP	ENGINEERED MACHINED PRODUCTS, INC	U.S.A.	0.12%
DESTINATION SIGNS	HANOVER DISPLAYS	U.S.A.	1.15%
DOOR CONTROLS & PANELS - FRONT	VAPOR BUS INTERNATIONAL	U.S.A.	0.76%
DOOR CONTROLS & PANELS - REAR	VAPOR BUS INTERNATIONAL	U.S.A.	0.61%
DRIVER'S BARRIER	McCLARIN PLASTICS DBA AMTECH	U.S.A.	0.11%
DRIVER'S SEAT	UNITED STATES SEATING	U.S.A.	0.71%
ELECTRICAL HARNESSES & CABLES	LACO INCORPORATED	U.S.A.	1.09%
ELECTRICAL HARNESSES, CABLES & PANELS	COMPASS COMPONENTS	U.S.A.	4.73%
ENGINE & AFTERTREATMENT SYSTEM	CUMMINS, INC	U.S.A.	14.15%
EXTERIOR MIRRORS	SAFE FLEET BUS & RAIL	U.S.A.	0.29%
EXTRUSIONS	SAPA	U.S.A.	0.86%
FABRICATIONS-BAYFAB METALS	BAYFAB METALS INC	U.S.A.	0.17%
FABRICATIONS-COMMERCIAL PATTERN	COMMERCIAL PATTERN	U.S.A.	0.28%
FABRICATIONS-DIAMOND MANUFACTURING	DIAMOND MANUFACTURING	U.S.A.	0.59%
FABRICATIONS-DETENTION DEVICES	DETENTION DEVICE SYSTEMS	U.S.A.	0.51%
FABRICATIONS-DIE & TOOL PRODUCTS	DIE & TOOL PRODUCTS, INC	U.S.A.	1.23%
FABRICATIONS-GCM	G C M	U.S.A.	0.91%
FABRICATIONS-GOLDEN PLASTICS	GOLDEN PLASTICS CORP	U.S.A.	0.18%
FABRICATIONS-HOGAN MANUFACTURING	HOGAN MFG. INC.	U.S.A.	0.38%
FABRICATIONS-IMPERIAL FABRICATORS	IMPERIAL FABRICATORS	U.S.A.	5.08%
FABRICATIONS-RON NUNES	RON NUNES ENTERPRISES	U.S.A.	0.46%
FIRE SUPPRESSION SYSTEM	FOGMAKER	U.S.A.	0.91%
FRONT AND REAR AXLE ASSEMBLIES	MERITOR AUTOMOTIVE	U.S.A.	4.35%
FRONT AND REAR BUMPER ASSEMBLIES	DYNATECH RO-LAB INC.	U.S.A.	0.63%
ITS SYSTEM	CLEVER DEVICES LTD	U.S.A.	5.57%
INTERIOR LIGHTING KIT	SPECIALTY MANUFACTURING INC	U.S.A.	1.08%
MISCELLANEOUS-KD SPECIALTIES	KD SPECIALTIES	U.S.A.	0.59%
PASSENGER SEAT ASSEMBLIES	4ONE	U.S.A.	4.10%
PIPING & TUBING	SF TUBE	U.S.A.	1.36%
RADIATOR AND CHARGE AIR COOLER	ENGINEERED MACHINED PRODUCTS, INC	U.S.A.	2.26%
REAR CAP ASSEMBLY	COMMERCIAL PATTERN	U.S.A.	0.22%
REAR SUSPENSION	SAF HOLLAND USA	U.S.A.	1.00%
ROOF HATCH	SPECIALTY MANUFACTURING INC	U.S.A.	0.13%
ROOF SKIN	CRANE COMPOSITES	U.S.A.	0.17%
VIDEO SURVEILLANCE SYSTEM	APOLLO	U.S.A.	1.50%
VOLTAGE REGULATOR	VANNER, INC.	U.S.A.	0.13%
WHEELCHAIR RAMP	LIFT-U	U.S.A.	2.09%
WHEELWELL COVERS	McCLARIN PLASTICS DBA AMTECH	U.S.A.	0.36%
WINDOW ASSEMBLIES	RICON CORPORATION	U.S.A.	2.70%
SPECIFICALLY IDENTIFIED U.S. COMPONENTS AS A % OF TOTAL MATERIALS			71.61% *
FINAL ASSEMBLY - ALL VEHICLE ASSEMBLY OPERATIONS, STARTING WITH THE UNDERSTRUCTURE THROUGH TO FINAL ROAD TEST ARE DONE IN LIVERMORE, CA	GILLIG	U.S.A.	100.00%

GILLIG LLC
LIVERMORE, CALIFORNIA

DESCRIPTION AND COST
OF FINAL ASSEMBLY
FOR 35' & 40' LOW FLOOR BUSES
FY 2018

Gillig LLC certifies that final assembly of its buses occurs at its manufacturing plant in Livermore, California. The final assembly process consists of the assembly of the chassis; the installation and interconnection of the engine, transmission, axles, including the cooling and braking systems; the installation and interconnection of the heating and air conditioning equipment; the installation of pneumatic and electrical systems; mounting of the body structure to the chassis; installation of door systems; painting of the vehicle; installation of destination signs, windows, passenger seats, passenger grab rails, and wheelchair lifts; wheel alignment, dynamometer and road testing; final inspection, repairs and preparation of the vehicles for delivery.

The cost of the above mentioned activities for this order has been estimated to be $17,878.08 per bus.

STATE OF FLORIDA
JACKSONVILLE, FL
PRE-AWARD BUY AMERICA CERTIFICATE
TWENTY-NINE FOOT LOW FLOOR TRANSIT BUSES (RFP# P 18-005)
24-Sep-18

GILLIG IS ONE OF THE MOST "AMERICAN" BUS MANUFACTURERS IN THE WORLD. Gillig is 100% U.S. owned and operated. ALL OF OUR FACILITIES are located in the U.S.A. ALL OF OUR MANUFACTURING is done in the U.S.A. and we have a policy that stresses the use of products produced in the U.S.A.

We certify full compliance with the FTA's "Buy America" regulations (Section 49 CFR Part 663) and submit the following abbreviated listing as evidence of this compliance.

COMPONENT	MANUFACTURER	COUNTRY OF ORIGIN	PERCENT OF TOTAL COST
A/C TRANSITION DUCTS	THERMAL STRUCTURES, INC	U.S.A.	0.11%
AIR CONDITIONING SYSTEM	THERMO KING	U.S.A.	6.75%
AIR DRYER ASSEMBLY	SKF USA, INC	U.S.A.	0.16%
BIKE RACK	BYK-RAK	U.S.A.	0.34%
BULKHEAD ASSEMBLY	ALVA GWYN	U.S.A.	0.17%
CEILING PANELS	WILSONART INTERNATIONAL	U.S.A.	0.32%
COMPOSITE FLOORING	MILWAUKEE COMPOSITES	U.S.A.	0.67%
COOLANT PUMP	ENGINEERED MACHINED PRODUCTS, INC	U.S.A.	0.12%
DESTINATION SIGNS	HANOVER DISPLAYS	U.S.A.	1.17%
DOOR CONTROLS & PANELS - FRONT	VAPOR BUS INTERNATIONAL	U.S.A.	0.78%
DOOR CONTROLS & PANELS - REAR	VAPOR BUS INTERNATIONAL	U.S.A.	0.62%
DRIVER'S SEAT	UNITED STATES SEATING	U.S.A.	0.72%
ELECTRICAL HARNESSES & CABLES	LACO INCORPORATED	U.S.A.	1.26%
ELECTRICAL HARNESSES, CABLES & PANELS	COMPASS COMPONENTS	U.S.A.	4.74%
ENGINE & AFTERTREATMENT SYSTEM	CUMMINS, INC	U.S.A.	14.47%
EXTERIOR MIRRORS	SAFE FLEET BUS & RAIL	U.S.A.	0.29%
EXTRUSIONS	SAPA	U.S.A.	0.85%
FABRICATIONS-BAYFAB METALS	BAYFAB METALS INC	U.S.A.	0.65%
FABRICATIONS-COMMERCIAL PATTERN	COMMERCIAL PATTERN	U.S.A.	0.29%
FABRICATIONS-DIAMOND MANUFACTURING	DIAMOND MANUFACTURING	U.S.A.	0.73%
FABRICATIONS-DETENTION DEVICES	DETENTION DEVICE SYSTEMS	U.S.A.	0.70%
FABRICATIONS-DIE & TOOL PRODUCTS	DIE & TOOL PRODUCTS, INC	U.S.A.	1.33%
FABRICATIONS-GCM	G C M	U.S.A.	1.12%
FABRICATIONS-GOLDEN PLASTICS	GOLDEN PLASTICS CORP	U.S.A.	0.21%
FABRICATIONS-HOGAN MANUFACTURING	HOGAN MFG. INC.	U.S.A.	0.23%
FABRICATIONS-IMPERIAL FABRICATORS	IMPERIAL FABRICATORS	U.S.A.	5.68%
FABRICATIONS-RON NUNES	RON NUNES ENTERPRISES	U.S.A.	0.45%
FIRE SUPPRESSION SYSTEM	FOGMAKER	U.S.A.	0.94%
FRONT AND REAR AXLE ASSEMBLIES	MERITOR AUTOMOTIVE	U.S.A.	3.84%
FRONT AND REAR BUMPER ASSEMBLIES	DYNATECH RO-LAB INC.	U.S.A.	0.65%
ITS SYSTEM	CLEVER DEVICES LTD	U.S.A.	5.70%
INTERIOR LIGHTING KIT	SPECIALTY MANUFACTURING INC	U.S.A.	0.97%
MISCELLANEOUS-KD SPECIALTIES	KD SPECIALTIES	U.S.A.	0.35%
PASSENGER SEAT ASSEMBLIES	4ONE	U.S.A.	3.40%
PIPING & TUBING	SF TUBE	U.S.A.	1.18%
RADIATOR AND CHARGE AIR COOLER	ENGINEERED MACHINED PRODUCTS, INC	U.S.A.	2.31%
REAR CAP ASSEMBLY	COMMERCIAL PATTERN	U.S.A.	0.23%
REAR SUSPENSION	SAF HOLLAND USA	U.S.A.	0.76%
ROOF HATCH	SPECIALTY MANUFACTURING INC	U.S.A.	0.13%
ROOF SKIN	CRANE COMPOSITES	U.S.A.	0.15%
VIDEO SURVEILLANCE SYSTEM	APOLLO	U.S.A.	1.53%
VOLTAGE REGULATOR	VANNER, INC.	U.S.A.	0.14%
WHEELCHAIR RAMP	LIFT-U	U.S.A.	2.08%
WINDOW ASSEMBLIES	RICON CORPORATION	U.S.A.	2.22%
SPECIFICALLY IDENTIFIED U.S. COMPONENTS AS A % OF TOTAL MATERIALS			71.50% *
FINAL ASSEMBLY - ALL VEHICLE ASSEMBLY OPERATIONS, STARTING WITH THE UNDERSTRUCTURE THROUGH TO FINAL ROAD TEST ARE DONE IN LIVERMORE, CA	GILLIG	U.S.A.	100.00%

