Council Meeting of
August 28, 2012

Honorable Mayor and Members
of the City Council
City Hall
Torrance, California

Members of the City Council:

SUBJECT: Transit – Approve contract and purchase order for Compressed Natural Gas buses. Expenditure: Not to exceed $4,997,741.

RECOMMENDATION

Recommendation of the Transit Director that City Council approve a Contract and Purchase Order with New Flyer of America to purchase nine (9) Compressed Natural Gas Buses at a cost not to exceed $4,997,741.

FUNDING

Funding will come from a Federal Transit Administration Grant Section 5307 Capital Formula Assistance, State of California Proposition 1B Public Transportation Modernization, Improvement, and Service Enhancement Account (PTMISEA) and local Measure R capital funds. The local matching funds will come from the Federal Highway Administration (FHWA) Toll Credits program. No City General Funds will be used for this purchase.

BACKGROUND/ANALYSIS:

The Transit Department is currently undertaking a Fleet Modernization Project in which we plan to replace all of our old diesel buses with alternative fuel buses by Fiscal Year (FY) 2015. Most of the diesel buses average 18 years in age and have exceeded their useful operating life. Transit has already purchased 30 alternative fuel buses, and is ready to proceed with a new order for nine (9) additional buses at this time.

With the help of San Diego Metropolitan Transit System (MTS), Torrance Transit was able to acquire the options/assignments for nine (9) CNG buses, per MTS' existing agreement with New Flyer.

The CNG buses being purchased are priced at a cost not to exceed $504,923.71 per vehicle or $4,544,313.42 (which includes ADA equipment and delivery). Sales Tax and Department of Motor Vehicle (DMV) Registration fees are not included, and will be paid for separately by Transit. The total project cost for these new buses (once sales tax, DMV registration, decal and farebox installation are complete) will be $4,997,741. These post delivery fees will be paid for separately through Prop 1B PTIMSEA funds.

Per the MTS RFP, buses will be manufactured out of plants in Winnepeg, Canada and Crookston, Minnesota. Shell fabrication (approximately 40% of the bus build) will take place in Winnepeg. The buses will then be shipped to Crookston for additional construction and completion (approximately 60% of the bus build). The majority of parts and components needed to build the buses will come from American companies, per Federal "Buy America" requirements.

Funding to procure the vehicles is as follows:

GRANT	SOURCE	AMOUNT
CA-90-Y949	Federal	$2,338,900.00
Prop 1B PTMISEA funds	State	$2,362,371.00
Measure R Capital	Local	$ 296,470.00
TOTAL FUNDING		$4,997,741.00

All the vehicles purchased under this agreement meet or exceed all State and local requirements regarding vehicle emissions for the foreseeable future. The project is included in the Capital FEAP #805 (Facilities, Equipment and Automation Project) list. CNG is a proven technology and has been powering transit fleets worldwide for the last 20 years.

SECTION 22.3.17 of the City's Municipal Code; EXCEPTION; SOLE-SOURCE PURCHASES states:

> "A) The provisions of this Article will not apply to purchases of sole-source services or property, which purchases will be made in accordance with such procedures and regulations as will be established by the City Manager.
> B) For purposes of this Section, "sole-source purchases" means those purchases where it would be undesirable or impossible for the City to advertise for bids for particular work or for patented items, or experimental or unique services or products, or where competitive purchases would be unavailable or would not prove advantageous for the City. No sole-source purchase may be made where to do so would show favoritism, improvidence, extravagance, fraud or corruption, or result in the waste of public funds, but may be used only to obtain the best economic result for the public."

New Flyer is a recognized manufacturer of Transit vehicles in the United States. Through partnering with MTS, Torrance was able to save approximately $100,000 in the development of a RFP for Transit buses. Staff recommends Sole-Source Purchase (New Flyer) for the following reasons:

- Standardization - Of Transit's standing fleet of 63 buses, 30 are alternative fuel vehicles purchased from New Flyer.
- Maintenance and Support - A uniform and standardized bus fleet allows Transit to reduce costs in parts, training and warehouse storage space. A mixed fleet results

in higher maintenance expenditures by increasing the on-hand stock requirements as well as placing more demands on warehouse management of resources.

- Operational Safety – Transit buses are relieved or switched out frequently during service. Different controls and operating systems between vehicle make and model could potentially create safety issues.

If approved, the nine (9) new buses will be built and delivered to the City by October of 2012.

Respectfully submitted,

Kim Turner
Transit Director

Concur:

LeRoy J. Jackson
City Manager

ATTACHMENT:

A. New Flyer Bus Contract (Limited Distribution)

Attachment A

PURCHASE AGREEMENT BY AND BETWEEN THE City OF TORRANCEAND NEW FLYER OF AMERICA INC

THIS PURCHASE AGREEMENT ("Agreement") is made and entered into this 28th day of August, 2012, by and between the City of Torrance, a California municipal corporation (hereinafter referred to as the "City"), and New Flyer of America Inc., a North Dakota corporation (hereinafter referred to as "New Flyer"). City and New Flyer are sometimes collectively referred to herein as the "Parties."

RECITALS

A. City is a municipal corporation duly organized and validly existing under the laws of the State of California with the power to carry on its business as it is now being conducted under the statutes of the State of California.

B. New Flyer is incorporated in the State of North Dakota and legally authorized to do business in the State of California. New Flyer represents it has the background, knowledge, experience and expertise necessary to provide the City with the Compressed Natural Gas Powered Low Floor Transit Buses" set forth in this Agreement.

C. City seeks to purchase from New Flyer, and New Flyer desires to sell to the City, nine (9) forty-foot (40') Compressed Natural Gas Powered Low Floor Transit Buses (collectively referred to herein as either "Buses" or "Vehicles") for the City of Torrance as further described in the San Diego Metropolitan Transit System (MTS) Request for Proposals ("RFP") MTS Doc. No. G1101.0-07 entitled "Request for Proposal for 35' and 40' Low Floor Transit Buses".

D. City's Transit Department (or the Torrance Transit System) operates a transit fleet of 63 buses. The Torrance Transit Fleet Modernization Project calls for the replacement of 51 Torrance buses which will have provided (on average) 18 years of service at the time of replacement. These vehicles will have exceeded the federal requirement for life expectancy and are in need of replacement.

E. The South Coast Air Quality Management District ("SCAQMD") and the Air Resource Board ("ARB") currently prohibit the City from purchasing diesel vehicles because they do not meet SCAQMD or ARB standards for pollutants. Alternative fuel vehicles include hybrid gasoline electric, compressed natural gas (CNG) and liquid natural gas (LNG). The Transportation Department has elected to purchase compressed natural gas buses (CNGB) because this type of power system will provide cost savings in relation to fuel consumption. The CNGB has lower emissions than traditional diesel powered buses in use today and noise levels from the power system are reduced significantly.

F. On May 21, 2007, the San Diego Metropolitan Transit System (MTS) released an RFP (MTS DOC. NO G1101.0-07) for the purchase of 35' and 40' Low Floor Transit Buses. New Flyer of America was the winning proposer of this RFP. (ATTACHEMENT A)

G. A negotiated procurement for the purchase of low floor CNG buses in response to the RFP was successfully accomplished between MTS and New Flyer.

H. On July 17, 2012, the Torrance Transit System requested and received nine (9) options/assignments to purchase buses from MTS, per MTS DOC. NO G1101.0-07. (EXHIBIT A)

H. All of the rolling stock federal requirements have been met by New Flyer, including certifications of compliance with Buy America, Federal Motor Vehicle Safety Standards, Bus Testing, Pre-Award and Post-Delivery Audits. The Buy America requirements specify that the cost of components and subcomponents produced in the United States must be more than 60 percent of the cost of all components and final assembly must take place in the United States. The CNG buses' frame and flooring will be made in Canada and final assembly will take place in Crookston, Minnesota.

O. The submitted proposal price was at a cost not to exceed $502,360.95 per vehicle for 40-foot buses (EXHIBIT B). City requested several changes beyond the most recent vehicle specifications, for a total unit cost not to exceed $504,923.71 per vehicle, or $4,544,313.42 for the entire order of nine (9) buses. Please note this is only the price per vehicle and does not include other vehicle options and equipment that the City may later purchase (e.g. – such as diagnostic computers, decals, spare parts, etc.) – which will be billed and paid for separately. This also does not include sales tax and registration fees that the City will also pay separately.

NOW, THEREFORE, in consideration of the mutual covenants and conditions contained herein, City and New Flyer agree as follows:

1. INCORPORATION OF RECITALS AND EXHIBITS.

The above "Recitals" are true and correct and constitute a material part hereof, and shall hereby be incorporated by reference as though fully set forth herein. The "Exhibits" of this Agreement constitute a material part hereof, and are hereby incorporated by reference as though fully set forth herein.

2. PURCHASE OF NINE 40-FOOT COMPRESSED NATURAL GAS LOW FLOOR TRANSIT BUSES ASSIGNED FROM SAN DIEGO METROPOLITAN TRANSIT SYTEM.

2.1. Bus Specifications

Specifications and other project documents for the purchase of the subject Buses were developed by City in conjunction with other municipal bus operators, including but not limited to MTS as specified in RFP MTS DOC. NO G1101.0-07, for the purchase of 35' and 40' Low Floor Transit Buses, released on May 21, 2007.

The following documents are incorporated into this Agreement by reference: RFP MTS DOC. NO G1101.0-07, and all referenced Specifications ("Specifications"), details, standard drawings, and appendices; adjustments to the Specifications specific to the 40- and 35-foot buses the City may purchase; all required bonds, insurance certificates, permits, notices, schedules, forms, certifications, and affidavits; and any and all addenda or supplemental agreements clarifying the purchase contemplated herein as may be required to ensure its receipt in acceptable manner (collectively referred to as the "Contract Documents.").

For the purpose of this Agreement, should there be any inconsistency or conflict regarding contract provisions that would apply to this Agreement, the following order of precedence shall apply (EXHIBIT C):

1. Purchase Agreement;
2. Revised Best and Final Offer
3. RFP MTS DOC. NO G1101.0-07 New Flyer's Proposal
4. Addenda Issued by City of Torrance
5. RFP MTS DOC. NO G1101.0-07 "Procurement of 35' and 40' Low Floor Transit Buses, Technical Specifications"
6. RFP MTS DOC. NO G1101.0-07 "Procurement of 30 and 40' Low Floor Transit Buses (Request for Proposals, Offer & Award, General Contractual Provisions, Quality Assurance Provisions and Warranty Provisions)

As set forth in Request for RFP MTS DOC. NO G1101.0-07 included in the Revised "Best and Final Offer", the CNG Powered Low Floor Transit Buses shall contain, in pertinent part, the following:

2.2. All New Materials and Parts. New Flyer shall utilize and incorporate all new material and parts into each of the equipment purchased pursuant to this Agreement.

2.3. Workmanship. New Flyer covenants with the City to furnish its best skill, judgment and efforts and to cooperate with the City and any other consultants engaged by the City to perform its duties and obligations under this Agreement. Workmanship throughout the performance of this Agreement shall conform to the highest standard of commercially reasonable practice of work.

New Flyer acknowledges the provisions of the California State Labor Code requiring every employer to be insured against liability for worker's compensation, or to undertake self-insurance in accordance with the provisions of that Code, and certifies compliance with such provisions. All services required under this Agreement will be performed by New Flyer, or under its supervision, and all personnel shall possess the

qualifications, permits, and licenses required by the State and local law to perform such services. In addition, New Flyer agrees to comply with all applicable laws and regulations (whether federal, state or local) relating to performance of services under this Agreement and completion of the Project.

New Flyer shall be solely responsible for the satisfactory work performance of all personnel engaged in performing service required by this Agreement, and compliance with all reasonable performance standards established by City. New Flyer shall be responsible for payment of all employees' and subcontractor's wages and benefits, and shall comply with all requirements pertaining to employer's liability, workers' compensation, unemployment insurance, and Social Security. New Flyer shall indemnify and hold harmless the City from any liability, damages, claims, costs and expenses of any nature arising from alleged violations of personnel practices.

3. COMPENSATION.

3.1 Pricing As full compensation for all of the equipment, goods and services set forth in this Agreement, the City shall pay and New Flyer agrees to accept, the prices set forth in the Revised "Best and Final Offer" attached hereto as Exhibit C. The total amount of the compensation shall not exceed the sum of $504,923.71 per vehicle or $4,544,313.42 for the entire order of nine (9) buses. Please note this is only the price per vehicle and does not include other vehicle options and equipment that the City may later purchase (e.g. – such as diagnostic computers, decals, spare parts, etc.) – which will be billed and paid for separately. This also does not include sales tax and registration fees that the City will also pay separately. City shall pay New Flyer within thirty (30) days of receipt by City of invoice for the Buses and full acceptance of the Buses by the City.