GILLIG LLC
LIVERMORE, CALIFORNIA

DESCRIPTION AND COST OF FINAL ASSEMBLY FOR 29' LOW FLOOR BUSES FY 2018

Gillig LLC certifies that final assembly of its buses occurs at its manufacturing plant in Livermore, California. The final assembly process consists of the assembly of the chassis; the installation and interconnection of the engine, transmission, axles, including the cooling and braking systems; the installation and interconnection of the heating and air conditioning equipment; the installation of pneumatic and electrical systems; mounting of the body structure to the chassis; installation of door systems; painting of the vehicle; installation of destination signs, windows, passenger seats, passenger grab rails, and wheelchair lifts; wheel alignment, dynamometer and road testing; final inspection, repairs and preparation of the vehicles for delivery.

The cost of the above mentioned activities for this order has been estimated to be $16,698.83 per bus.

GILLIG

FMVSS CERTIFICATION

FEDERAL MOTOR VEHICLE SAFETY STANDARDS CERTIFICATION

This is to certify that the GILLIG transit bus model(s) proposed, complies (comply) with all applicable Federal Motor Vehicle Safety Standard as required by the F.T.A. and the D.O.T., and described in Title 49 CFR Chapter V, part 571-FMVSS, last revised on October 1, 1998.

GILLIG LLC

By: _____

JOSEPH POLICARPIO

Title: VICE PRESIDENT

Date: SEPTEMBER 12, 2018

REVISIONS					
SYM	DWN	ZONE	DESCRIPTION	REL	DATE
A	RAW		RELEASED FOR PRODUCTION	115460	10/04/16

MANUFACTURED BY GILLIG LLC

LIVERMORE, CALIFORNIA **DATE: _____**

GVWR: _____ kg _____ lb
GAWR: FRONT _____ kg _____ lb
WITH _____ TIRES,
_____ RIMS AT ____ kPa ____ psi COLD SINGLE
GAWR: REAR _____ kg _____ lb
WITH _____ TIRES,
_____ RIMS AT ____ kPa ____ psi COLD DUAL

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

VEHICLE I.D. NO.: _____ MODEL: _____
TYPE OF VEHICLE: BUS
ENGINE NUMBER: _____
UNLADEN WEIGHT: _____ lb

59-35132-007

NOTES:
1. ALL TEXT HEIGHT MUST BE GREATER THAN 3/32" TALL.
2. PRINT USING ZEBRA ZT410 LABEL PRINTER.
3. MINIMUM QUALITY SETTING OF 600DPI.
4. MEDIA TYPE IS THERMAL TRANSFER.
5. DARKNESS SETTING IS 28.
6. SPEED IS 2 INCHES PER SECOND.
7. DITHERING IS SMOOTH.

MAKE FROM: 59-52697-001 — QTY: 1

ITEM NO | DESCRIPTION

4 SAE

GILLIG LLC HAYWARD, CA

MARK PART W/PN PER GIL DB #370.002
LH AS SHOWN, RH OPPOSITE NONE

REMOVE ALL BURRS, BREAK SHARP EDGES

DIMENSIONING AND TOLERANCING ARE PER ANSI Y14.5M-1994 UNLESS OTHERWISE SPECIFIED TOLERANCES ARE IN INCHES:

DECIMALS: X ± .06, .XX ± .03, .XXX ± .010
ANGULAR ± .5°
THIRD ANGLE

TITLE: DECAL-DATA PLATE GILLIG LLC, LIVERMORE LOCATION

DWN: RAW — DATE: 10/04/16 — MATERIAL SPEC:
CHK'R'S INIT: — DATE: — MFG STD:
APPR'S INIT: — DATE: — FMVSS COMPL: STD NO 302
DRIG REL #: 115460 — SIZE: A — DOCUMENT NO: 59-35132-007
CAD SCALE: — SHEET 1 OF 3
IST S.D.:

Certification Regarding Lobbying Pursuant to 49 CFR Part 20 for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned Bidder certifies, to the best of his or her knowledge and belief that it complies with 31 USC §1352, as amended, 49 CFR Part 20, to the extent consistent with as necessary by 31 USC § 1352, as amended and all other applicable federal and state lobbying restrictions and specifically that:

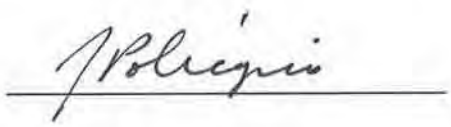
(1) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a state legislature, a Member of Congress, an officer or employee of Congress, or an employee of a Member 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 making lobbying contacts to an officer or employee of any agency, a state legislature, 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.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients 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 31 U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). 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 such failure.
[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such expenditure or failure.]

The Bidder certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Bidder understands and agrees that the provisions of 31 U.S.C. A 3801, et seq., apply to this certification and disclosure, if any.

Signature of Bidder's/Subcontractor's Authorized Official: 

Printed Name of Bidder/Subcontractor: GILLIG LLC
Printed Name: JOSEPH POLICARPIO Title: VICE PRESIDENT
Date: SEPTEMBER 12, 2018

CONFIDENTIALITY AND NONDISCLOSURE TERMS

1. Definition of Confidential Information. For purposes of this Agreement, "Confidential Information" shall include all information or material that has or could have commercial value or other utility in the business in which Disclosing Party is engaged. Additionally, "Confidential Information" shall also include any and all personal, protected or otherwise sensitive information which the Receiving Party might be exposed to during the day to day operations of the Disclosing Party.

2. Exclusions from Confidential Information. Receiving Party's obligations under this Agreement do not extend to information that is: (a) publicly known at the time of disclosure or subsequently becomes publicly known through no fault of the Receiving Party; (b) discovered or created by the Receiving Party before disclosure by Disclosing Party; (c) learned by the Receiving Party through legitimate means other than from the Disclosing Party or Disclosing Party's representatives; or (d) is disclosed by Receiving Party with Disclosing Party's prior written approval.

3. Obligations of Receiving Party. Receiving Party shall hold and maintain the Confidential Information in strictest confidence for the sole and exclusive benefit of the Disclosing Party. Receiving Party shall carefully restrict access to Confidential Information to employees, contractors and third parties as is reasonably required and shall require those persons to sign nondisclosure restrictions at least as protective as those in this Agreement. Receiving Party shall not, without prior written approval of Disclosing Party, use for Receiving Party's own benefit, publish, copy, or otherwise disclose to others, or permit the use by others for their benefit or to the detriment of Disclosing Party, any Confidential Information. Receiving Party shall return to Disclosing Party any and all records, notes, and other written, printed, or tangible materials in its possession pertaining to Confidential Information immediately if Disclosing Party requests it in writing.

4. Time Periods. The nondisclosure provisions of this Agreement shall survive the termination of this Agreement and Receiving Party's duty to hold Confidential Information in confidence shall remain in effect until the Confidential Information no longer qualifies as confidential or until Disclosing Party sends Receiving Party written notice releasing Receiving Party from this Agreement, whichever occurs first.

5. Relationships. Nothing contained in this Agreement shall be deemed to constitute either party a partner, joint venturer or employee of the other party for any purpose.

6. Severability. If a court finds any provision of this Agreement invalid or unenforceable, the remainder of this Agreement shall be interpreted so as best to effect the intent of the parties.

7. Integration. This Agreement expresses the complete understanding of the parties with respect to the subject matter and supersedes all prior proposals, agreements, representations and understandings. This Agreement may not be amended except in a writing signed by both parties.

8. Waiver. The failure to exercise any right provided in this Agreement shall not be a waiver of prior or subsequent rights.