3.2 Purchase Price as Full Compensation

City shall pay and New Flyer shall accept the amounts set forth in the price schedule as full compensation for all costs and expenses of completing the Work in accordance with this Agreement, including but not limited to all labor and material required, overhead, expenses, storage and shipping, risks and obligations, taxes (as applicable), fees and profit, and any unforeseen costs. Said compensation shall also cover all expenses, losses, damages, and consequences arising out of the nature of the work during its progress and completion of the work, and also including those arising from actions of the elements, unforeseen difficulties or obstructions encountered in the prosecution of the work, suspension or discontinuance of the work, and all other unknowns or risks of any description connected with the work.

3.3 Time of Payment

City shall make payments for Buses at the unit prices itemized in the Revised Best and Final Offer, attached hereto as Exhibit C within thirty (30) calendar days after

the delivery and acceptance of each Bus and receipt of a proper invoice. In the event that a Bus does not meet all requirements for acceptance, the City may, at its exclusive option, "conditionally accept" the Bus and place it into revenue service pending receipt of New Flyer of furnished materials and/or labor necessary to effectuate corrective action for acceptance of the Bus. For any conditionally accepted Bus, the payment shall be reduced by an amount to be withheld equal to twice the estimated cost for parts and labor for the corrective action, and paid upon corrective action by New Flyer.

City shall make payments for spare parts and/or equipment at the unit prices itemized in the price schedule within 30 (thirty)-calendar days after the delivery and acceptance of said spare parts and/or equipment and receipt of a proper invoice.

City shall make a final payment within 30 (thirty)-calendar days of receipt of a final proper invoice and the following:

1. Delivery and acceptance of all deliverables, including manuals and other documentation required by this Agreement, excluding training.
2. Rectification of any deficiencies found during the acceptance of Buses.
3. New Flyer provision of any certifications as required by law and/or regulations.
4. Completion of post delivery audits required under the Agreement.

4. DELIVERY AND ACCEPTANCE SCHEDULE.

New Flyer shall deliver and ensure acceptance of all of the Buses in a timely manner, in accordance with the following schedule:

ITEM	*COMPLETION DATE*
Delivery of nine (9) buses comprised of 40-Foot Low Floor CNG Powered Buses	TBD
City Acceptance	30 days after Delivery of each bus to City

All of the goods, equipment and services shall be furnished and delivered to the Torrance Transit Yard (at 20500 Madrona Avenue, Torrance, CA 90503), in first class condition, complete and ready for service for the Torrance Transportation Department. New Flyer shall assume all costs and responsibility for delivery.

An extension of the period for completion shall be granted by The City of Torrance for reasons outside the control of New Flyer. New Flyer shall request an extension by notifying City in writing at least fifteen (15) days prior to the expected Completion Date.

No extension of time requested or granted hereunder shall entitle New Flyer to additional compensation unless, as a consequence of such extension, additional work must be performed and such additional work is approved in writing by City. In such event, City shall in good faith consider any request for additional compensation submitted by New Flyer.

4.1 Liquidated Damages

New Flyer's Obligations: New Flyer recognizes and acknowledges that failure on the part of New Flyer to complete the work in a timely manner can cause irreparable harm to City's operation of the Torrance Transit. It is mutually understood and agreed by and between the Parties to the Agreement that time is of the essence with respect to the completion of the Work and that in case of any failure on the part of the New Flyer to complete the Work within the time specified in "Delivery Schedule" (Section 4), except for any excusable delays as provided therein or any extension thereof, City will be damaged thereby. Therefore, a fixed charge of $300.00 per calendar day per bus shall be deducted from the invoice as liquidated damages for each bus not delivered in service ready condition as inspected by City at the time of acceptance. The City will be relying upon New Flyer's in-house ISO 9001 process program to ensure that the buses upon delivery will be in compliance with all specifications and meet the California Code of Regulations (CCR), Title 13, et al.

New Flyer hereby agrees to pay the aforementioned amounts as fixed, agreed and liquidated damages, and not by way of penalty, to City and further authorizes City to deduct the amount of the damages from money due New Flyer under this Agreement, computed as aforesaid. If the monies due New Flyer are insufficient or no monies are due New Flyer, New Flyer shall pay City the difference or the entire amount, whichever may be the case, within 30 (thirty) calendar days after receipt of a written demand by the City.

City's Obligations: The City's contractual obligations to New Flyer shall be limited to the payment of the Compensation provided for in this Agreement. In no event shall the City be liable for any special, consequential, indirect or incidental damages arising out of or in connection with this Agreement unless otherwise specified herein.

5. <u>TRAINING</u>.

New Flyer shall provide training to the City's transportation personnel to ensure proper operation and maintenance of Buses. New Flyer shall also provide on-site technicians to commission equipment for initial operations. Training dates to be determined by City Montebello.

6. WARRANTY.

As set forth in Contract Deliverables, Warranties Included in Bus Price of the Best and Final Offer specified in Exhibit C, New Flyer hereby warrants and guarantees to the City that all of the goods and equipment of the Buses shall be free from defects in material and workmanship for the periods specified in Exhibit C with respect to the entire Bus, subsystems and/or components.

7. NONDISCRIMINATION.

In the performance of this Agreement, New Flyer represents and agrees that New Flyer, it affiliates, subsidiaries, or holding companies do not and will not discriminate against any subcontractor, consultant, employee, or applicant for employment because of race, creed, color, religion, national origin, ancestry, sex, marital status, age, sexual orientation, handicap, or disability, in accordance with the requirements of state and federal. Such discrimination shall include, but not be limited to, the following: employment, upgrading, demotion, transfers, recruitment, recruitment advertising, layoff, termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

8. SUBCONTRACTOR.

New Flyer shall not subcontract any portion of the services to be performed under this Agreement without the prior written consent of the City. Subcontracts, if any, shall contain a provision making them subject to all provisions in this Agreement. No person or firm whose name is included in the U.S. Comptroller General's Consolidated List of Persons or Firms Currently Debarred for Violation of Various Public Contracts Incorporating Labor Standards Provisions shall be eligible to subcontract on any portion of this Agreement.

9. PROHIBITION AGAINST TRANSFERS.

New Flyer shall not assign, sublease, hypothecate, or transfer this Agreement or any interest or obligations herein directly or indirectly, by operation of law or otherwise during the term of this Agreement or during the operation of any of the warranties without the prior written consent of the City. As a condition to any assignment or transfer, any prospective assignee or transferee shall also assume the obligations to the City pursuant to this Agreement, including the warranties set forth in Section 6. Any attempt to assign, sublease, hypothecate, or transfer this Agreement without prior written consent of City shall be null and void, and any assignee, sublessee, hypothecatee or transferee shall acquire no right or interest by reason of such attempted assignment, hypothecation or transfer.

The sale, assignment, transfer or other disposition of any of the issued and outstanding capital stock of New Flyer, or of the interest of any general partner or joint venturer or syndicate member or covenant, if New Flyer is a partnership or joint venture

or syndicate or cotenancy, which shall result in changing the control of New Flyer, shall be construed as an assignment of this Agreement. For purposes of this Agreement, "control" means the ownership fifty percent (50%) or more of the voting power of the corporation.

10. NOTICES.

All notices, demands, requests or approvals to be given under this Agreement shall be given in writing and conclusively shall be deemed served when delivered personally or on the second business day after the deposit thereof in the United States mail, postage prepaid, registered or certified, addressed as hereinafter provided.

All notices, demands, requests, or approvals hereunder shall be given to the following addresses or such other addresses as the parties may designate by written notice:

To City: Sue Herbers, City Clerk
City of Torrance
3031 Torrance Boulevard
Torrance, CA 90503
Facsimile: (310) 618-2931

with a copy to:
Kim Turner, Director
Torrance Transit System
20500 Madrona Avenue
Torrance, CA 90503
Facsimile: (310) 618-6229

To New Flyer: New Flyer of America Inc.
711 Kernaghan Avenue
Winnipeg, Manitoba, Canada R2C3T4
Attention: Paul Smith, Executive Vice President, Sales and Marketing

11. INDEMNIFICATION AND INSURANCE.

11.1. Indemnification for Acts or Omissions of New Flyer. New Flyer shall indemnify, and hold harmless City, its City Council, boards and commissions, officers, , agents and employees (collectively hereinafter the "'City") against any or all injuries, deaths, losses, damages, claims, suits, liabilities, judgments, reasonable attorneys' fees, costs and expenses, which may accrue against the City arising out of, or resulting from the negligent or willful acts or omissions of New Flyer or its officers, agents, employees, subcontractors or subconsultants, or related corporations attributable to its performance under this Agreement.

11.2. Indemnification for Claims Brought By Subconsultants of New Flyer. In addition, New Flyer shall defend, indemnify, and hold harmless the City, from and against any and all claims and losses whatsoever, including reasonable attorney's fees occurring or resulting to any and all persons, firms, or corporations employed or contracted by New Flyer or its subcontractor or subconsultants in connection with its performance under this Agreement.

11.3. Insurance. New Flyer shall maintain and provide the City with proof of insurance of the following types and specified amounts:

Type of Insurance	Limits of Liability (Minimum)
Workman's Compensation	Statutory
General Liability	$5,000,000 combined single limit
Automobile Liability	$5,000,000 combined single limit

The City of Torrance shall have no responsibility of liability for such insurance coverage.

New Flyer must provide a certificate of insurance compliance within 15 calendar days after Notification of Award. Proof of liability insurance shall be by means of an endorsement stating that the City of Torrance is an additional insured under the liability policy. The City shall be listed as an additional insured on all certificates of insurance and must be notified 30 days in advance of insurance cancellation or termination. Certification to be submitted to the City Clerk concurrently with the execution of this Agreement.

12. TERMINATION

12.1. Notice of Default and Termination. In the event that either party hereto fails or refuses to perform any of the provisions of this Agreement at the time and in the manner required, the non- defaulting party shall give the defaulting party written notice of the default, the nature of the default, and of the steps necessary to cure the default.

For any breach deemed by the non-defaulting party to constitute a material breach, the defaulting party is required to cure the breach within five (5) calendar days upon receipt of written notice. For any breach deemed by the non-defaulting party to constitute a nonmaterial breach, the defaulting party is obligated to cure such breach within fifteen (15) calendar days upon receipt of written notice. However, if the nature of the nonmaterial breach requires more than fifteen (15) days to cure, the defaulting party shall have thirty (30) days to diligently pursue and complete a cure.

In addition to any other available legal or equitable rights or remedies, if the default is not cured within the time periods described above, the non-defaulting party

may terminate this Agreement by giving written notice thereof to the defaulting party, setting forth the effective date thereof.

12.2. Termination Without Cause. The City shall have the option, at its sole discretion and without cause, of terminating this Agreement in whole, or in part, by giving ten (10) days written notice to New Flyer as provided herein.

12.3. Payment Upon Termination. Upon the termination of this Agreement as provided herein, the City shall provide to New Flyer the part of Compensation which would otherwise be payable to New Flyer for services completed as of the date of termination, less the amount previously paid or withheld with respect to the Compensation.

12.4. Expiration. After full acceptance of the Buses by City, this Agreement shall

12.5. expire upon full payment of the Compensation by the City to New Flyer. Warranty Agreement shall remain in effect despite expiration of this Agreement.

13. DISPUTE RESOLUTION.

Disputes regarding the interpretation or application of any provision of this Agreement shall, to the extent reasonably feasible, be resolved through good faith negotiations between the Parties. If any legal action or proceeding is necessary to enforce any provision of this Agreement or for breach of this Agreement, the prevailing party shall be entitled to receive from the opposing party all costs and expenses and such amount as may be adjudged to be reasonable attorney's fees. The prevailing party shall be entitled to recover an amount equal to the fair market value of legal services provided by attorneys employed by the prevailing party as well as any attorneys' fees paid to outside attorneys in connection with the action.

14. GOVERNING LAW AND VENUE.

This Agreement shall be construed in accordance with and governed by the laws of the State of California. Any lawsuit brought to enforce this Agreement shall be brought in the appropriate court in Los Angeles County, State of California.

15. COMPLIANCE.

It is agreed that the New Flyer shall comply and shall require its subcontractors to comply with all applicable state (California) and federal laws and regulations, including but not limited to those set forth in RFP No. 06-01.

16. DAYS.

Any term in this Agreement referencing days of performance shall be deemed to be calendar days and not business days unless otherwise specified.

17. BINDING ON ASSIGNS.

Each and all of the covenants and conditions of this Agreement shall be binding on and shall inure to the benefit of the successors and assigns of the respective parties.

18. INDEPENDENT CONTRACTOR

New Flyer is, and shall at all times remain as to City, a wholly independent contractor. New Flyer shall have no power to incur any debt, obligation, or liability on behalf of City. Neither City nor any of its agents shall have control over the conduct of New Flyer or any of New Flyer's employees, except as set forth in this Agreement. New Flyer shall not, at any time, or in any manner, represent that it or any of its officers, agents or employees are in any manner employees of City, provided, however, that nothing contained in this provision shall be construed or interpreted so as to deprive New Flyer of any and all defenses or immunities available to public officials acting in their official capacities. New Flyer agrees to pay all required taxes on amounts paid to New Flyer under this Agreement, and to indemnify and hold City harmless from any and all taxes, assessments, penalties, and interest asserted against City by reason of the independent contractor relationship created by this Agreement. New Flyer shall fully comply with the workers' compensation laws regarding New Flyer and New Flyer's employees. New Flyer further agrees to indemnify and hold City harmless from any failure of New Flyer to comply with applicable workers' compensation laws. City shall have the right to offset against the amount of any fees due to New Flyer under this Agreement any amount due to City from New Flyer as a result of New Flyer's failure to promptly pay to City any reimbursement or indemnification arising under this Section 7.

19. INVALIDITY.

Any provision of this Agreement that shall be deemed to be invalid or illegal shall not affect the remainder of this Agreement.

20. TIME IS OF THE ESSENCE.

Time is of the essence in this Agreement, and as such, the Parties agree to execute all documents and to proceed with due diligence to complete all covenants and conditions set forth herein in a timely manner.

21. COUNTERPARTS.

This Agreement may be signed in counterparts, each of which shall constitute an original and which collectively shall constitute one instrument.

22. CAPTIONS.

The captions of the various articles and paragraphs of this Agreement are for the convenience and ease of reference only, and do not define, limit, augment or describe the scope, content or intent of this Agreement or any part or parts of this Agreement.

23. CONSTRUCTION.

In all cases, the language in all parts of this Agreement shall be construed simply, according to its fair meaning and not strictly for or against any party, it being agreed by the Parties or their agents having all participated in the preparation of this Agreement.

24. COOPERATION/FURTHER ACTS.

The Parties shall fully cooperate with one another in attaining the purposes of this Agreement and, in connection therewith, shall take any such additional further acts and steps and sign such additional documents as may be necessary, appropriate and convenient as related to.

25. REFERENCES.

All references to New Flyer with respect to this Agreement shall include all personnel, employees, agent and subcontractors of New Flyer.

26. WAIVER.

A waiver by the City of any breach or default of any term, covenant, or condition contained herein shall not be deemed to be a waiver of any subsequent breach or default of the same or any other term, covenant, or condition contained herein, whether of the same or a different character. No waiver, benefit, privilege or service voluntarily given or performed by one party shall give the other any contractual right by custom, estoppel, or otherwise.

27. ENTIRE AGREEMENT.

This Agreement in addition to the attached Exhibits contains the entire agreement between City and New Flyer and supersedes any prior or written statements or agreement between the parties. This Agreement represents the full and complete understanding of every kind or nature whatsoever between the parties hereto and all preliminary negotiations and agreements of whatsoever kind or nature are merged herein. No verbal agreement or implied covenant shall be held to vary the provisions hereof. No attempted waiver of any of the provisions herein, nor any change, amendment or modification of this Agreement shall be effective unless in writing and signed by the party against whom the same is sought to be enforced.

The following documents are hereby incorporated into this Agreement by reference:

1. RFP MTS DOC. NO G1101.0-07 "Procurement of 35' and 40' Low Floor Transit Buses dated May 21, 2007, Addendums, Approved Equals and all referenced details such as master resolution lists, standard drawings, and appendices, together with the adjustments to the Specifications specific to the nine (9) vehicles to be purchased by the City.

2. Price Proposal referenced as Revised Best and Final Offer received from New Flyer specific to the nine (9) Vehicles to be purchased by City, which is attached hereto as EXHIBIT B.

28. EFFECTIVE DATE.

Unless otherwise specified herein, this Agreement shall become effective as of the date on which the last of the parties, whether New Flyer or City, executes said Agreement.

29. SIGNATURES.

New Flyer affirms that the signatures, titles, and seals set forth hereinafter in execution of this Agreement represents all individuals, firm members, partners, joint ventures, and /or corporate officers having principal interest herein.

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SIGNATURES BEGIN ON NEXT PAGE

IN WITNESS WHEREOF, the parties, through their respective authorized representatives, have executed this Agreement as of the date first written above.

CITY OF TORRANCE,
A Municipal Corporation

_____
Frank Scotto, Mayor

ATTEST:

_____
Sue Herbers, City Clerk

APPROVED AS TO FORM:

By: _____
John L. Fellows III, City Attorney

NEW FLYER OF AMERICA INC.

By: _____
Name:
Title:

By: _____
Name:
Title:

(Please note, two signatures required for corporations pursuant to California Corporations Code Section 313)

EXHIBIT A

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101-7490
(619) 231-1466 • FAX (619) 234-3407

July 17, 2012

Kim Turner
Director
Torrance Transit System
20500 Madrona Avenue
Torrance, CA 90503

RE: New Flyer – MTS Options

Dear Ms. Turner:

The San Diego Metropolitan Transit System releases options for nine (9) 40' low-floor buses under our contract with New Flyer Industries to the Torrance Transit System in Torrance, California.

Please contact Claire Spielberg our Chief Operations Officer of Bus Operations to coordinate further. Claire can be reached at (619) 238-0100 ext. 400.

Sincerely,

Paul C. Jablonski
Chief Executive Officer

cc: Claire Spielberg
Ernie DeGuzman
Julio Ortiz

Metropolitan Transit System (MTS) is a California public agency comprised of San Diego Transit Corp., San Diego Trolley, Inc., San Diego and Arizona Eastern Railway Company (nonprofit public benefit corporations), and San Diego Vintage Trolley, Inc., a 501(c)(3) nonprofit corporation, in cooperation with Chula Vista Transit. MTS is the taxicab administrator for seven cities.
MTS member agencies include the cities of Chula Vista, Coronado, El Cajon, Imperial Beach, La Mesa, Lemon Grove, National City, Poway, San Diego, Santee, and the County of San Diego.

EXHIBIT B

NEW FLYER

August 7, 2012

James Lee
Administrative Analyst, Transit Department
City of Torrance
20500 Madrona Ave
Torrance, CA 90503-2684

Subject: Quotation for Heavy Duty Low-Floor Xcelsior CNG Transit Buses

Dear James:

New Flyer is pleased to submit a price quotation for the production of nine (9) 40' Xcelsior CNG buses based on New Flyer's contract with San Diego (MTS).

The price for nine (9) 40' buses is **$ 504,923.71/bus** including ADA & Delivery to Torrance, CA.

ADA amount is - $ 28,203/bus
Delivery amount is - $ 4,037.60/bus

Key elements of our proposal include:

Standard Warranty –New Flyer exceeds industry standard warranties in many areas such as our 5 year / 300'000 mile warranty for axles (standard warranty is 2 years) and our 3 year / 150,000 mile warranty for our multiplexing system (standard competitor warranty is 1 year/50,000 miles). Please see below for optional extended warranty pricing:

1) Extended Engine Warranty price (3 additional years plus 2 year standard): $8,910
2) Extended Transmission Warranty price (3 additional years plus 2 year standard): $2,916. Please note that Allison will not warranty the transmission beyond the base bus of 2 years unless the property changes their transmission fluid to synthetic.
3) Extended Base Bus Warranty Price (1 additional year plus 1 year standard): $2,835

Please refer to Section 3 of our proposal for additional information regarding warranty.

Training – New Flyer Training is part of New Flyer Customer Services, which is a division of New Flyer Industries. As the leading manufacturer of heavy-duty transit buses in the United States and Canada, we have access to top design, engineering, propulsion technology and electrical systems professionals, which enables us to offer service and expertise to maximize the lifetime value of your fleet. Please refer to Section 4 of our proposal for additional information regarding training.

Publications: New Flyer Publications professionals combine extensive, hands-on technical experience with exceptional writing, illustrating and publishing skills to create the industry's benchmark in maintenance manuals. Supplying accurate information in a timely manner assists the customer in the performance of proper bus maintenance, which in turn, adds to the overall reliability and lifetime value of each New Flyer bus on the road. Please refer to Section 5 of our proposal for additional information regarding publications. These items have been included in the unit price of the bus.

Tooling and Diagnostics: Please refer to Section 6 of our proposal for our tooling & diagnostic proposal package. These items have not been included in the unit price of the bus.

Spare Parts: The unit price above does not include pricing for Spare Parts. All San Diego specific spare parts have been removed from the bus price.

Delivery Proposal: New Flyer is proposing an estimated Line Entry in mid August 2012.

Payment Terms: Adhering to the terms and conditions of New Flyer's contract with San Diego (MTS), our proposed payment terms are as follows:

- Payment terms are Net 30 days after delivery of each bus and receipt of proper invoice
- Acceptance is 30 days after delivery of each bus

The quotation is open for acceptance for sixty (60) days. Please indicate your acceptance by signing and returning a copy of the Price Change Summary to:

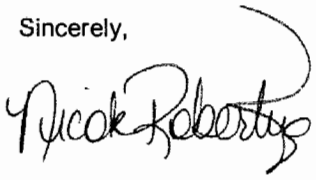
Jennifer McNeill, Director, Sales and Business Development

(204)-224-4214

jennifer_mcneill@newflyer,com

This is a very important project to us as it allows us the opportunity to continue to build on the strong relationship we have enjoyed with The City of Torrance. It also affords us the opportunity to deliver to you, once again, some of the most advanced vehicles available in North America. We thank you for your continued interest in New Flyer products and look forward to working with you in the near future.

Sincerely,



Nicole Robertus
Bid/Option Revenue Coordinator
Sales & Marketing
New Flyer of America Inc.
(204) 224-6240
Nicole_robertus@newflyer.com

Cc: Jennifer McNeill, Mark Fisher, Adrian Graca– New Flyer

NEW FLYER

Price Change Summary

Property:	Torrance, CA
Option Origin:	San Diego
Sales Release No.:	Option # 2012-015
Quantity:	9
Type:	XN40
Price Change No.:	1
Revision:	C
Date:	07-Aug-12

	Each	Total
Original Contract Price Base Coach	$ 502,360.95	$ 4,521,248.55
Base Bus Price Change Total	$ 2,562.76	$ 23,064.87
Contract Spares Base Bus Price Change Total	$ -	$ -
Revised Price Base Bus (including ADA & delivery)	$ 504,923.71	$ 4,544,313.42
ADA	$ 28,203.00	$ 253,827.00
Delivery	$ 5,116.00	$ 46,044.00
Original Contract Price for Contract Spares (If priced separately)		$ -
Contract Spares Changes (Priced Separately) Total	$ -	$ -
Revised Contract Spares Priced Separately		$ -
Original Contract Price for Miscellaneous (If priced separately)		$ -
Miscellaneous Price Change Total	$ -	$ -
Revised Miscellaneous Priced Separately		$ -
Original Total Contract Price		$ 4,521,248.55
Total Contract Price Changes		$ 23,064.87
Revised Total Contract Price		**$ 4,544,313.42**

Authorized Signatures:

New Flyer Authorization:

Signature: Nicole Robertus For: Paul Smith

Title: E.V.P. Sales & Marketing

Date: August 7, 2012

Property Authorization:

Signature: _____

Title: _____

Date: _____

NEW FLYER

Price Change Detail

Property:	Torrance, CA
Option Origin:	San Diego
Sales Release No.:	Option # 2012-015
Quantity:	9
Bus Type:	XN40

Price Per Coach						
Price Change Type	Reference No.	Option No.	Option Group	Description	Total	Total Contract
Base Bus Price Change	1	460	Windows	Change windows from Heat guard to Thermoguard (Ricon).	$ 1,824.91	16,424.17
	2	480	Mirrors	Change S/S mirror to remote. Note: C/side is already powered.	$ 68.71	618.35
	3	Manuals	Deliverable	Add NF Recommended Publications package	$ 669.15	6,022.35
Base Bus Price Change Total					$ 2,562.76	23,064.87
Grand Total					$ 2,562.76	23,064.87

EXHIBIT C

San Diego

BAFO – Price Proposal Submission

MTS Doc. No. #G1101.0-07

FROM: NEW FLYER OF AMERICA INC.

Pricing Sheet
BAFO

GE35LFR
(Re-Styled)

SECTION 7

7.0 COST/PRICING FORMS

PRICING SCHEDULE
COST AND PRICING FORM FOR YEAR ONE (1)
35' ADVANCED DESIGNED LOWFLOOR HEAVY DUTY TRANSIT BUSES

Availability of the first-article unit shall be within 34 weeks after receipt of Notice to Proceed. The remaining vehicles shall be delivered at the continuous and uninterrupted rate of 4 vehicles per week after acceptance of the first-article.