(signature page follows)

This Agreement and each party's obligations shall be binding on the representatives, assigns, and successors of such party. Each party has signed this Agreement through its authorized representative.

(Firm Name): GILLIG LLC

By: J Policarpio

Printed Name: JOSEPH POLICARPIO

Title: VICE PRESIDENT

JACKSONVILLE TRANSPORTATION AUTHORITY:

By: _____

Printed Name: Nathaniel P. Ford Sr.

Title: Chief Executive Officer

Conflict of Interest Certification

Bidders must execute either Section 1 or 2 to certify compliance with Florida Statutes §112.313, 49 CFR 18.36(b)(3) and the FTA Master Agreement Section 3 (Ethics) ("Ethics Regulations").

No Authority Board Member, employee, officer, agent or any immediate family member or partner of any of the above, or an organization which employs or is about to employ any of the above, that has a financial or other interest in the Bidder may participate in the selection for award or award funding or administer the Contract involving the Bidder. None of the above has received any gift from the Bidder. The Contractor shall obtain this certification from all subcontractors and forward it to the Authority if Section 2 has been completed by the subcontractor.

SECTION 1

The undersigned understands the requirements of the Ethics Regulations and certifies that **no** real, apparent or potential conflict of interest exists.

Signature of Bidder's/Subcontractor's Authorized Official: JPolicarpio

Printed Name of Bidder/Subcontractor: GILLIG LLC
Printed Name: JOSEPH POLICARPIO Title: VICE PRESIDENT
Date: 9/12/18 FEI/EIN #: 26-3085365 Dun's #: 06-655-7182

SECTION 2

The undersigned understands the requirements of the Ethics Regulations and certifies that the only real, apparent or potential conflicts of interest are not substantial and are hereby disclosed in full.

Names of individuals and nature of their interest in Bidder/Subcontractor:

Signature of Bidder's/Subcontractor's Authorized Official: ------

Printed Name of Bidder/Subcontractor: ------
Printed Name: ------ Title:
Date: ------ FEI/EIN #: ------ Dun's #: ------

CERTIFICATION OF PROPOSER REGARDING DEBARMENT

The Proposer must complete the following certification statement. The Proposer must indicate its response by inserting a checkmark (□) in the space following the applicable response.

Certification:

The Proposer certifies that it, its principals, and any key team members:

□ are
☒ are not

presently suspended, debarred, excluded, or otherwise disqualified from participation in this federally assisted project by any federal department or agency.

If a Proposer responds in the affirmative to the above certification, and the contract exceeds or is expected to exceed $25,000, the Proposer is ineligible to receive an award.

Lower Tier Contractors:
The successful Proposer, by administering each lower tier subcontract for this project that exceeds $25,000, must verify that each lower tier subcontractor, at any tier, is not presently suspended, debarred, excluded, or otherwise disqualified from participation in this federally assisted project.

The successful Proposer certifies that it will accomplish this by:

1. Checking the System for Award Management at website: http://www.sam.gov;
2. Collecting a certification statement similar to the Certification of Proposer Regarding Debarment, above; and,
3. Inserting a clause or condition in the covered transaction with the lower tier contract.

On-Going Obligation of Successful Proposer:
The successful Proposer must provide immediate written notice to the Authority if it learns either that:

a) it failed to disclose information earlier, as required by 2 C.F.R. § 180.355; or,
b) (b) due to changed circumstances, it or any of the principals or any of its key team members for this project now meet any of the criteria in 2 C.F.R. § 180.355.

Termination for Failure to Disclose:
If the Authority later determines that the successful Proposer failed to disclose to the Authority that either it, **its principals, or its key team members** were suspended, debarred, excluded, or otherwise disqualified at the time it made this certification or entered the contract for this project, the Authority will terminate the contract.

The foregoing is hereby certified and acknowledged by the undersigned.

Proposer's Legal Name: GILLIG LLC, JOSEPH POLICARPIO, VICE PRESIDENT

Proposer's Signature: J Policarpio

Business Structure of Proposer (corp, jv, llc, etc.): LIMITED LIABILITY COMPANY

Primary Address: 451 DISCOVERY DRIVE, LIVERMORE, CA 94551

Name and Telephone Number of Contact Person: JOSEPH POLICARPIO, VICE PRESIDENT

800-735-1500

EQUAL OPPORTUNITY REPORT STATEMENT

AS REQUIRED AT 41-CFR-60-1.7(b)

(for construction contracts and subcontracts of all tiers exceeding $50,000)

The Proposer shall complete the following statement by checking the appropriate blanks. Failure to complete these blanks may be grounds for rejection of bid:

1. The Proposer has √ has not ___ developed and has on file at each establishment a affirmative action program pursuant to 41-CFR-60-1.40 and 41-CFR-60-2.

2. The Proposer has √ has not ___ participated in any previous contract or subcontract subject to the equal opportunity clause prescribed by Executive Order 11246, as amended.

3. The Proposer has √ has not ___ filed with the Joint Reporting Committee the annual compliance report on Standard Form 100 (EEO-1 Report). (Ref. Page GP-80)

4. The Proposer does √ does not ___ employ fifty (50) or more employees.

If the Proposer has participated in previous contracts subject to the equal opportunity clause and has not submitted compliance reports due under applicable filing requirements, the Proposer shall submit a compliance report on Standard Form 100 "Employee Information Report EEO-1" prior to the award of Contract.

The Proposer shall obtain an Equal Opportunity Report Statement from each subcontractor when the value of the subcontract exceeds $50,000.

By: _____

For: GILLIG LLC
(Proposer's Name)

JOSEPH POLICARPIO, VICE PRESIDENT
Printed Name & Title of Signing Official

JACKSONVILLE TRANSPORTATATION AUTHORITY

INTENT TO CONTRACT AS A DBE SUBCONTRACTOR/SUBCONSULTANT

PROPOSAL/SOLICITATION NUMBER: _____

Pursuant to DBE policy, businesses participating in the JTA's DBE Program must be certified by the Florida Uniform Certification Program (UCP) at the time of submittal of bid. The firm must be listed in the Florida UCP/DBE directory as a certified DBE firm. (http://www3b.dot.state.fl.us/EqualOpportunityOfficeBusinessDirectory/CustomSearch.aspx)

1. **Name of Prime Contractor/Consultant** GILLIG LLC
2. **Address, City, State and Zip** 451 DISCOVERY DRIVE
3. **FEIN Number of DBE Firm** _____ - ------
4. **The DBE subcontractor/subconsultant listed below is certified by which member agency within the Florida UCP?** NOT APPLICABLE
   ☐ **JTA** ☐ **FDOT** ☐ **GOAA (Orlando Airport)** ☐ **Volusia County** ☐ **Miami/Dade County** ☐ **Broward County**
   ☐ **HCAA (Hillsborough County)** ☐ **City of Tallahassee** ☐ **Lee County Port** ☐ **Key West Airport**
5. **The undersigned DBE firm is prepared to perform the following described work and/or supply the material listed in connection with the above project (where applicable specify "supply or "install" or both):**
   NOT APPLICABLE - GILLIG DOES NOT SUB-CONTRACT THE MANUFATURE OF OUR VEHICLES.

   and at the following price $ ------. **With respect to the proposed subcontract described above,** -----**% of the dollar value of such subcontract will be sublet and/or awarded to the following DBE firm:**

------	------	------
Name of DBE Firm	**Address, City, State and Zip**	**Telephone**
------	------	--/--/--
Signature of Owner, President or Authorized Agent of DBE Firm	**Printed Name of Signer**	**Date**

DECLARATION OF PRIME CONTRACTOR/CONSULTANT

I HERBY DECALRE AND AFFIRM that I am the VICE PRESIDENT
(Title Declarant)

and duly authorized representative of GILLIG LLC
(Name of Prime Contractor/Consultant)

to make this declaration and that I have personally reviewed the materials and facts set forth in this Intent to Perform form. To the best of my knowledge, information and belief, the facts and representations contained in this form are true, the owner or authorized agent of the DBE business signed this form in the place indicated, and no material facts have been omitted.

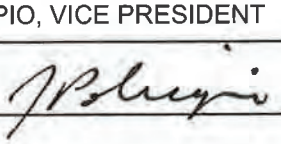
Except as authorized by the JTA Diversity & Equity Manager or his/her designee, the undersigned will enter into a formal agreement with the listed DBE business for work indicated by this form prior to the effective start date of the contract. The undersigned will, if requested, provide the JTA Diversity & Equity Manager or his/her designee a copy of that agreement.

The Prime Contractor/Consultant designated the following person as its DBE Liaison Officer:

MARLA LOAR, DIRECTOR OF HUMAN RESOURCES	800-735-1500
Please Print Name	**Phone**

Pursuant to State Law, any person (entity) who makes a false of fraudulent statement in connection with the participation of a DBE in any locally funded project or otherwise violates applicable program requirements may be referred for prosecution.

JOSEPH POLICARPIO, VICE PRESIDENT
Name of Declarant


Signature

09 / 12 / 2018
Date

Proposer's Standard Assurances

Name of Proposer:

At this time, we understand all requirements and state that as a serious proposer we will comply with all the stipulations included in the proposal package.

The above-named proposer affirms and declares:

1. That the Proposer is of lawful age and that no other person, firm, or corporation has any interest in this Proposal.

2. That this Proposal is made without any understanding, agreement, or connection with any other person, firm, or corporation making a Proposal for the same project, and is in all respects fair and without collusion or fraud.