Item	Description	Unit	Quantity	Unit Price
001	LOWFLOOR 35' LOW FLOOR TRANSIT BUSES:	Each	1	$527,143.00

Propulsion Unit Proposed: GE35LFR {UltraCaps and Alternator}

Total price per unit per specification Section 5 of RFP less cost of any non-taxable handicap accessibility equipment and delivery charges not subject to sales tax. (These items shall be priced separately in item 002 and 003.)

Item	Description	Unit	Quantity	Unit Price
002	HANDICAP/ACCESSIBILITY EQUIPMENT:	Each	1	$12,683.00

Item	Description	Unit	Quantity	Unit Price
003	DELIVERY CHARGE PER BUS:	Each	1	$4,064.00

Any other item/s considered non-taxable, please identify individual equipment as an attachment to the Cost and Pricing Form.

Item	Description	Unit	Quantity	Unit Price
004	TRAINING :	Hours	728	$81,111.00

Item	Description	Unit	Quantity	Unit Price
005	TRAINING MATERIALS AND MANUALS:	Lot	1	$10,859.00

Item	Description	Unit	Quantity	Unit Price
006	WARRANTY COST PER BUS:	Each	1	$5,300.00

Item	Description	Unit	Quantity	Unit Price
007	SPARE ENGINE:	Each	1	$14,029.00

Item	Description	Unit	Quantity	Unit Price
008	TOOLS (DIAGNOSTIC & REPAIR):	Lot	1	$31,400.00

IMPORTANT: A separate Cost and Price Form and Offer Form must be submitted for each type of propulsion unit proposed for the 35' advanced designed low floor transit bus.

RETURN THIS FORM WITH YOUR PROPOSALS
RETAIN OTHER PAGES FOR YOUR RECORDS

Handicap Equipment

Description	Cost
Wheelchair Ramp	$3,347.00
Flip-up Seats, W/C Belts & Restraint System	$2,135.00
Destination Signs	$5,673.00
Voice Annunciation (Speak-Easy)	$934.00
Yellow Stanchions	$235.00
Kneeling System	$359.00
TOTAL COST	**$12,683.00**

OFFER FORM FOR 35' ADVANCE DESIGNED LOW FLOOR TRANSIT BUS

Propose shall complete the following form and include same in the price proposal.

OFFER

By execution below Proposer hereby offers to furnish equipment and services as specified in the Metropolitan Transit System Request for Proposals No. G1101.0-07 including the Special Provisions and Federal Requirements (Section 2), Quality Assurance Provisions (Section 3), Warranty Provisions (Section 4) and Technical Specifications for the 35' Advanced Designed Low Floor Transit Bus (Section 5), therein.

Propulsion Unit Proposed:

Gasoline Hybrid

Proposer: New Flyer of America Inc.
Name

Street Address: 711 Kenaston Avenue

City, State, Zip: Winnipeg, Manitoba, Canada R3C 3T4

Signature of Authorized Signer:

Title: Chief Financial Officer

Phone Number: (204) 224-1251 (Ext 354 or 348)

RETURN THIS FORM WITH YOUR PROPOSALS
RETAIN OTHER PAGES FOR YOUR RECORDS

Pricing Sheet
BAFO

C40LFR
(Re-Styled)

PRICING SCHEDULE

COST AND PRICING FORM FOR YEAR ONE (1)
LOWFLOOR 40' HEAVY DUTY CNG TRANSIT BUSES

Availability of the first-article unit shall be within 27 weeks after receipt of Notice to Proceed. The remaining vehicles shall be delivered at the continuous and uninterrupted rate of 7 vehicles per week after acceptance of the first-article.

Item	Description	Unit	Quantity	Unit Price
001	LOW FLOOR 40' HEAVY DUTY CNG TRANSIT BUSES: C40LFR	Each	1	$377,534.00

Total price per unit per MTS RFP No. GXXX.0-07, Section 6, less cost of any non-taxable handicap accessibility equipment and delivery charges not subject to sales tax. (These items shall be priced separately in item 002 and 003.)

Item	Description	Unit	Quantity	Unit Price
002	HANDICAP/ACCESSIBILITY EQUIPMENT:	Each	1	$12,683.00

Item	Description	Unit	Quantity	Unit Price
003	DELIVERY CHARGE PER BUS:	Each	1	$4,463.00

Any other item/s considered non-taxable, please identify individual equipment as an attachment to the Cost and Pricing Form.

Item	Description	Unit	Quantity	Unit Price
004	TRAINING:	Hours	728	$74,889.00

Item	Description	Unit	Quantity	Unit Price
005	TRAINING MATERIALS AND MANUALS:	Lot	1	$9,914.00

Item	Description	Unit	Quantity	Unit Price
006	WARRANTY COST PER BUS:	Each	1	$5,300.00

Item	Description	Unit	Quantity	Unit Price
007	TOOLS (DIAGNOSTIC & REPAIR):	Lot	1	$57,917.00

RETURN THIS FORM WITH YOUR PROPOSALS
RETAIN OTHER PAGES FOR YOUR RECORDS

Handicap Equipment

Description	Cost
Wheelchair Ramp	$3,347.00
Flip-up Seats, W/C Belts & Restraint System	$2,135.00
Destination Signs	$5,673.00
Voice Annunciation (Speak-Easy)	$934.00
Yellow Stanchions	$235.00
Kneeling System	$359.00
TOTAL COST	**$12,683.00**

Pricing Sheet
BAFO

GE40LFR
(Re-Styled)

PRICING SCHEDULE

COST AND PRICING FORM FOR YEAR ONE (1)
LOWFLOOR 40' HEAVY DUTY GASOLINE HYBRID TRANSIT BUSES

Availability of the first-article unit shall be within 27 weeks after receipt of Notice to Proceed. The remaining vehicles shall be delivered at the continuous and uninterrupted rate of 7 vehicles per week after acceptance of the first-article.

Item	Description	Unit	Quantity	Unit Price
001	LOW FLOOR 40' HEAVY DUTY GASOLINE HYBRID TRANSIT BUSES: GE40LFR (UltraCaps and Alternator)	Each	1	$496,208.00

Total price per unit per MTS RFP No. GXXX.0-07, Section 6, less cost of any non-taxable handicap accessibility equipment and delivery charges not subject to sales tax. (These items shall be priced separately in item 002 and 003.)

Item	Description	Unit	Quantity	Unit Price
002	HANDICAP/ACCESSIBILITY EQUIPMENT:	Each	1	$12,683.00

Item	Description	Unit	Quantity	Unit Price
003	DELIVERY CHARGE PER BUS:	Each	1	$4,064.00

Any other item/s considered non-taxable, please identify individual equipment as an attachment to the Cost and Pricing Form.

Item	Description	Unit	Quantity	Unit Price
004	TRAINING:	Hours	728	$81,111.00

Item	Description	Unit	Quantity	Unit Price
005	TRAINING MATERIALS AND MANUALS:	Lot	1	$13,914.00

Item	Description	Unit	Quantity	Unit Price
006	WARRANTY COST PER BUS:	Each	1	$5,300.00

Item	Description	Unit	Quantity	Unit Price
007	TOOLS (DIAGNOSTIC & REPAIR):	Lot	1	$58,439.00

RETURN THIS FORM WITH YOUR PROPOSALS
RETAIN OTHER PAGES FOR YOUR RECORDS

Handicap Equipment

Description	Cost
Wheelchair Ramp	$3,347.00
Flip-up Seats, W/C Belts & Restraint System	$2,135.00
Destination Signs	$5,673.00
Voice Annunciation (Speak-Easy)	$934.00
Yellow Stanchions	$235.00
Kneeling System	$359.00
TOTAL COST	**$12,683.00**

OFFER FORM FOR 40' LOW FLOOR CNG TRANSIT BUS

Offeror shall complete the following form and include same in the price proposal.

OFFER

By execution below Proposer hereby offers to furnish equipment and services as specified in the Metropolitan Transit System Request for Proposals No. G1101.0-07 including the Special Provisions and Federal Requirements (Section 2), Quality Assurance Provisions (Section 3), Warranty Provisions (Section 4) and Technical Specifications for the 40' Low Floor CNG Transit Bus (Section 6), therein.

Propulsion Unit Proposed:

Compressed Natural Gas / Gasoline Hybrid

Proposer: New Flyer of America Inc.
Name

Street Address: 711 Kenaston Avenue

City, State, Zip: Winnipeg, Manitoba, Canada R3L 3T4

Signature of Authorized Signer:

Title: Chief Financial Officer

Phone Number: (204) 224-1251 (Ext. 357 or 346)

RETURN THIS FORM WITH YOUR PROPOSALS
RETAIN OTHER PAGES FOR YOUR RECORDS

NEW FLYER

VEHICLE PRICING

Model	Comments	LF	LFR
GE35	Ultracaps & Alternator Configuration	$523,863.00	$527,143.00

Model	Comments	LF	LFR	LFA
C40		$374,254.00	$377,534.00	$393,743.00
GE40	Ultracaps & Alternator Configuration	$492,928.00	$496,208.00	$512,417.00

NOTES:

1) Pricing excludes handicap accessibility equipment, delivery charges & warranty.
2) Pricing does not include taxes.
3) Pricing is based on unique configuration differences between what is required technically on the 35' bus versus the 40' bus design.

Headquarters/ Winnipeg Facility
711 Kernaghan Ave.
Winnipeg, Manitoba
R2C 3T4 Canada
Ph: (204) 224-1251

Customer Services
25 DeBaets St.
Winnipeg, Manitoba
R2J 4G5 Canada
Ph: (204) 982-8400

New Product Development
Unit 7, 45 Beghin Ave.
Winnipeg, Manitoba
R2J 4B9 Canada
Ph: (204) 982-8413

Crookston Facility
214 5th Ave. SW
Crookston, Minnesota
56716 USA
Ph: (218) 281-5752

St. Cloud Facility
6200 Glenn Carlson Dr.
St. Cloud, Minnesota
56301 USA
Ph: (320) 203-0576

www.newflyer.com

Optional Pricing – Extended Warranties

Description	Supplier	Bus Type	Cost	Duration	Comments
Engine	Cummins	CNG	$3,200.00	5 Years or 300,000 Miles, whichever occurs first. Cost for extended coverage from years 3 through 5. NOTE: First two (2) years are no cost.	Warranty coverage (duration/mileage and parts/labor) is subject to the manufacturer' terms and conditions.
Transmission	ZF	CNG	$3,200.00	5 Years or 300,000 Miles, whichever occurs first. Cost for extended coverage from years 3 through 5. NOTE: First two (2) years are no cost.	Warranty coverage (duration/mileage and parts/labor) is subject to the manufacturer' terms and conditions.
Hybrid Drive	ISE	GE	$20,050.00	5 Years or 300,000 Miles, whichever occurs first. Cost for extended coverage from years 3 through 5. NOTE: First two (2) years are no cost.	Warranty coverage (duration/mileage and parts/labor) is subject to the manufacturer' terms and conditions.
HVAC	Carrier	CNG	N/C	Three (3) Years, unlimited mileage.	Third Year coverage is included and is subject to the manufacturer' terms and conditions.
HVAC	Thermo King	GE	$1,250.00	Three (3) Years, unlimited mileage. Cost for extended coverage from years 2 through 3. NOTE: First two (2) years are no cost.	Third Year coverage is included and is subject to the manufacturer' terms and conditions.

Item #004

Training

New Flyer Standard Training		GE35LFR	
DESCRIPTION	QTY Hrs.	SPECIFICATION	COMMENTS
Base Training included in bus purchase	30	Section 2.28, pg 51	
Additional New Flyer Maintenance Training	254	Section 2.28, pg 51	
Training Materials			$300 per 40 hour week
Sub Total - New Flyer Standard Training			

OEM Vendor Training			
DESCRIPTION	QTY	SPECIFICATION	COMMENTS
Engine OEM Training			
Cummins Familiarization & Troubleshooting	2	Section 2.28, pg 51	Cummins Cal Pacific standard quote
4-day session with 8 students max.			$250 per day per student
Propulsion OEM Training			
ISE Familiarization & Troubleshooting	4	Section 2.28, pg 51	ISE quote
3-day session with 10 students max.			
HVAC OEM Training			
TK Familiarization	6	Section 2.28, pg 51	$1,000 per day
2-day session with 10 students max.			first session N/C from TK
Destination OEM Training			
Luminator Familiarization	2	Section 2.28, pg 51	no charge from Luminator
1-day session with 10 students max.			
Security Camera OEM Training			
Integrian (TransitCam) Familiarization	4	Section 2.28, pg 51	
1-day session with 8 students max.			