3. That the Proposer has carefully examined the site of the work and that from his/her investigations has been satisfied as to the nature and location of the work, the kind and extent of the equipment and other facilities needed for the performance of the work, the general and local conditions, all difficulties to be encountered, and all other items which in any way affect the work or its performance.

4. That the Proposer is in full compliance with all federal, state, and local laws and regulations and intends to fully comply with same during the entire term of the contract.

In witness thereof, this Proposal is hereby signed by the duly authorized representative of the Proposer and sealed as of the date indicated.

PROPOSER:	ATTEST:
Signature	Witness Signature
JOSEPH POLICARPIO, VICE PRESIDENT	SEPTEMBER 12, 2018
Type Name and Title	Date

JACKSONVILLE TRANSPORTATION AUTHORITY

PAST EXPERIENCE/PERFORMANCE REFERENCE INFORMATION FORM

1. Complete name of Government agency, commercial firm, or other organization ATHENS TRANSIT	
2. Complete address 775 EAST BROAD STREET ATHENS, GA 30601	
3. Contract number or other reference RFP# 00680 HEAVY DUTY TRANSIT BUS CONSORTIUM	4. Date of contract OCTOBER 29, 2014
5. Date work was begun OCTOBER 29, 2014	6. Date work was completed OCTOBER 28, 2019
7. Estimated contract price APPROXIMATELY $68MM AT A MINIMUM	8. Final amount invoiced or amount invoiced to date INVOICED TO DATE $73MM
9. Technical point of contact (name, title, address, telephone no and email address) BUTCH MCDUFFIE, GENERAL MANAGER BUTCH.MCDUFFIE@ATHENSCLARKECOUNTY.COM 706-613-3913 775 EAST BROAD STREET, ATHENS, GA 30601	10. Location of work (country, state or province, county, city) GILLIG 451 DISCOVERY DRIVE LIVERMORE, CA 94551

11. Description of contract work (Describe the nature and scope of the experience and provide an explanation of how the work is the same or similar to the work required by JTA). Attach an explanation of any performance problems or other conflicts with the customer. Use a continuation sheet, if necessary.)

MANUFACTURE OF HEAVY DUTY 29', 35' & 40' LOW FLOOR TRANSIT BUSES IN DIESEL, HYBRID OR CNG CONFIGURATIONS.

PLEASE SEE OUR CUSTOMER REFERENCE LIST, TESTIMONIAL LETTERS AND LOW FLOOR CUSTOMER LIST IN TAB 8 APPENDICES, TAB #2 FOR ADDITIONAL CUSTOMER REFERENCES.

12. Current status of contract:

CURRENT 5 YEAR CONTRACT EXPIRES OCTOBER 28, 2019

13. Signature of Bidder / Date	14. Print Name of Bidder
J Policarpio	GILLIG LLC

Instructions: Provide information requested in sections 1 through 14. Form must be filled out completely and signed by the Bidder Please print and fill out three forms for three different projects.

JACKSONVILLE TRANSPORTATION AUTHORITY

PAST EXPERIENCE/PERFORMANCE REFERENCE INFORMATION FORM

1. Complete name of Government agency, commercial firm, or other organization CHATHAM AREA TRANSIT AUTHORITY	
2. Complete address 900 EAST GWINNETT STREET SAVANNAH, GA 31412	
3. Contract number or other reference CONSORTIUM MEMBER ON RFP# 00680 HEAVY DUTY TRANSIT BUS CONSORTIUM	4. Date of contract OCTOBER 29, 2014
5. Date work was begun OCTOBER 29, 2014	6. Date work was completed OCTOBER 28, 2019
7. Estimated contract price APPROXIMATELY $68MM AT A MINIMUM	8. Final amount invoiced or amount invoiced to date INVOICED TO DATE $73MM ($10MM SAVANNAH PURCHASES)
9. Technical point of contact (name, title, address, telephone no and email address) CURTIS KOLEBER, CEO & EXECUTIVE DIRECTOR CURTIS.KOLEBER@CATCHACAT.ORG 912-629-3936 900 EAST GWINNETT STREET, SAVANNAH, GA 31412	10. Location of work (country, state or province, county, city) GILLIG 451 DISCOVERY DRIVE LIVERMORE, CA 94551

11. Description of contract work (Describe the nature and scope of the experience and provide an explanation of how the work is the same or similar to the work required by JTA). Attach an explanation of any performance problems or other conflicts with the customer. Use a continuation sheet, if necessary.)

MANUFACTURE OF HEAVY DUTY 29', 35' & 40' LOW FLOOR TRANSIT BUSES IN DIESEL, HYBRID OR CNG CONFIGURATIONS.

PLEASE SEE OUR CUSTOMER REFERENCE LIST, TESTIMONIAL LETTERS AND LOW FLOOR CUSTOMER LIST IN TAB 8 APPENDICES, TAB #2 FOR ADDITIONAL CUSTOMER REFERENCES.

12. Current status of contract:

CURRENT 5 YEAR CONTRACT EXPIRES OCTOBER 28, 2019

13. Signature of Bidder Date J Policarpio	14. Print Name of Bidder GILLIG LLC

Instructions: Provide information requested in sections 1 through 14. Form must be filled out completely and signed by the Bidder Please print and fill out three forms for three different projects.

JACKSONVILLE TRANSPORTATION AUTHORITY

PAST EXPERIENCE/PERFORMANCE REFERENCE INFORMATION FORM

1. Complete name of Government agency, commercial firm, or other organization METROPOLITAN ATLANTA RAPID TRANSIT AUTHORITY (MARTA)	
2. Complete address 2424 PIEDMONT ROAD, NE ATLANTA, GA 30324-3330	
3. Contract number or other reference CONTRACT # P35484 PROCUREMENT OF 40' CNG BUSES	4. Date of contract NOVEMBER 29, 2016
5. Date work was begun NOVEMBER 29, 2016	6. Date work was completed NOVEMBER 28, 2021
7. Estimated contract price APPROXIMATELY $172MM	8. Final amount invoiced or amount invoiced to date INVOICED TO DATE $31MM
9. Technical point of contact (name, title, address, telephone no. and email address) ERIC JOHNSON, GENERAL SUPERINTENDENT EJOHNSON4@ITSMARTA.COM 404-848-6884 2424 PIEDMONT ROAD, NE ATLANTA, GA 30324-3330	10. Location of work (country, state or province, county, city) GILLIG 451 DISCOVERY DRIVE LIVERMORE, CA 94551
11. Description of contract work (Describe the nature and scope of the experience and provide an explanation of how the work is the same or similar to the work required by JTA). Attach an explanation of any performance problems or other conflicts with the customer. Use a continuation sheet, if necessary) MANUFACTURE OF HEAVY DUTY 40' CNG LOW FLOOR TRANSIT BUSES. PLEASE SEE OUR CUSTOMER REFERENCE LIST, TESTIMONIAL LETTERS AND LOW FLOOR CUSTOMER LIST IN TAB 8 APPENDICES, TAB #2 FOR ADDITIONAL CUSTOMER REFERENCES.	
12. Current status of contract: CURRENT 5 YEAR CONTRACT EXPIRES NOVEMBER 28, 2021.	
13. Signature of Bidder Date J Policarpio	14. Print Name of Bidder GILLIG LLC

Instructions: Provide information requested in sections 1 through 14. Form must be filled out completely and signed by the Bidder. Please print and fill out three forms for three different projects.

JACKSONVILLE TRANSPORTATION AUTHORITY

PAST EXPERIENCE/PERFORMANCE REFERENCE INFORMATION FORM

1. Complete name of Government agency, commercial firm, or other organization CHARLOTTE AREA TRANSIT SYSTEM	
2. Complete address 3145 S. TRYON STREET CHARLOTTE, NC 28217	
3. Contract number or other reference RFP# 269-20130706001 BUS PROCUREMENT PROJECT	4. Date of contract JANUARY 19, 2015
5. Date work was begun JANUARY 19, 2015	6. Date work was completed JANUARY 19, 2020
7. Estimated contract price APPROXIMATELY $131MM	8. Final amount invoiced or amount invoiced to date INVOICED TO DATE $51MM
9. Technical point of contact (name, title, address, telephone no and email address) REGGIE ARRINGTON, ASSISTANT GENERAL MANAGER RARRINGTON@CI.CHARLOTE.NC.US 704-432-3618 3145 S. TRYON STREET, CHARLOTTE, NC 28217	10. Location of work (country, state or province, county, city) GILLIG 451 DISCOVERY DRIVE LIVERMORE, CA 94551

11. Description of contract work (Describe the nature and scope of the experience and provide an explanation of how the work is the same or similar to the work required by JTA). Attach an explanation of any performance problems or other conflicts with the customer. Use a continuation sheet, if necessary.)

MANUFACTURE OF HEAVY DUTY 29', & 40' LOW FLOOR TRANSIT BUSES IN DIESEL OR HYBRID CONFIGURATIONS.

PLEASE SEE OUR CUSTOMER REFERENCE LIST, TESTIMONIAL LETTERS AND LOW FLOOR CUSTOMER LIST IN TAB 8 APPENDICES, TAB #2 FOR ADDITIONAL CUSTOMER REFERENCES.

12. Current status of contract:

CURRENT 5 YEAR CONTRACT EXPIRES JANUARY 19, 2020

13. Signature of Bidder Date J Polinzio	14. Print Name of Bidder GILLIG LLC

Instructions: Provide information requested in sections 1 through 14. Form must be filled out completely and signed by the Bidder. Please print and fill out three forms for three different projects.

JACKSONVILLE TRANSPORTATION AUTHORITY

PAST EXPERIENCE/PERFORMANCE REFERENCE INFORMATION FORM

1. Complete name of Government agency, commercial firm, or other organization CHAPEL HILL TRANSIT	
2. Complete address 6900 MILL HOUSE ROAD CHAPEL HILL, NC 27516	
3. Contract number or other reference CONSORTIUM MEMBER ON IFB# 16-0009 JOINT PROCUREMENT 40' LF TRANSIT BUSES	4. Date of contract JULY 20, 2016
5. Date work was begun JULY 20, 2016	6. Date work was completed JULY 19, 2021
7. Estimated contract price APPROXIMATELY $68 MM	8. Final amount invoiced or amount invoiced to date INVOICED TO DATE $22MM ($10MM CHAPEL HILL PURCHASES)
9. Technical point of contact (name, title, address, telephone no and email address) PETER AUBE, MAINTENANCE MANAGER PAUBE@TOWNOFCHAPELHILL.ORG 802-557-2492 6900 MILL HOUSE ROAD, CHAPEL HILL, NC 27516	10. Location of work (country, state or province, county, city) GILLIG 451 DISCOVERY DRIVE LIVERMORE, CA 94551

11. Description of contract work (Describe the nature and scope of the experience and provide an explanation of how the work is the same or similar to the work required by JTA). Attach an explanation of any performance problems or other conflicts with the customer. Use a continuation sheet, if necessary)

MANUFACTURE OF HEAVY DUTY 40' DIESEL LOW FLOOR TRANSIT BUSES.

PLEASE SEE OUR CUSTOMER REFERENCE LIST, TESTIMONIAL LETTERS AND LOW FLOOR CUSTOMER LIST IN TAB 8 APPENDICES, TAB #2 FOR ADDITIONAL CUSTOMER REFERENCES.

12. Current status of contract:

CURRENT 5 YEAR CONTRACT EXPIRES JULY 19, 2021

13. Signature of Bidder / Date	14. Print Name of Bidder
J Policarpio	GILLIG LLC

Instructions: Provide information requested in sections 1 through 14. Form must be filled out completely and signed by the Bidder. Please print and fill out three forms for three different projects.

JACKSONVILLE TRANSPORTATION AUTHORITY

PAST EXPERIENCE/PERFORMANCE REFERENCE INFORMATION FORM

1. Complete name of Government agency, commercial firm, or other organization TRIANGLE TRANSIT	
2. Complete address 5201 NELSON ROAD MORRISVILLE, NC 27560	
3. Contract number or other reference CONSORTIUM MEMBER ON IFB# 16-0009 JOINT PROCUREMENT 40' LF TRANSIT BUSES	4. Date of contract JULY 20, 2016
5. Date work was begun JULY 20, 2016	6. Date work was completed JULY 19, 2021
7. Estimated contract price APPROXIMATELY $68 MM	8. Final amount invoiced or amount invoiced to date INVOICED TO DATE $22MM ($5MM TRIANGLE TRANSIT PURCHASES)
9. Technical point of contact (name, title, address, telephone no and email address) PAT STEPHENS, DIRECTOR OF TRANSIT OPERATIONS PSTEPHENS@GOTRIANGLE.ORG 919-485-7456 5201 NELSON ROAD, MORRISVILLE, NC 27560	10. Location of work (country, state or province, county, city) GILLIG 451 DISCOVERY DRIVE LIVERMORE, CA 94551
11. Description of contract work (Describe the nature and scope of the experience and provide an explanation of how the work is the same or similar to the work required by JTA). Attach an explanation of any performance problems or other conflicts with the customer. Use a continuation sheet, if necessary) MANUFACTURE OF HEAVY DUTY 40' DIESEL LOW FLOOR TRANSIT BUSES. PLEASE SEE OUR CUSTOMER REFERENCE LIST, TESTIMONIAL LETTERS AND LOW FLOOR CUSTOMER LIST IN TAB 8 APPENDICES, TAB #2 FOR ADDITIONAL CUSTOMER REFERENCES.	
12. Current status of contract: CURRENT 5 YEAR CONTRACT EXPIRES JULY 19, 2021	
13. Signature of Bidder Date J Poliziani	14. Print Name of Bidder GILLIG LLC

Instructions: Provide information requested in sections 1 through 14. Form must be filled out completely and signed by the Bidder Please print and fill out three forms for three different projects

PROPOSER'S LIST

FOR NAME OF PRIME CONTRACTR OR/CONTRACTOR: GILLIG LLC

The Contractor shall provide information on ALL prospective subcontractor(s)/supplier(s) who were contacted or submitted bids/quotations in support of this solicitation. **Attach additional copies of the form as necessary**.

NAME OF SUBCONTRACTOR/SUPPLIER(S)	SCOPE OF WORK TO BE PERFORMED	CERTIFIED DBE FIRM? (Check all that apply)	PERVIOUS YEAR'S ANNUAL GROSS RECEIPTS	UTILIZING ON THIS CONTRACT? (Please circle answer)
NOT APPLICABLE - GILLIG DOES NOT SUB-CONTRACT THE MANUFATURE OF OUR VEHICLES.				
NAME: ADDRESS: ------	SCOPE OF WORK: ------	YES: ------	Less than $500K ------	YES or NO ------
			$500K-$2 mil	
PHONE:		NO:	$2 mil - $5 mil	
FAX:			more than $5 mil.	
CONTACT PERSON:	AGE OF FIRM:			
NAME: ADDRESS: ------	SCOPE OF WORK: ------	YES: ------	Less than $500K ------	YES or NO ------
			$500K-$2 mil	
PHONE:		NO:	$2 mil - $5 mil	
FAX:			more than $5 mil.	
CONTACT PERSON:	AGE OF FIRM:			
NAME: ADDRESS: ------	SCOPE OF WORK: ------	YES: ------	Less than $500K ------	YES or NO ------
			$500K-$2 mil	
PHONE:		NO:	$2 mil - $5 mil	
FAX:			more than $5 mil.	
CONTACT PERSON:	AGE OF FIRM:			
NAME: ADDRESS: ------	SCOPE OF WORK: ------	YES: ------	Less than $500K ------	YES or NO ------
			$500K-$2 mil	
PHONE:		NO:	$2 mil - $5 mil	
FAX:			more than $5 mil.	
CONTACT PERSON:	AGE OF FIRM:			

Name/Title of person completing this form: JOSEPH POLICARPIO, VICE PRESIDENT

Signature: J Policarpio Date: SEPTEMBER 12, 2018

JACKSONVILLE TRANSPORTATION AUTHORITY

SCHEDULE OF SUBCONSULTANTS/SUBCONTRACTORS

Contractor: GILLIG LLC ☐ **DBE** ☒ **NON-DBE**

Description of Project: MANUFACTURE AND DELIVERY OF LOW FLOOR TRANSIT BUSES.

Solicitation No.: P-18-005 Contract Date: PROPOSAL DUE DATE: SEPTEMBER 14, 2018

As part of the procedures for the submission of Proposals/Bids, all Contractors are required to identify **ALL** participating SUBCONSULTANTS/SUBCONTRACTORS. Please identify such areas for above project, if applicable. Use additional sheets if necessary.

Name of Business Performing Work	Certification Status (check one box)		Description of Commodity, Material, or Service	To be completed for DBE Supply Providers only, check applicable boxes			Dollar Amount Of Spend (if known)	Anticipated DBE Percentage Based on Supply Provider Checked
	DBE	NON-DBE		Manufacturer 100% of Spend	Regular Dealer 60% of Spend	Broker 100% Fees & Commissions		
NOT APPLICABLE - GILLIG DOES NOT SUB-CONTRACT THE MANUFATURE OF OUR VEHICLES.							$	
							$	
							$	
							$	
							$	
Dollar Amount or Anticipated Percentage of Work to be Completed by Non-DBE SUBCONSULTANTS/SUBCONTRACTORS							$ ------	
Dollar Amount or Anticipated Percentage of Work to be Completed by DBE SUBCONSULTANTS/SUBCONTRACTORS							$ ------	
Total							$ ------	

All **DBE** SUBCONSULTANTS/SUBCONTRACTORS must be certified as such by the JTA, FDOT or one of the designated certifying members of the Florida UCP DBE program. It is understood and agreed that, if awarded a Contract by the JTA, the Contractor will not make additions, deletions, or substitutions to this certified list without the consent of the JTA Diversity & Equity Program Manager or designee through the submittal of *Request for Approval of Change to Original Certified List of SUBCONSULTANTS/SUBCONTRACTORS*. It is understood that the JTA may audit any and/or all records of the Contract/vendor and conduct interviews of owners, principals, officers, employees and applicable SUBCONSULTANTS/SUBCONTRACTORS participating on the Contract. The Diversity & Equity Program Office reserves the right to ensure compliance with the JTA's **DBE** program to include status reports and audit of submitted **DBE** information as deemed necessary.