New Flyer Standard Training		C40LFR	
DESCRIPTION	QTY Hrs	SPECIFICATION	COMMENTS
Base Training included in bus purchase	30	Section 2.28, pg 51	
Additional New Flyer Maintenance Training	262	Section 2.28, pg 51	
Training Materials			$300 per 40 hour week
Sub Total - New Flyer Standard Training			

OEM Vendor Training			
DESCRIPTION	QTY	SPECIFICATION	COMMENTS
Engine OEM Training			
Cummins Familiarization & Troubleshooting	2	Section 2.28, pg 51	Cummins Cal Pacific standard quote
4-day session with 8 students max.			$250 per day per student
Transmission OEM Training			
ZF Familiarization & Troubleshooting	4	Section 2.28, pg 51	ZF quote
2-day session with 10 students max.			(2007 prices plus 5%)
HVAC OEM Training			
TK Familiarization	4	Section 2.28, pg 51	$1,000 per day
2-day session with 8 students max.			first session N/C from TK
Destination OEM Training			
Luminator Familiarization	2	Section 2.28, pg 51	no charge from Luminator
1-day session with 8 students max.			
Security Camera OEM Training			
Integrian (TransitCam) Familiarization	4	Section 2.28, pg 51	
1-day session with 8 students max.			

New Flyer Standard Training		GE40LFR	
DESCRIPTION	QTY Hrs.	SPECIFICATION	COMMENTS
Base Training included in bus purchase	30	Section 2.28, pg 51	
Additional New Flyer Maintenance Training	254	Section 2.28, pg 51	
Training Materials			$300 per 40 hour week
Sub Total - New Flyer Standard Training			

OEM Vendor Training			
DESCRIPTION	QTY	SPECIFICATION	COMMENTS
Engine OEM Training			
Cummins Familiarization & Troubleshooting	2	Section 2.28, pg 51	Cummins Cal Pacific standard quote
4-day session with 8 students max.			$250 per day per student
Propulsion OEM Training			
ISE Familiarization & Troubleshooting	4	Section 2.28, pg 51	ISE quote
3-day session with 10 students max.			
HVAC OEM Training			
TK Familiarization	6	Section 2.28, pg 51	$1,000 per day
2-day session with 10 students max.			first session N/C from TK
Destination OEM Training			
Luminator Familiarization	2	Section 2.28, pg 51	no charge from Luminator
1-day session with 10 students max.			
Security Camera OEM Training			
Integrian (TransitCam) Familiarization	4	Section 2.28, pg 51	
1-day session with 8 students max.			

Item #005

Training Materials & Manuals

Training Materials Manuals

Line #	Training Materials - Subcomponent Description	GE35LFR	GE40LFR	C40LFR	GE35LFR Manual Qty	GE40LFR Manual Qty	C40LFR Manual Qty
	Training Materials - Handouts, etc.	$2,889.00	$2,889.00	$2,889.00	N/A	N/A	N/A
	Operator's Guide (8.5x11 3-hole)	$236.67	$158.89	$158.89	24	14	14
	Parts Manual	$561.11	$705.56	$705.56	8	10	10
	Service Manual	$650.00	$1,138.89	$1,138.89	8	14	14
	Bus Electrical Schematic Manual (11x17 3-hole normal paper)	$472.22	$805.56	$805.56	6	14	14
	TIV CD ROM	$72.22	$83.33	$83.33	2	2	2
	Engine/Hybrid Drive Manual Set	$1,822.22	$3,577.77	$2,488.89	2	4	4
	Transmission Manual Set	N/A	N/A	$755.56	2	4	4
	Multiplex Manual Set	$155.55	$288.88	$288.89	2	4	4
	HVAC Manual Set	$111.11	$200.00	$200.00	2	4	4
	Camera System Manual Set	$55.55	$100.00	$100.00	2	4	4
	ABS Manual Set	$55.55	$100.00	$100.00	2	4	4
	Destination Sign Manual Set	$55.55	$100.00	$100.00	2	4	4
	Fire Suppression Manual Set	$55.55	$100.00	$100.00	2	4	4
	Labor Charge for Custom Manual Set (GE Only)	$3,666.67	$3,666.67	N/A	N/A	N/A	N/A
	Grand Total Training Materials per Bus	$10,859.00	$13,914.00	$9,914.00	N/A	N/A	N/A

Item #006

Warranty Cost Per Bus

Warranty Cost per Bus

Warranty - Subcomponent Description	GE35LFR	GE40LFR	C40LFR
2nd Year Bumper to Bumper Warranty	$4,500.00	$4,500.00	$4,500.00
2nd Year Brake System	$300.00	$300.00	$300.00
2nd Year Camera System	$500.00	$500.00	$500.00
Grand Total Warranty per Bus:	$5,300.00	$5,300.00	$5,300.00

Item #007 or #008

Training (Diagnostic & Repair)

Tools (Diagnostic Repair)

Tools & Diagnostic Equipment - Subcomponent Description	GE35LFR	GE40LFR	C40LFR	GE35LFR Tools Qty	GE40LFR Tools Qty	C40LFR Tools Qty
ABS Training Board	N/A	$19,356.39	$19,356.39			
Air/ABS Brake Training Board	N/A	Inc. Above	Inc. Above	N/A	1	1
Portable Computer	$5,021.28	$5,021.28	$5,021.28			
Panasonic Toughbook CF-51	Inc. Above	Inc. Above	Inc. Above	2	2	2
Axles - MAN	$4,418.38	$4,418.38	$4,418.38			
Front Axle Service Tools (all items listed below)	Inc. Above	Inc. Above	Inc. Above	1	1	1
Socket Wrench, 65mm	Inc. Above	Inc. Above	Inc. Above	1	1	1
Socket Wrench, Steering Knuckle Tube	Inc. Above	Inc. Above	Inc. Above	1	1	1
Puller Cap, Threaded	Inc. Above	Inc. Above	Inc. Above	1	1	1
Spacer, M115	Inc. Above	Inc. Above	Inc. Above	1	1	1
Adapter	Inc. Above	Inc. Above	Inc. Above	1	1	1
Bushing, Threaded M115	Inc. Above	Inc. Above	Inc. Above	1	1	1
Extractor Grips, Rollex II V7-70 & V9-75	Inc. Above	Inc. Above	Inc. Above	1	1	1
Adapter, Socket	Inc. Above	Inc. Above	Inc. Above	1	1	1
Torque Meter	Inc. Above	Inc. Above	Inc. Above	1	1	1
Joint Press	Inc. Above	Inc. Above	Inc. Above	1	1	1
Puller Cap Plastic Bushing	Inc. Above	Inc. Above	Inc. Above	1	1	1
Spindle	Inc. Above	Inc. Above	Inc. Above	1	1	1
Nut	Inc. Above	Inc. Above	Inc. Above	1	1	1
Extractor Tool Basic	Inc. Above	Inc. Above	Inc. Above	1	1	1
Bushing Rollex 11 250MM Lg	Inc. Above	Inc. Above	Inc. Above	1	1	1
Extractor Hooks Shaft Seals	Inc. Above	Inc. Above	Inc. Above	1	1	1
Pressing Plate Ring Outer Bearing	Inc. Above	Inc. Above	Inc. Above	1	1	1
Pressing Plate Ring Inner Bearing	Inc. Above	Inc. Above	Inc. Above	1	1	1
Handle Press In Plate	Inc. Above	Inc. Above	Inc. Above	1	1	1
Pressing Tool Ring V7-70 and V9-75	Inc. Above	Inc. Above	Inc. Above	1	1	1
for brake shoe return spring (VOK-07&HP-1352)	Inc. Above	Inc. Above	Inc. Above	1	1	1
Mandrel Press In Bushing 35mm	Inc. Above	Inc. Above	Inc. Above	1	1	1
Mandrel Press In Bushing 30mm	Inc. Above	Inc. Above	Inc. Above	1	1	1
Riveting Tool Brake Linings	Inc. Above	Inc. Above	Inc. Above	1	1	1
Adaptor Bow	Inc. Above	Inc. Above	Inc. Above	1	1	1
Mandrel Brake Camshaft Bearing	Inc. Above	Inc. Above	Inc. Above	1	1	1
Mandrel Brake Camshaft Rings and Bushings	Inc. Above	Inc. Above	Inc. Above	1	1	1
Wrench Shock Tower 24mm	Inc. Above	Inc. Above	Inc. Above	1	1	1
Wrench Shock Tower 27mm	Inc. Above	Inc. Above	Inc. Above	1	1	1
Rear Axle Service Tools (all items listed below)	$9,174.19	$9,174.19	$9,174.19			
Gripper Support	Inc. Above	Inc. Above	Inc. Above	1	1	1
for brake shoe return spring (VOK-07&HP-1352)	Inc. Above	Inc. Above	Inc. Above	1	1	1
Slotted nut spanner, remove/ install wheel hub	Inc. Above	Inc. Above	Inc. Above	1	1	1
Tool for pressing oil catch plate 81.35730-0048 into spacer ring*	Inc. Above	Inc. Above	Inc. Above	1	1	1
Tool for pressing radial shaft seals into wheel hub*	Inc. Above	Inc. Above	Inc. Above	1	1	1
Guide bush for installing wheel hub on axle stub	Inc. Above	Inc. Above	Inc. Above	1	1	1
M22x1.5mm adapter to hammer wheel studs into installed hub**	Inc. Above	Inc. Above	Inc. Above	1	1	1
* slip on handle for pressing tool	Inc. Above	Inc. Above	Inc. Above	1	1	1
** impact tool	Inc. Above	Inc. Above	Inc. Above	1	1	1
plier for circlip, removing/installing axle shaft	Inc. Above	Inc. Above	Inc. Above	1	1	1
dial gage, for checking endplay on sungear	Inc. Above	Inc. Above	Inc. Above	1	1	1
magnetic stand for dial gage, checking endplay on sungear	Inc. Above	Inc. Above	Inc. Above	1	1	1
torque multiplier 1:8	Inc. Above	Inc. Above	Inc. Above	1	1	1
centering tool, remove and install slotted nut	Inc. Above	Inc. Above	Inc. Above	1	1	1
counter- holder, to hold torque multiplier in place	Inc. Above	Inc. Above	Inc. Above	1	1	1
press in tool/ press in planetary gears	Inc. Above	Inc. Above	Inc. Above	1	1	1
pressing pin/ press out planetary pins	Inc. Above	Inc. Above	Inc. Above	1	1	1
clamping plate/ dismantling and assembling planetary drive	Inc. Above	Inc. Above	Inc. Above	1	1	1
press tool, press seal race and bracket for ABS sensor on axle tube	Inc. Above	Inc. Above	Inc. Above	1	1	1
hook to remove seal race	Inc. Above	Inc. Above	Inc. Above	1	1	1
removing device for removing hub bearing outer race, shaft seal	Inc. Above	Inc. Above	Inc. Above	1	1	1
press tool, pressing in bearing outer race	Inc. Above	Inc. Above	Inc. Above	1	1	1
support bracket, in conjunction with 3 arm puller, remove shaft seal	Inc. Above	Inc. Above	Inc. Above	1	1	1
pressing tool, pressing in spacer between hub bearings	Inc. Above	Inc. Above	Inc. Above	1	1	1
hook to remove bracket for ABS sensor **	Inc. Above	Inc. Above	Inc. Above	1	1	1
clamping plate for pinion bearing cage	Inc. Above	Inc. Above	Inc. Above	1	1	1
basic tool rollex II, remove bearing crown wheel	Inc. Above	Inc. Above	Inc. Above	1	1	1
removal sleeve for rollex II	Inc. Above	Inc. Above	Inc. Above	1	1	1
quick gripper, bevel gear bearing, 33115	Inc. Above	Inc. Above	Inc. Above	1	1	1
quick gripper, bevel gear bearing, 32314	Inc. Above	Inc. Above	Inc. Above	1	1	1
insert plate, outer race outer bevel gear bearing	Inc. Above	Inc. Above	Inc. Above	1	1	1
insert plate, outer race inner bevel gear bearing	Inc. Above	Inc. Above	Inc. Above	1	1	1
plug-on handle	Inc. Above	Inc. Above	Inc. Above	1	1	1

Tools (Diagnostic Repair)

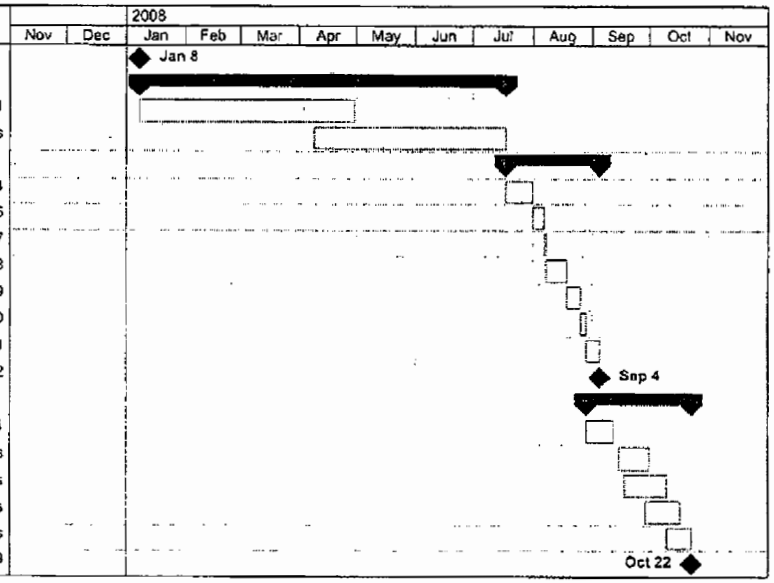
torque wrench, 2- 17 5 Nm	Inc. Above	Inc. Above	Inc. Above	1	1	1
insert bush, sealing ring into bavel gear hsg.	Inc. Above	Inc. Above	Inc. Above	1	1	1
slotted nut socket,diff. hsg. threaded rings	Inc. Above	Inc. Above	Inc. Above	1	1	1
metering cylinder	Inc. Above	Inc. Above	Inc. Above	1	1	1
clamping device	Inc. Above	Inc. Above	Inc. Above	1	1	1
clamp	Inc. Above	Inc. Above	Inc. Above	1	1	1
metering shaft	Inc. Above	Inc. Above	Inc. Above	1	1	1
guide bush, d=125mm	Inc. Above	Inc. Above	Inc. Above	1	1	1
metering column R=100	Inc. Above	Inc. Above	Inc. Above	1	1	1
metering column R=105	Inc. Above	Inc. Above	Inc. Above	1	1	1
Pressing On Device Oil Catch Plate	Inc. Above	Inc. Above	Inc. Above	1	1	1
Adaptor Plate 1710 Yoke	Inc. Above	Inc. Above	Inc. Above	1	1	1
Expanded Socket	Inc. Above	Inc. Above	Inc. Above	1	1	1
Puller, 3 Jaw Straight, 10 Ton	Inc. Above	Inc. Above	Inc. Above	1	1	1
Gun, Suction, Axle Oil	Inc. Above	Inc. Above	Inc. Above	1	1	1
Pressing Tool, Oil Catch Plate	Inc. Above	Inc. Above	Inc. Above	1	1	1
Pressing Tool, Inner Seal	Inc. Above	Inc. Above	Inc. Above	1	1	1
Pressing Tool	Inc. Above	Inc. Above	Inc. Above	1	1	1
Stud, 8MM x 1 3/4	Inc. Above	Inc. Above	Inc. Above	1	1	1
Seal Guide	Inc. Above	Inc. Above	Inc. Above	1	1	1
King Pin Press	$5,486.97	$5,486.97	$5,486.97	1	1	1
Heavy Duty Transmission Jack	N/A	N/A	$3,480.73	0	0	1
Multiplex	$483.91	$967.82	$967.82			
DLA Adapter Kit	Inc. Above	Inc. Above	Inc. Above	1	2	2
Vansco Software (Download from Net)	Inc. Above	Inc. Above	Inc. Above	1	2	2
HVAC	$0.00	$382.57	$382.57			
Intelligarie II Diagnostic Software & Cables	Inc. Above	Inc. Above	Inc. Above	1	2	2
Engine	$569.31	$1,138.61	$3,382.20			
Scan Tool Kit OBD II Ford	Inc. Above	Inc. Above	Inc. Above	1	2	2
Transmission/Hybrid Drive	$5,686.22	$11,372.45	$5,126.02			
Diagnostic Tool Kit	Inc. Above	Inc. Above	Inc. Above	1	2	2
ABS	$560.19	$1,120.39	$1,120.39			
Wabco Software	Inc. Above	Inc. Above	Inc. Above	1	2	2
Wabco Cable for 6334596 - Converter	Inc. Above	Inc. Above	Inc. Above	1	2	2
Wabco Cable for 6334596 - 6 pin Deutch	Inc. Above	Inc. Above	Inc. Above	1	2	2
6 to 9 pin adapter	Inc. Above	Inc. Above	Inc. Above	1	2	2
Wabco Cable for 6334596 - Male/Female extension	Inc. Above	Inc. Above	Inc. Above	1	2	2
TOTAL COSTS	$31,400.00	$59,439.00	$67,917.00			

GE35LFR
BAFO
Delivery Schedule

NEW FLYER

SAN DIEGO - Bid #G1101.0-07 - GE35LFR x 10

ID	Task Name	Start	Finish	Duration	Predecessors
1	**NOTICE TO PROCEED**	**Jan 8 '08**	Jan 8 '08	0 days	
2	**Production Preparation**	Jan 8 '08	Jul 17 '08	137 days	
3	Product Definition / BoM	Jan 8 '08	Apr 29 '08	16 wks	1
4	Material Procurement	Apr 9 '08	Jul 17 '08	14 wks	3FS-3 wks
5	**Lead Bus Production**	**Jul 18 '08**	**Sep 4 '08**	33 days	
6	Winnipeg line	Jul 18 '08	Jul 31 '08	10 days	4
7	Winnipeg completion	Aug 1 '08	Aug 6 '08	3 days	6
8	Transportation to Crookston	Aug 7 '08	Aug 7 '08	1 day	7
9	Crookston line	Aug 8 '08	Aug 18 '08	7 days	8
10	Crookston bus completion	Aug 19 '08	Aug 25 '08	5 days	9
11	Configuration Audit - Crookston	Aug 26 '08	Aug 28 '08	3 days	10
12	Transport to Property	Aug 29 '08	Sep 4 '08	4 days	11
13	Delivery at Property	Sep 4 '08	Sep 4 '08	0 days	12
14	**Production GE35LFR x 9**	**Aug 29 '08**	**Oct 22 '08**	38 days	
15	Winnipeg line entry	Aug 29 '08	Sep 11 '08	9 days	11
16	Winnipeg line exit	Sep 15 '08	Sep 30 '08	12 days	15SS+10 days
17	Crookston Line	Sep 18 '08	Oct 9 '08	16 days	16SS+3 days
18	Crookston Completion	Sep 29 '08	Oct 16 '08	14 days	17SS+7 days
19	Delivery at Property	Oct 10 '08	Oct 22 '08	9 days	18SS+9 days
20	**Last bus delivered**	**Oct 22 '08**	Oct 22 '08	0 days	19

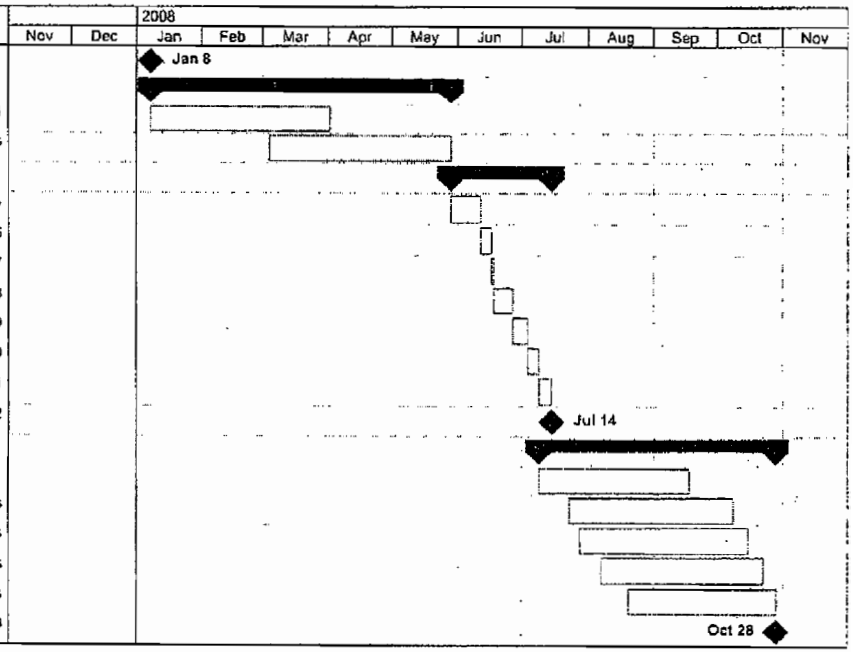


C40LFR
BAFO
Delivery Schedule

NEW FLYER

SAN DIEGO - Bid # G1101.0-07 - C40LFR x 50

ID	Task Name	Start	Finish	Duration	Predecessors
1	**NOTICE TO PROCEED**	Jan 8 '08	Jan 8 '08	0 days	
2	**Production Preparation**	Jan 8 '08	May 28 '08	101 days	
3	Product Definition / BoM	Jan 8 '08	Apr 1 '08	12 wks	1
4	Material Procurement	Mar 4 '08	May 28 '08	12 wks	3FS-4 wks
5	**Lead Bus Production**	May 29 '08	Jul 14 '08	33 days	
6	Winnipeg line entry/ line exit	May 29 '08	Jun 11 '08	10 days	4
7	Winnipeg snags work out	Jun 12 '08	Jun 16 '08	3 days	6
8	Transportation to Crookston	Jun 17 '08	Jun 17 '08	1 day	7
9	Crookston line entry/ line exit	Jun 18 '08	Jun 26 '08	7 days	8
10	Crookston bus completion	Jun 27 '08	Jul 3 '08	5 days	9
11	Configuration Audit - Crookston	Jul 4 '08	Jul 8 '08	3 days	10
12	Transport to Property	Jul 9 '08	Jul 14 '08	4 days	11
13	Delivery at Property	Jul 14 '08	Jul 14 '08	0 days	12
14	**Production C40LFR x 49**	Jul 9 '08	Oct 28 '08	78 days	
15	Winnipeg line Entry	Jul 9 '08	Sep 17 '08	49 days	11
16	Winnipeg line Exit	Jul 23 '08	Oct 8 '08	54 days	15SS+10 days
17	Crookston Line	Jul 28 '08	Oct 15 '08	56 days	16SS+3 days
18	Crookston Completion	Aug 7 '08	Oct 22 '08	54 days	17SS+7 days
19	Delivery at Property	Aug 20 '08	Oct 28 '08	49 days	18SS+9 days
20	**Last bus delivered**	Oct 28 '08	Oct 28 '08	0 days	19



THIS SCHEDULE IS SUBJECT TO CHANGE

Dec 6 '07 5:09 PM

Metropolitan Transit System

REQUEST FOR PROPOSAL
FOR

35' and 40'
LOW FLOOR TRANSIT BUSES

MTS Doc. No. G1101.0-07

Issued MAY 22, 2007
MODIFIED BY ADDENDA ① →, ② →, ③ →, ④ →, ⑤ →, ⑥ →, ⑦ →
Conformed January 14, 2008

SAN DIEGO METROPOLITAN TRANSIT SYSTEM
Purchasing/Procurement Department
100 16th Street
San Diego, CA 92101
(619) 238-0100

MTS Issues Request for Proposals:	May 21, 2007
Pre-Proposal Conference:	May 31, 2007, at 10:00, Prevailing Local Time
Deadline for Submitting Written Questions:	June 12, 2007 at 4:00 p.m., Prevailing Local Time
MTS Issues Response to Written Questions:	June 22, 2007
Proposal Due Date:	***June 27, 2007 at 4:00 p.m., Prevailing Local Time***
Negotiations:	Week of July 30, 2007
Best & Final Offer:	Week of August 13, 2007
Anticipated Notice of Intent to Award:	Week of August 27, 2007
Anticipated Notice to Proceed:	Week of October 22, 2007
Contract Effective Date:	November 1, 2007

① →
② →
④ →
⑤ →

① →

MTS Issues Request for Proposals:	May 22, 2007
Pre-Proposal Conference:	May 31, 2007, at 10:00, Prevailing Local Time
Deadline for Submitting Written Questions:	June 26, 2007 at 4:00 p.m., Prevailing Local Time
MTS Issues Response to Written Questions:	July 13, 2007
Proposal Due Date:	***July 25, 2007 at 4:00 p.m., Prevailing Local Time***
Negotiations:	Week of August 6, 2007
Best & Final Offer:	Week of September 3, 2007
Anticipated Notice of Intent to Award:	Week of September 17, 2007
Anticipated Notice to Proceed:	Week of November 12, 2007
Contract Effective Date:	December 1, 2007