CONTRACTOR'S CERTIFICATION

The above information is true and complete, to the best of my knowledge and belief. I further understand and agree that if awarded the Contract, this certification shall be attached thereto and become a part thereof. Failure to provide accurate information or exercise positive, good faith efforts (as defined by the JTA's **DBE** Program) in support of the JTA's DBE's intent and objective may result in being considered non-responsive to the JTA's requirements. The Diversity & Equity Program Office reserves the right to recommend an audit on the submitted **DBE** information as deemed necessary.

Name and Title: JOSEPH POLICARPIO, VICE PRESIDENT
(Please print or type)

Signature: JPolicarpio Date: SEPTEMBER 12, 2018

As defined in 49 CFR Part-26 - Page 102 of 2017

TRANSIT VEHICLE MANUFATURER CERTIFICAITON
(Bus or Rail Car Purchases Only)

CERTIFICATION OF DISADVANTAGED BUSINESS ENTERPRISES (DBE) COMPLIANCE

The responder, a Primary Transit Vehicle Manufacturer, hereby certifies that it has complied with the requirements of 49 CFR Section 26.49, as amended, by submitting an annual DBE goal, as amended, to the Federal Transit Administration (FTA). The goal has either been approved or not disapproved by the FTA.

SIGNATURE: J Policarpio

PRINT NAME: JOSEPH POLICARPIO

TITLE: VICE PRESIDENT

COMPANY: GILLIG LLC

DATE: SEPTEMBER 12, 2018

REFERENCE OUR ATTACHED FTA TVM/DBE GOAL CONCURRENCE/CERTIFICATION LETTER AND OUR DBE CERTIFICATION.

U.S. Department
of Transportation
**Federal Transit
Administration**

Headquarters

East Building, 5th Floor – TCR
1200 New Jersey Avenue, SE
Washington, DC 20590

September 1, 2017

Chris Turner
Gillig, LLC
P.O. Box 3008
Hayward, CA 94545-3008

Re: TVM DBE Goal Concurrence/Certification Letter – Fiscal Year 2018

Dear Mr. Turner:

This letter is to inform you that the Federal Transit Administration's (FTA) Office of Civil Rights has received Gillig, LLC's Disadvantaged Business Enterprise (DBE) goal and methodology for FY 2018 for the period of October 1, 2017–September 30, 2018. This goal submission is required by the U.S. Department of Transportation's DBE regulations at 49 CFR Part 26 and must be implemented in good faith.

We have reviewed your FY 2018 DBE goal and determined that it is compliant with DOT's DBE regulations. You are eligible to bid on FTA-funded transit contracts. This letter or a copy of the TVM listing on FTA's website may be used to demonstrate your compliance with DBE requirements when bidding on federally funded vehicle procurements.

FTA reserves the right to remove/suspend this concurrence if your DBE program or FY 2018 DBE goal is not implemented in good faith. In accordance with this good faith requirement, you must submit your DBE Uniform Report to FTA by December 1, 2017. This report should reflect all FTA-funded contracting activity for the second period of FY 2017 (i.e., from April 1 to September 30).

Please also be mindful that your FY 2019 DBE goal methodology must be submitted to FTA by August 1, 2018. Any updates to the program plan must be submitted to FTA as they occur. Thank you for your cooperation. If you have any questions regarding this approval, please contact the FTA DBE Team via e-mail at *FTATVMSubmissions@dot.gov*.

Sincerely,

John Day
Program Manager for Policy and Technical Assistance
Office of Civil Rights

DISADVANTAGED/MINORITY BUSINESS ENTERPRISE (DBE/MBE) CERTIFICATION

GILLIG LLC, 451 Discovery Drive, Livermore California 94551, hereby certifies that GILLIG LLC has complied with the requirements of 49 CFR Part 26 of the Transportation Assistance Act of 1982, and submitted the required documents to the Federal Transit Administration (FTA).

The FTA advised that GILLIG has obtained 49 C.F.R. Part 26.49 certification and we are eligible to bid on federally funded contracts in FY2018. Transit customers may call the FTA for verification.

BRITNEY BERRY
FEDERAL TRANSIT ADMINISTRATION
Office of Civil Rights
1200 New Jersey Avenue SE
Washington, DC 20590
Phone: 202-366-1065
E-mail: britney.berry@dot.gov

GILLIG LLC

By: J Policarpio

JOSEPH POLICARPIO

Title: VICE PRESIDENT

Date: SEPTEMBER 12, 2018

7-17

CER 8.8 Federal Motor Vehicle Safety Standards

The Proposer and (if selected) Contractor shall submit (1) manufacturer's FMVSS self-certification sticker information that the vehicle complies with relevant FMVSS or (2) manufacturer's certified statement that the contracted buses will not be subject to FMVSS regulations.

Company name:
Name of signer:
Title:

J Policarpio — SEPTEMBER 12, 2018

Authorized signature JOSEPH POLICARPIO, VICE PRESIDENT — Date

REFERENCE OUR ATTACHED FMVSS SELF-CERTIFICATION STICKER.

REVISIONS					
SYM	DWN	ZONE	DESCRIPTION	REL.	DATE
A	RAW		RELEASED FOR PRODUCTION	115460	10/04/16

MANUFACTURED BY GILLIG LLC

LIVERMORE, CALIFORNIA **DATE: _____**

GVWR: _____ kg _____ lb
GAWR: FRONT _____ kg _____ lb
WITH _____ TIRES,
_____ RIMS AT ____ kPa ____ psi COLD SINGLE
GAWR: REAR _____ kg _____ lb
WITH _____ TIRES,
_____ RIMS AT ____ kPa ____ psi COLD DUAL

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

VEHICLE I.D. NO.: _____ MODEL: _____
TYPE OF VEHICLE: BUS
ENGINE NUMBER: _____
UNLADEN WEIGHT: _____ lb

59-35132-007

NOTES:
1. ALL TEXT HEIGHT MUST BE GREATER THAN 3/32" TALL.
2. PRINT USING ZEBRA ZT410 LABEL PRINTER.
3. MINIMUM QUALITY SETTING OF 600DPI.
4. MEDIA TYPE IS THERMAL TRANSFER.
5. DARKNESS SETTING IS 28.
6. SPEED IS 2 INCHES PER SECOND.
7. DITHERING IS SMOOTH.

MAKE FROM: 59-52697-001			1
ITEM NO	DESCRIPTION		QTY
4 BAC	GILLIG LLC HAYWARD, CA	MARK PART W/PN PER GIL DB #370.002	
		LH AS SHOWN, RH OPPOSITE NONE	

REMOVE ALL BURRS, BREAK SHARP EDGES

DIMENSIONING AND TOLERANCING ARE PER ANSI Y14.5M-1994
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE IN INCHES

DECIMALS: X ± .06, XX ± .03, XXX ± .010 ANGULAR ± .5°

THIRD ANGLE

TITLE:	DECAL-DATA PLATE GILLIG LLC, LIVERMORE LOCATION		
DWN: RAW	DATE: 10/04/16	MATER'L SPEC:	
CHKR'S INIT:	DATE:	MFG STD:	
APPR'S INIT:	DATE:	FMVSS COMPL:	STD NO 302
DRIG REL #: 115460	SIZE: A	DOCUMENT NO: 59-35132-007	
CAD SCALE:		SHEET 1 OF 3	

Exhibit 'E' - Required Clauses For FTA-Assisted Contracts

(On following pages)

Exhibit 'E'

REQUIRED CLAUSES FOR FEDERALLY ASSISTED CONTRACTS

REQUIRED CLAUSES FOR FTA-ASSISTED CONTRACTS

The following terms apply when the Authority determines that the Contract involves or may involve the expenditure of federal funds. Unless otherwise set forth below, the Contractor must include every clause of this Section VI in all subcontracts under this Contract.

1. **Non-Discrimination**. The Contractor shall comply with the applicable requirements of Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d et seq., 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. § 12101 et seq., 29 U.S.C. § 794, 49 CFR Part 21, 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, creed, color, sex, sexual orientation, gender identity, national origin, religion, age, disability, or family status. Discrimination includes exclusion from participation, denial of program benefits and discrimination in employment or business opportunity. In addition, the Contractor agrees to comply with all applicable federal and state regulations, including those of any agency of the United States Department of Transportation (U.S. DOT) and the Florida Department of Transportation (FDOT), including FTA Advisory Circular 4702.1.

2. **Equal Employment Opportunity.**

   (a) Race, Creed, Color, Sex, Sexual Orientation, Gender Identity, National Origin, Religion, or Family Status – The Contractor shall comply 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, 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 as supplemented by 41 CFR 60), and with any applicable federal statutes, executive orders, regulations, and federal policies that may in the future affect activities undertaken in the course of the Contract. 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, creed, color, sex, sexual orientation, gender identity, national origin, religion, or family status. 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 or FHWA may issue.

   (b) Age - In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § 621-634, 29 CFR Part 1625, 45 CFR Part 90, 42 U.S.C. §§6101 et seq. and federal transit law including 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination for reason of age. In addition, the

Contractor agrees to comply with any implementing requirements the Department of Health and Human Services, the EEOC, FTA or FHWA may issue.

(c) Disabilities - The Contractor agrees that it will comply with the requirements of Titles I, II, III, IV and V of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12101 et seq., and the 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 29 U.S.C. § 794, 42 U.S.C. §4151, federal transit law including 49 U.S.C. § 5332, and any implementing requirements FTA or FHWA may issue.