② →

MTS Issues Request for Proposals:	May 22, 2007
Pre-Proposal Conference:	May 31, 2007, at 10:00, Prevailing Local Time
Deadline for Submitting Written Questions:	June 26, 2007 at 4:00 p.m., Prevailing Local Time
MTS Issues Response to Written Questions:	July 25, 2007
Proposal Due Date:	***August 8, 2007 at 4:00 p.m., Prevailing Local Time***
Negotiations:	Week of August 20 2007
Best & Final Offer:	Week of September 17, 2007
Anticipated Notice of Intent to Award:	Week of September 24, 2007
Anticipated Notice to Proceed:	Week of November 12, 2007
Contract Effective Date:	December 1, 2007

④ →

MTS Issues Request for Proposals:	May 22, 2007
Pre-Proposal Conference:	May 31, 2007, at 10:00, Prevailing Local Time
Deadline for Submitting Written Questions:	June 26, 2007 at 4:00 p.m., Prevailing Local Time
MTS Issues Response to Written Questions:	July 25, 2007
Proposal Due Date:	***August 17, 2007 at 4:00 p.m., Prevailing Local Time***
Negotiations May Begin:	Week of August 27, 2007
Anticipated Best & Final Offer:	Week of September 24, 2007
Anticipated Notice of Intent to Award:	Week of October 8, 2007
Anticipated Notice to Proceed:	Week of November 19, 2007
Anticipated Contract Effective Date:	December 1, 2007

⑤ →

MTS Issues Request for Proposals:	May 22, 2007
Pre-Proposal Conference:	May 31, 2007, at 10:00, Prevailing Local Time
Deadline for Submitting Written Questions:	June 26, 2007 at 4:00 p.m., Prevailing Local Time
MTS Issues Response to Written Questions:	July 25, 2007
Proposal Due Date:	***August 24, 2007 at 4:00 p.m., Prevailing Local Time***
Negotiations May Begin:	Week of September 3, 2007
Anticipated Best & Final Offer:	Week of October 1, 2007
Anticipated Notice of Intent to Award:	Week of October 15, 2007
Anticipated Notice to Proceed:	Week of November 19, 2007
Anticipated Contract Effective Date:	December 1, 2007

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May 21, 2007

Dear Prospective Proposer:

Subject: **REQUEST FOR PROPOSALS FOR 35' AND 40' LOW FLOOR TRANSIT BUSES (MTS DOC. NO. G1101.0-07)**

The San Diego Metropolitan Transit System (MTS) is interested in receiving proposals from qualified manufactures under a negotiated procurement for 35' and 40' Low Floor Transit Buses. These vehicles will be for MTS and its bus operational arm San Diego Transit Corporation (SDTC) collectively referred to as MTS or the Agencies. MTS is a California public agency established by California Public Utilities Code, section 120000 et seq. MTS and its subsidiaries are subject to the California Tort Claims Act (Cal. Pub. Util. Code § 120202).

The intent of this Request for Proposals (RFP) is to negotiate the procurement of 35' and 40' transit buses over a five (5) year period. MTS will make annual assessments of their bus needs for each contract year of the Contract. MTS is requesting proposals that reflect the following projected deliverables:

Year one (1) of the contract, MTS will purchase a minimum of (10) or up to twenty (20) each advanced designed 35' low floor transit buses and a minimum of twenty (20) or up to fifty (50) each 40' low floor transit buses as funding permits.

- Year two (2) of the contract, MTS will purchase a minimum of twenty (20) or up to fifty (50) each 40' low floor transit buses as funding permits.

- Year three (3) of the contract, MTS will purchase a minimum of twenty (20) or up to fifty (50) each 40' low floor transit buses as funding permits.

- Year four (4) of the contract MTS will purchase up to one hundred (100) each 40' low floor transit buses as funding permits. (Waiting for input from RT & CS)

- Year five (5) of the contract MTS will purchase up to one hundred (100) each 40' low floor transit buses as funding permits. (Waiting for input from RT & CS)

- The options shall be exercised for quantities up to 100 buses for any agency on one or more occasions over a five (5) year period from the date of the Notice to Proceed. Option prices must remain firm for one (1) year from the date of the Notice to Proceed. After that, the prices are subject to adjustment using the Produce Price Index (PPI) for Truck and Bus Bodies #1413. There will be a cap of four (4%) percent for any given one (1) year period starting from the Notice to Proceed. The number of options exercised at any given time will be determined upon the available funding at the time of each execution. The option buses shall be exercised per the scope of the original specifications. A cost or price analysis will be performed at the time of execution to determine if the option price or the current market price is the more advantageous offer. If the option price is not the most advantageous, the option shall not be exercised and a new solicitation shall be performed.

The detailed technical specifications and schedule of delivery as described above can be reviewed in the attached Scope of Work (Section 5 and 6).

This letter, together with its attachments, comprises the MTS RFP for buses. This proposal package includes the following:

- Proposal Instructions, Special Provisions, Quality Assurance Provisions, and Warranty Provisions (Sections 1, 2, 3, and 4). These attachments offer general instructions on the execution of the proposal, the proposal evaluation process, and the requirements each Proposer must meet.

- Scope of Work (Sections 5 and 6). The Proposer will be expected to manufacture and deliver the 35' and 40' Low Floor Transit Buses described in the Scope of Work.

- Standard Procurement Agreement (Section 8) and attached Federal Requirements (Section 9). The successful Proposer will be required to execute the Agreement and comply with the insurance provisions contained therein. Any proposed waiver or changes to the Agreement must be clearly identified in the proposal with any cost impacts specifically identified. It is within MTS's discretion to accept or reject any proposed waiver or change to the Agreement. Any requested waivers or changes regarding subcontractors' insurance should identify the subcontractor's scope of work, current insurance levels, and associated costs of proposed insurance amounts.

CALENDAR OF EVENTS

The schedule of events leading from issuance of the RFP to award of a contract is as follows:

ACTION	DATE
MTS Issues Request for Proposals:	May 21, 2007
Pre-Proposal Conference:	May 31, 2007, at 10:00 a.m., Prevailing Local Time
Deadline for Submitting Written Questions:	June 12, 2007, at 4:00 p.m., Prevailing Local Time
MTS Issues Response to Written Questions:	June 22, 2007
Proposal Due Date:	***June 27, 2007, at 4:00 p.m., Prevailing Local Time***
Negotiations:	Week of July 30, 2007
Best & Final Offer:	Week of August 13, 2007
Anticipated Notice of Intent to Award:	Week of August 27, 2007
Anticipated Notice to Proceed:	Week of October 22, 2007
Contract Effective Date:	November 1, 2007

We believe this timetable is reasonable and do not expect or desire a lengthy glossy proposal. The proposal should be concise and to the point.

MTS POINT OF CONTACT

Mr. Mike Ceragioli, Contract Officer, is the sole point of contact for this solicitation. Mr. Ceragioli can be reached via telephone at (619) 238-0100, Ext. 6493 or via email at mike.ceragioli@sdmts.com. Proposers are directed not to contact other representatives of MTS, including any personnel, or Board members in connection with this RFP. Noncompliance with this requirement may result in your firm's proposal being considered nonresponsive.

DISADVANTAGED BUSINESS ENTERPRISE (DBE) PARTICIPATION (NOTE – THIS PROVISION WILL ONLY APPLY TO THOSE CONTRACTS AWARDED AND PAID FOR WITH FEDERAL FUNDS)

POLICY

It is the policy of the Department of Transportation that Disadvantaged Business Enterprises (DBEs) as defined in 49 C.F.R. Part 23 shall have the maximum opportunity to participate in the performance of Contracts financed in whole or in part with Federal Funds under this agreement. Consequently the DBE requirements of 49 C.F.R. Part 23 apply to this agreement.

DBE OBLIGATION

Contractor agrees to ensure that Disadvantaged Business Enterprises as defined in 49 C.F.R. Part 23 have the maximum opportunity to participate in the performance of Contracts and subcontracts financed in whole or in part with Federal funds provided under this agreement. In this regard, all recipients or contractors shall take all necessary and reasonable steps in accordance with 49 C.F.R. Part 23 to ensure that Disadvantaged Business Enterprises have the maximum opportunity to compete for and perform contracts. Recipients and their contractors shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of DOT assisted contracts.

REMEDY

Failure of the Contractor to comply with this section or to include it in any subcontract of any tier will constitute a breach of Contract and, after notification of DOT, may result in termination of the Contract by MTS or such remedy as MTS deems appropriate.

DBE CERTIFICATION

Pursuant to Title 49, Code of Federal Regulations, part 23.67, an Offeror, as a condition of being authorized to respond to this solicitation, must certify by completing "DBE APPROVAL CERTIFICATION" form, see Section 11, Page 267, that it has on file with the Federal Transportation Administration (FTA) an approved or not disapproved annual Disadvantaged Business Enterprise (DBE) subcontracting participation goal.

TERMS AND CONDITIONS

The proposed contract terms and conditions are identified in the Standard Procurement Agreement (Section 8) and Federal Requirements (Section 9).

PROPOSAL EVALUATION PROCESS

Any contract resulting from this RFP will be awarded to the qualified firm whose proposal, as determined by MTS, best meets the requirements set forth in the Proposal Instructions, Special Provisions, Quality Assurance Provisions, and Warranty Provisions (Sections 1, 2, 3, and 4) and the Scope of Work (Sections 5 and 6). MTS uses a selection process in which proposals contain both price and qualitative components, and award is based upon a combination of price and qualitative considerations. Qualitative considerations may include experience and qualifications, technical approach, quality of proposed personnel, and/or management plan. The award selection is based upon consideration of a combination of technical and price factors to determine (or derive) the offer deemed most advantageous and of the greatest value to MTS.

An evaluation committee will review all proposals received using the criteria described in Section 1. MTS may elect to interview qualified Proposers. MTS reserves the right to reject all proposals, to select without further discussion or interviews, to request additional information, and to negotiate the final terms and conditions.

MTS may, at its sole and absolute discretion, reject any or all parts of the proposals; re-advertise this RFP; postpone or cancel, at any time, this RFP process; or waive any irregularities in this RFP. The decision as to who shall receive a contract award, or whether or not an award shall ever be made as a result of this RFP, shall be at the sole and absolute discretion of MTS.

PROPOSAL ACCEPTANCE PERIOD

One (1) original and ten (10) copies of the completed proposal should be submitted to MTS no later than **4:00 p.m. prevailing local time on June 27, 2007**. No exceptions will be made to this deadline. All proposals shall be delivered to MTS at 100 16th Street, San Diego, California 92101, Attention: Mike Ceragioli. Clearly specify on the proposal, "35' and 40' Low Floor Transit Buses-RFP, MTS Doc. No. G1101.0-07, MTS Payroll and HRIS." Proposals will not be accepted via facsimile.

Sincerely,

Paul C. Jablonski
Chief Executive Officer

PJ/MC:kb

Sections:

1. Request for Proposal Instructions
2. Special Provision & Federal Requirements
3. Quality Assurance Provisions
4. Warranty Provisions
5. Scope of Work – 35' Low Floor Bus
6. Scope of Work – 40' Low Floor Bus
7. Cost/Pricing Forms
8. Sample of Standard Procurement Agreement
9. Federal Requirements
10. Sample of Insurance Certificate
11. Required Forms

SECTION 1

PROPOSAL INSTRUCTIONS

1.0 SOLICITATION DATA - MTS AND CONTRACT OFFICER

Request for Proposal MTS Doc. No. G1101.0-07

Proposals delivered in person or by private delivery courier, shall be delivered to the following address:

Metropolitan Transit System
Attention: Mike Ceragioli, Contract Officer
MTS Procurement Department
100 16th Street
San Diego, CA 92101

Proposals delivered by an overnight courier, shall be delivered to the following address:

Metropolitan Transit System
Attention: Mike Ceragioli, Contract Officer
MTS Receiving Department
100 16th Street
San Diego, CA 92101

Proposals delivered using the U.S. Postal Services, shall be addressed as follows:

Metropolitan Transit System
Attention: Mike Ceragioli, Contract Officer
MTS Procurement Department
P.O. Box 122511
San Diego, CA 92112-2511

Telephone: (619) 238-0100 Ext. 6493 Fax No.: 619-696-7084

Email: mike.ceragioli@sdmts.com

IDENTIFICATION OF PROPOSALS

Proposer shall submit ***one (1) original and ten (10) copies*** of their proposal in a sealed package, addressed as shown above, bearing the Proposers name and address and clearly marked as follows:

"35' and 40' LOW FLOOR TRANSIT BUSES RFP"

MTS Doc. No. G1101.0-07

Proposers shall be entirely responsible for any consequences resulting from any inadvertent opening of unsealed or improperly identified packages. It is the Proposers sole responsibility to see that its proposal is received as required. Proposals arriving late due to a delay in the delivery process will not be accepted.