3. **Compliance with Nondiscrimination Regulations.** The Contractor and all subcontractors shall comply with the regulations relative to nondiscrimination in federally-assisted programs of the U.S. DOT, Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of the Contract. In addition, the Contractor agrees to comply with federal transit law at 49 U.S.C. Section 5332, which prohibits discrimination on the basis of race, creed, color, sex, sexual orientation, gender identity, national origin, religion, age, disability, or family status and prohibits discrimination in employment or business opportunity.

4. **Nondiscrimination.** The Contractor and all subcontractors, with regard to the work performed during the Contract, will not discriminate on the basis of race, creed, color, sex, sexual orientation, gender identity, national origin, religion, age, disability, or family status in the selection and retention of subcontractors, including procurements of material and leases of equipment. The Contractor and all subcontractors will not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the Contract covers a program set forth in Appendix B of the Regulations.

5. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment.** In all solicitations made by the Contractor and all subcontractors, either by competitive bidding or negotiation for work to be performed under a subcontract, including procurements of materials and leases of equipment, each potential subcontractor or Contractor shall be notified in writing by the Contractor of the Contractor's obligations under this Contract and the Regulations relative to nondiscrimination on the basis of race, creed, color, sex, sexual orientation, gender identity, national origin, religion, age, disability, or family status and that these same obligations extend to any subcontractor, Contractor or lessor.

6. **Information and Reports.** The Contractor will provide all information and reports required by the Regulations, or directives issued pursuant thereto, and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Authority, the FDOT, the U.S. DOT or any other governmental agency designated by the Authority to be pertinent to ascertain compliance with such Regulations,

orders and instructions. Where any information required of the Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the Authority, FDOT, U.S. DOT or any other governmental agency designated by the Authority, and shall set forth what efforts it has made to obtain the information.

7. **Sanctions for Noncompliance.** In the event of the Contractor's noncompliance with the nondiscrimination provisions of this Contract, the Authority shall impose such contract sanctions as it, the FDOT or the U.S. DOT may determine to be appropriate, including, but not limited to

(a) withholding of payments to the Contractor under the Contract until the Contractor complies and/or

(b) cancellation, termination or suspension of the Contract, in whole or in part.

8. **Incorporation of Provisions.** The Contractor shall include the provisions of Paragraphs 1 through 8, in every subcontract, including procurements of materials and leases of equipment unless exempt by the Regulations, order, or instructions issued pursuant thereto. The Contractor will take such action with respect to any subcontract or procurement as the Authority, the FDOT or the U.S. DOT may direct as a means of enforcing such provisions, including sanctions for noncompliance. In the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or Contractor as a result of such direction, the Contractor may request the Authority and the FDOT to enter into such litigation to protect the interests of the Authority and the FDOT, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

9. **Participation by Disadvantage Business Enterprises.** The Contractor shall abide by the following statement from 49 CFR 26.13(b). This statement shall be included in all subsequent agreements between the Contractor and any subcontractor or Contractor.

The Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, creed, color, sex, sexual orientation, gender identity, national origin, religion, age, disability, or family status 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 termination of this Contract or other such remedy as the Authority deems appropriate.

10. **Debarment, Suspension, Ineligibility and Voluntary Exclusion.** If the Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction that the Contractor provided as part of its Proposal was erroneous when submitted or has become erroneous by reason of changed circumstances, the Contractor shall provide immediate written notice to the Authority.

11. **Sensitive Security Information.** The Contractor shall protect, and take measures to ensure that its subcontractors at each tier protect, "sensitive security information" made available during the administration of a third party contract or subcontract to ensure compliance with 49 U.S.C. Section 40119(b) and implementing DOT regulations, "Protection of Sensitive Security Information," 49 CFR Part 15, and with 49 U.S.C. Section 114(r) and implementing Department of Homeland Security regulations, "Protection of Sensitive Security Information," 49 CFR Part 1520.

12. **Changes to Federal Requirements.** The Contractor shall at all times comply with all applicable US DOT, FHWA and FTA regulations, policies, procedures, directives and federal guidance, including without limitation those listed directly or by reference in the Master Agreement (Form FTA MA (19) dated October 2012) between the Authority and FTA, as they may be amended or promulgated from time to time during the term of a Contract resulting from this Solicitation. The Contractor shall not perform any act, fail to perform any act or refuse to comply with any request of the Authority which would cause the Authority to be in violation of any of the FTA or FHWA terms and conditions. The Contractor's failure to so comply shall constitute a material breach of this Contract.

13. **Incorporation of Federal Transit Administration and Federal Highway Administration Terms.** All contractual provisions required by the US DOT, as set forth in FTA Circular 4220.1F, revised March 18, 2013, whether or not set forth in this Contract are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA and FHWA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Contract. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any Authority request which would cause the Authority to be in violation of FTA and FHWA terms and conditions.

14. **Fly America.** 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 subrecipients 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.

15. **No Federal Government Obligation to Third Parties.** Notwithstanding any concurrence by the federal government in or approval of the solicitation or award of the 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 Authority, Contractor, or any other party (whether or not a party to the Contract) pertaining to any matter resulting from this Contract.

16. **False or Fraudulent Statements or Claims and Related Acts – Civil and Criminal Fraud.** 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 this Contract. Upon execution of the Contract, the Contractor certifies or affirms the truthfulness and accuracy of any claim, statement, submission, certification, assurance or representation it has made, it makes, it may make, or causes to be made, pertaining to the underlying Contract or the FTA or FHWA 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 presents, submits, makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, certification, assurance or representation, the federal government may impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the federal government deems appropriate.

    The Contractor also acknowledges that if it presents, submits, makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, certification, assurance or representation in connection with this Contract, under the authority of 49 U.S.C. § 5307 and 49 U.S.C. §5323, the federal government may impose the penalties on the Contractor authorized by 18 U.S.C. § 1001 and 49 U.S.C. § 5307(n)(1), to the extent the federal government deems appropriate.

    It is further understood and agreed that the willful falsification, distortion or misrepresentation with respect to any facts related to the project(s) described in this Contract is a violation of the federal law. Accordingly, United States Code, Title 18, Section 1020, is hereby incorporated by reference and made a part of this Contract.

17. **Environmental Protection.** The Contractor shall comply with all applicable requirements of Section 29 of the FTA Master Agreement (2012), including the National Environmental Policy Act of 1969, as amended, 42 U.S.C. §§ 4321 et seq. (as limited by 42 USC §5159), Executive Order No. 11514 Executive Order No. 11514, as amended, "Protection and Enhancement of Environmental Quality," 42 U.S.C. § 4321 note; FTA statutory requirements on environmental matters at 49 U.S.C. § 5324(b); Council on Environmental Quality regulations on compliance with the National Environmental Policy Act of 1969, as amended, 40 C.F.R. Parts 1500 *et seq.*; and joint FHWA/FTA regulations, "Environmental Impact and Related Procedures," 23 C.F.R. Part 771 and 49 C.F.R. Part 622. Contractor shall also comply with federal transit laws, including 49 U.S.C. §5323(c)(2) as amended by MAP-21. In addition, the Contractor agrees to comply with any implementing requirements FTA or FHWA may issue.

18. **Clean Air.** The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended 42 U.S.C. §§ 7401 et

seq. The Contractor agrees to report the use of facilities on or likely to be placed on the U.S. EPA "List of Violating Facilities," refrain from using any violating facilities, comply with inspection requirements and report each violation to the Authority. The Contractor understands and agrees that the Authority will, in turn, report each violation as required to assure notification to the FTA or FHWA and the appropriate EPA Regional Office.

19. **Clean Water.** 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 the use of facilities on or likely to be placed on the U.S. EPA "List of Violating Facilities," refrain from using any violating facilities, comply with inspection requirements and report each violation to the Authority. The Contractor understands and agrees that the Authority will, in turn, report each violation as required to assure notification to the FTA or FHWA and the appropriate EPA Regional Office.

20. **Recycled Products.** When relevant to the Work Order, the Contractor shall assist the Authority with compliance with the Resource Conservation and Recovery Act of 1976, 42 U.S.C. Section 6962, which requires the Authority to provide a competitive preference to products and services that conserve natural resources, protect the environment, and are energy efficient. EPA guidelines, “Comprehensive Procurement Guideline for Products Containing Recovered Materials,” 40 CFR Part 247, direct the Authority to specify a competitive preference for products containing recycled materials identified in those EPA guidelines for contracts valued at $10,000 or more. For information about EPA’s recovered materials advisory notices, see EPA’s Web site: http://www.epa.gov/cpg/backgrnd.htm.

21. **Buy America.** The Contractor shall comply with 49 U.S.C. 5323(j) and 49 CFR Part 661, where applicable, which provide that Federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by the FTA, or the product is subject to a general waiver. Work orders and small purchases of less than one hundred thousand dollars ($100,000.00) made with capital, operating, or planning funds are waived from Buy America requirements.

The JTA requires each Contractor to submit a completed Buy America certificate with its Bid or Proposal in accordance with §§ 661.6 or 661.12, as appropriate. The JTA presumes that any Contractor who submitted such certificate is complying with the Buy America provisions. A false certification is a criminal act in violation of 18 U.S.C. § 1001. A Contractor who certifies that it will comply with the applicable Buy America requirement is bound by its original certification (in the case of a sealed bidding procurement) or the certification it submitted with its final offer (in the case of a negotiated procurement) and is not permitted to change its certification after bid opening or submission of its final offer. Where a Contractor certifies that it will comply with Buy America requirements, the Contractor is not eligible for a waiver of those requirements. The JTA reserves the right to request additional information,

and/or to conduct both pre-award and post-award audits to ensure that the Contractor is in compliance with Buy America requirements.

22. **Seismic Safety.** 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.

23. **Conformance with Intelligent Transportation Systems (ITS) National Architecture.** Intelligent Transportation System (ITS) property and services, recommended and included in designs provided by the Contractor under this Contract, must comply with the National ITS Architecture and Standards to the extent required by 23 U.S.C.§517(d) as amended by MAP-21, Section 5307(c) of SAFETEA-LU, FTA Notice, "FTA National ITS Architecture Consistency Policy for Transit Projects," 66 FR 1455 et seq., January 8, 2001, 23 CFR Parts 655 and 940, and later published FTA and FHWA regulations, rules, policies, implementing guidance and directives. Additionally, such ITS equipment and designs shall comply with the latest ITS architecture and standards adopted by the FHWA, FDOT, CoJ and First Coast ITS Coalition.

24. **Metric Measurements.** To the extent practicable and feasible, the Contractor shall express all dimensions in metric measurements, in compliance with the Metric Conversion Act, as amended by the Omnibus Trade and Competitiveness Act, 15 U.S.C. Sections 205a *et seq*.; Executive Order No. 12770, "Metric Usage in Federal Government Programs," July 25, 1991, 15 U.S.C. Section 205a note; and applicable federal regulations.

25. **Electronic Reports and Information.** Reports and other information prepared in electronic format developed under this Contract, whether as a contract end item or in compliance with contract administration provisions, must comply with the accessibility standards of Section 508 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. Section 794d, and ATBCB regulations, "Electronic and Information Technology Accessibility Standards," 36 CFR Part 1194.

26. **Access to Records and Sites of Project Performance and Record Retention.**

A. The Contractor shall maintain all Contract records (including paper and electronic records) in a manner so that they are readily accessible for review, audit and inspection and shall provide to the Authority, the USDOT, the FHWA Administrator, the FTA Administrator, the Comptroller General of the United States, the FDOT, or any of their authorized representatives or employees, access to any data, accounts, payrolls, project work, project materials, documents, reports, records, statistics,

subagreements, leases, third party contracts, arrangements, books, papers and records of the Contractor (and all supporting material related thereto) which are related to this Contract for the purposes of making audits, inspections, examinations, excerpts and transcriptions. Contractor also agrees, pursuant to 49 C. F. R. 633.15 to provide the agencies, or their authorized representatives including any PMO Contractor, access to Contractor's records and work sites pertaining to a major capital project, defined at 49 U.S.C. 5302(a)1, which is receiving federal financial assistance through the programs described at 49 U.S.C. 5307, 5309 or 5311. In accordance with 49 CFR 18.40, federal agencies may make site visits as warranted by program needs.

B. The Contractor agrees to permit any of the foregoing parties to reproduce any record by any means whatsoever.

C. The Contractor agrees to maintain all books, records, accounts and reports required under this Contract for a period of not less than **five (5) years** after the date of termination, expiration or final payment of this Contract, except in the event of litigation or settlement of claims arising from the performance of this Contract or other pending matters, in which case Contractor agrees to maintain same until the Authority, the FTA Administrator, the Comptroller General, the FDOT, and any of their duly authorized representatives, have disposed of all such litigation, appeals, claims, exceptions and other matters related thereto. Reference 49 CFR 18.36(i)(11).

D. Any of the agencies listed above may, at any time during normal business hours, with or without prior notice and by or through its employees or its Contractors, inspect, copy and audit all of the books and records of the Contractor (and its subcontractors, if any) including all work papers and correspondence and financial records related to such services.

27. **Access Requirements for Persons With Disabilities (ADA).** The Contractor agrees to comply with the requirements of 49 U.S.C. § 5301(d) which expresses the federal policy that the elderly and persons with disabilities have the same right as other persons to use mass transportation service and facilities, and that special efforts shall be made in planning and designing those services and facilities to implement those policies. The Contractor also agrees to comply with all applicable requirements of sections 503 and 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794, which prohibits discrimination on the basis of handicaps, and with the Americans with Disabilities Act of 1990 (ADA), as amended, 42 U.S.C. §§ 12101 et seq., which requires the provision of accessible facilities and services, and with the following federal regulations, including any amendments thereto: (1) U.S. DOT regulations, "Transportation Services for Individuals with Disabilities (ADA)," 49 C.F.R. Part 37; (2) U.S. DOT regulations, "Nondiscrimination on the Basis of Handicap in Programs and Activities Receiving or Benefiting from Federal Financial Assistance," 49 C.F.R. Part 27; (3) Joint U.S. Architectural and Transportation Barriers Compliance Board/U.S. DOT regulations, "Americans With Disabilities (ADA) Accessibility Specifications for Transportation Vehicles," 36 C.F.R. Part 1192 and 49 C.F.R. Part 38; (4) U.S. DOJ regulations, "Nondiscrimination on the Basis of Disability in State and Local Government Services," 28 C.F.R. Part 35; (5) U.S. DOJ regulations, "Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities," 28 C.F.R. Part 36; (6) U.S. GSA regulations, "Accommodations for the Physically Handicapped," 41 C.F.R. Subpart 101-19; (7) 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; (8) U.S. Federal Communications Commission regulations, "Telecommunications Relay Services and Related Customer Premises Equipment for the Hearing and Speech Disabled," 47 C.F.R. Part 64, Subpart F; and (9) FTA regulations, "Transportation for Elderly and Handicapped Persons," 49 C.F.R. Part 609; and (10) Any implementing requirements FTA may issue.

This section applies to subcontractors at all levels and must be added to all subcontracts, regardless of tier.

28. **Energy Conservation.** The Contractor shall comply with the Florida Energy Efficiency Code for Building Construction and all mandatory standards and policies relating to energy efficiency, when applicable.

29. **Rights in Data.**

(1) The term "subject data" used in this clause means recorded information, whether or not copyrighted, that is delivered or specified to be delivered under the Contract. The term includes graphic or pictorial delineation in media such as drawings or photographs; text in specifications or related performance or design-type documents; machine forms such as punched cards, magnetic tape, or computer memory printouts; and information retained in computer memory. Examples include, but are not limited to: computer software, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identifications, and related information. The term "subject data" does not include financial reports, cost analyses, and similar information incidental to contract administration.

(2) The following restrictions apply to all subject data first produced in the performance of this Contract:

(a) Except for its own internal use, the Authority or Contractor may not publish or reproduce subject data in whole or in part, or in any manner or form, nor may the Authority or Contractor authorize others to do so, without the written consent of the federal government, until such time as the federal government may have either released or approved the release of such data to the public; this restriction on publication, however, does not apply to any contract with an academic institution.

(b) In accordance with 49 C.F.R. § 18.34 and 49 C.F.R. § 19.36, the federal government reserves a royalty-free, non-exclusive and irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use, for "federal government purposes," any subject data or copyright described in subsections (2)(b)1 and (2)(b)2 of this clause below. As used in the previous sentence, "for federal government purposes," means use only for the direct purposes of the federal government. Without the copyright owner's consent, the federal government may not extend its federal license to any other party.

1. Any subject data developed under that contract, whether or not a copyright has been obtained; and

2. Any rights of copyright purchased by the Authority or Contractor using federal assistance in whole or in part provided by FTA.

(c) When FTA awards federal assistance for experimental, developmental, or research work, it is FTA's general intention to increase transportation knowledge available to the public, rather than to restrict the benefits resulting from the work to participants in that work. Therefore, unless FTA determines otherwise, the Authority and the Contractor performing experimental, developmental, or research work required by this Contract agrees to permit FTA to make available to the public, either the license in the copyright to any subject data developed in the course of this Contract, or a copy of the subject data first produced under the Contract for which a copyright has not been obtained. If the experimental, developmental, or research work, which is the subject of the underlying Contract, is not completed for any reason whatsoever, all data developed under that Contract shall become subject data as defined in subsection (a) of this clause and shall be delivered as the federal government may direct. This subsection (c), however, does not apply to adaptations of automatic data processing equipment or programs for the Authority or Contractor's use whose costs are financed in whole or in part with federal assistance provided by FTA for transportation capital projects.

(d) Unless prohibited by state law, upon request by the federal government, the Authority and the Contractor agree to indemnify, save, and hold harmless the federal government, its officers, agents, and employees acting within the scope of their official duties against any liability, including costs and expenses, resulting from any willful or intentional violation by the Authority or Contractor of proprietary rights, copyrights, or right of privacy, arising out of the publication, translation, reproduction, delivery, use, or disposition of any data furnished under that contract. Neither the Authority nor the Contractor shall be required to indemnify the federal government for any such liability arising out of the wrongful act of any employee, official, or agents of the federal government.

(e) Nothing contained in this clause on rights in data shall imply a license to the federal government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the federal government under any patent.

(f) Data developed by the Authority or Contractor and financed entirely without using federal assistance provided by the federal government that has been incorporated into work required by the Contract is exempt from the requirements of subsections (b), (c), and (d) of this clause, provided that the Authority or Contractor identifies that data in writing at the time of delivery of the Contract work.

(g) Unless the federal government determines otherwise, the Contractor agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with federal assistance.

30. **Contract Work Hours and Safety Standards**.

a. 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.

b. 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 therefor 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.

c. Withholding for unpaid wages and liquidated damages - The Authority 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.

d. 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.