ACCEPTANCE OF PROPOSALS

- MTS reserves the right to accept or reject any and all proposals, or any item or part thereof, or to waive any informalities or irregularities in proposals.
- MTS reserves the right to withdraw this RFP at any time without prior notice and MTS makes no representations that any contract will be awarded to any Proposer responding to this RFP.
- MTS reserves the right to postpone proposal openings for its own convenience.
- MTS reserves the right to require confirmation of information furnished by Proposer or for the Proposer to provide additional evidence of qualifications to perform the work or to obtain information from any source that has the potential to improve the understanding and evaluation of the proposals.
- Proposals received by MTS are considered public information and will be made available upon request after award.
- Proposals submitted are not to be copyrighted.

PRE-CONTRACTUAL EXPENSES

Pre-contractual expenses are defined as expenses incurred by Proposer in:

- Preparing its proposal in response to this RFP;
- Submitting that proposal to MTS;
- Negotiating with MTS any matter related to this proposal; or
- Any other expenses incurred by Proposer prior to date of award, if any, of the Agreement.

MTS shall not, in any event, be liable for any pre-contractual expenses incurred by Proposer in the preparation of its proposal. Proposer shall not include any such expenses as part of its proposal.

JOINT OFFERS

Where two Proposers desire to submit a single proposal in response to this RFP, they should do so on a prime-subcontractor basis rather than as a joint venture. MTS intends to contract with a single firm and not with multiple firms doing business as a joint venture.

CONTRACT TYPE

It is anticipated that the Agreement resulting from this solicitation, if awarded, will be structured as a firm fixed price Contract for buses and parts described and included in this RFP as Sections 5 and 6, Scope of Work.

PROPOSED AGREEMENT

The successful Proposer will be subject to the provisions contained in Section 8, Sample Standard Procurement Agreement and the General Conditions, all Special Provisions, and the Federal Requirements included in this RFP and this includes any changes that may be made to reflect the terms of the successful Proposer's proposal. The final Agreement shall also incorporate other pertinent terms and conditions set forth in this RFP.

The Proposer's attention is directed to Section 8.1.2, titled "Insurance," which specifies the minimum insurance requirements that must be met by the successful Proposer. The Proposer is required to provide evidence of their ability to acquire the required insurance with their proposal. Should the Proposer be unable to provide evidence of insurance within fourteen (14) days after notification of award by MTS, award may be made to an alternative Proposer.

The Proposer's inability or unwillingness to meet any requirements set forth in Section 8, as a condition of contract award, must be stated as an exception in the proposal.

1.1 SCOPE

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #398 for additional information.

The San Diego Metropolitan Transit System (MTS) requests proposals for the manufacture and delivery of 35' and 40' transit buses and spare parts over a five year period in accordance with the terms and conditions set forth below. The Contract shall be a firm-fixed price Contract. MTS is requesting proposals that reflect the following projected deliverables:

- Year one (1) of the contract, MTS will purchase a minimum of (10) or up to twenty (20) each advanced designed 35' low floor transit buses and a minimum of twenty (20) or up to fifty (50) each 40' low floor transit buses as funding permits.
- Year two (2) of the contract, MTS will purchase a minimum of twenty (20) or up to fifty (50) each 40' low floor transit buses as funding permits.
- Year three (3) of the contract, MTS will purchase a minimum of twenty (20) or up to fifty (50) each 40' low floor transit buses as funding permits.
- Year four (4) of the contract MTS will purchase up to one hundred (100) each 40' low floor transit buses as funding permits.
- Year five (5) of the contract MTS will purchase up to one hundred (100) each 40' low floor transit buses as funding permits.

- The options shall be exercised for quantities up to 100 buses for any agency on one or more occasions over a five (5) year period from the date of the Notice to Proceed. Option prices must remain firm for one (1) year from the date of the Notice to Proceed. After that, the prices are subject to adjustment using the Produce Price Index (PPI) for Truck and Bus Bodies #1413. There will be a cap of four (4%) percent for any given one (1) year period starting from the Notice to Proceed. The number of options exercised at any given time will be determined upon the available funding at the time of each execution. The option buses shall be exercised per the scope of the original specifications. A cost or price analysis will be performed at the time of execution to determine if the option price or the current market price is the more advantageous offer. If the option price is not the most advantageous, the option shall not be exercised and a new solicitation shall be performed.

The MTS reserves the right to award its total requirements to one Proposer, or to apportion those requirements among more than one Proposer, as the MTS may deem to be in its best interests.

1.2 SOLICITATION SCHEDULE

The following is the solicitation schedule for Proposers:

Proposers Communications and Requests:	Sec. 1.4
MTS Response to Communications and Requests:	Sec. 1.5
Proposal Due Date:	Sec. 1.7
Interviews:	Sec. 1.8

1.3 PRE-PROPOSAL CONFERENCE

A pre-proposal conference will be held by MTS on May 31, 2007, at 10:00 a.m., prevailing local time. The conference will be held at the MTS Offices located at 1255 Imperial Ave., Suite 1000, San Diego, CA 92101. MTS strongly recommends that any party intending on submitting a proposal attend this conference but it is not mandatory.

1.4 PROPOSER COMMUNICATIONS AND REQUESTS

All correspondence, communication and/or contact in regard to any aspect of this solicitation or offers shall be with the Contract Officer identified in "MTS and Contract Officer" (Section 1.0) above, or his/her designated representative. Proposers and their representatives shall not make any contact with or communicate with any MTS Board Members or staff, or MTS consultants, other than the Contract Officer in regard to any aspect of this solicitation or offers. Failure to do so may result in your proposal being deemed non-responsive.

At any time during this procurement up to the time specified in "Solicitation Schedule" (Section 1.2), Proposers may request, in writing, a clarification or interpretation of any aspect, or a change to any requirement of the RFP or any addenda to the RFP. Requests may include suggested substitutes for specified items and for any brand names, which whenever used in this solicitation shall mean the brand name or approved equal. Such written requests shall be made to the Contract Officer and may be transmitted by facsimile. The Proposer making the request shall be responsible for its proper delivery to the MTS and on the form provided in "Request for Pre-Offer Change or Approved Equal" (Section 11).

1.5 MTS RESPONSE TO COMMUNICATIONS AND REQUESTS

The MTS will not respond to oral requests. Any request for a change to any requirement of the Contract documents must be fully supported with technical data, test results, or other pertinent information evidencing that the exception will result in a condition equal to or better than that required by the RFP, without substantial increase in cost or time requirements. Any responses to such written requests shall be provided by the MTS in the form of addenda only. Only written responses provided as addenda shall be official and all other forms of communication with any officer, employee or agent of the MTS shall not be binding on the MTS.

If it should appear to a prospective Proposer that the performance of the work under the Contract, or any of the matters relating thereto, is not sufficiently described or explained in the RFP or Contract documents, or that any conflict or discrepancy exists between different parts thereof or with any federal, state, local or MTS law, ordinance, rule, regulation, or other standard or requirement, then the Proposer shall submit a written request for clarification to the MTS within the time period specified above.

All written questions and/or requests received by the MTS within the identified time will be answered in written addenda no later than, 4:00 p.m., prevailing local time on June 12, 2007.

② → All written questions and/or requests received by the MTS within the identified time will be answered in written addenda no later than, 4:00 p.m., prevailing local time on July 25, 2007.

④ → All written questions and/or requests received by the MTS within the identified time will be answered in written addenda no later than, 4:00 p.m., prevailing local time on July 25, 2007.

1.6 ADDENDA TO RFP

The MTS reserves the right to amend the RFP at any time. Any amendments to or interpretations of the RFP shall be described in written addenda. The MTS shall provide copies of Addenda to all prospective Proposers officially known to have received the RFP. Prospective Proposers, or their agents, shall be responsible to collect the addendum at the address provided in "MTS and Contract Officer" (Section 1.0). Notification of or the addendum will also be e-mailed by request to all such prospective Proposers officially known to have received the RFP and to the address provided by each prospective Proposer. Failure of any prospective Proposer to receive the

notification or addendum shall not relieve the Proposer from any obligation under its proposal as submitted or under the RFP, as clarified, interpreted or modified. All addenda issued shall become part of the RFP. Prospective Proposers shall acknowledge the receipt of each individual addendum and all prior addenda in their proposals, failure to do so may result in disqualification.

If the MTS determines that the addenda may require significant changes in the preparation of proposals, the deadline for submitting the proposals may be postponed by the number of days that the MTS determines will allow Proposers sufficient time to revise their proposals. Any new Due Date shall be included in the addenda.

1.7 DUE DATE

Sealed proposals, **one (1) original and ten (10) copies** must be received by the MTS on or before ***4:00 p.m., prevailing local time on June 27, 2007***. All labor, equipment, and materials shall be furnished in strict accordance with the delivery schedule and conditions of the Contract Documents. Proposals and subsequent offers shall be valid for a period of one hundred eighty (180) days.

① →

Sealed proposals, **one (1) original and ten (10) copies** must be received by the MTS on or before ***4:00 p.m., prevailing local time on July 25, 2007***. All labor, equipment, and materials shall be furnished in strict accordance with the delivery schedule and conditions of the Contract Documents. Proposals and subsequent offers shall be valid for a period of one hundred eighty (180) days.

② →

Sealed proposals, **one (1) original and ten (10) copies** must be received by the MTS on or before ***4:00 p.m., prevailing local time on August 8, 2007***. All labor, equipment, and materials shall be furnished in strict accordance with the delivery schedule and conditions of the Contract Documents. Proposals and subsequent offers shall be valid for a period of one hundred eighty (180) days.

④ →

Sealed proposals, **one (1) original and ten (10) copies** must be received by the MTS on or before ***4:00 p.m., prevailing local time on August 17, 2007***. All labor, equipment, and materials shall be furnished in strict accordance with the delivery schedule and conditions of the Contract Documents. Proposals and subsequent offers shall be valid for a period of one hundred eighty (180) days.

⑤ →

Sealed proposals, **one (1) original and ten (10) copies** must be received by the MTS on or before ***4:00 p.m., prevailing local time on August 24, 2007***. All labor, equipment, and materials shall be furnished in strict accordance with the delivery schedule and conditions of the Contract Documents. Proposals and subsequent offers shall be valid for a period of one hundred eighty (180) days.

1.8 INTERVIEWS

During the evaluation period, the MTS may interview some or all of the proposing firms. The MTS has identified the week of July 30, 2007, as the date we anticipate to conduct interviews. All prospective Proposers will be asked to keep this date available. No other interview dates will be provided, therefore, if a Proposer is unable to attend the interview on this date; its proposal may be eliminated from further discussion. The interview may consist of a short presentation by the Proposer after which the evaluation committee will

ask questions related to the firm's proposal and qualifications. The committee will use pre-established criteria during the interview process to score and make their final recommendation.

① → During the evaluation period, the MTS may interview some or all of the proposing firms. The MTS has identified the week of August 6, 2007, as the week we anticipate to conduct interviews. All prospective Proposers will be asked to keep this week available. No other interview dates will be provided, therefore, if a Proposer is unable to attend the interview during this week; its proposal may be eliminated from further discussion. The interview may consist of a short presentation by the Proposer after which the evaluation committee will ask questions related to the firm's proposal and qualifications. The committee will use pre-established criteria during the interview process to score and make their final recommendation.

② → During the evaluation period, the MTS may interview some or all of the proposing firms. The MTS has identified the week of August 20, 2007, as the week we anticipate to conduct interviews. All prospective Proposers will be asked to keep this week available. No other interview dates will be provided, therefore, if a Proposer is unable to attend the interview during this week; its proposal may be eliminated from further discussion. The interview may consist of a short presentation by the Proposer after which the evaluation committee will ask questions related to the firm's proposal and qualifications. The committee will use pre-established criteria during the interview process to score and make their final recommendation.

④ → During the evaluation period, the MTS may interview some or all of the proposing firms. The MTS has identified the week of August 27, 2007, as the week we anticipate to conduct interviews. All prospective Proposers will be asked to keep this week available. No other interview dates will be provided, therefore, if a Proposer is unable to attend the interview during this week; its proposal may be eliminated from further discussion. The interview may consist of a short presentation by the Proposer after which the evaluation committee will ask questions related to the firm's proposal and qualifications. The committee will use pre-established criteria during the interview process to score and make their final recommendation.

⑤ → During the evaluation period, the MTS may interview some or all of the proposing firms. The MTS has identified the week of September 3, 2007, as the week we anticipate to conduct interviews. All prospective Proposers will be asked to keep this week available. No other interview dates will be provided, therefore, if a Proposer is unable to attend the interview during this week; its proposal may be eliminated from further discussion. The interview may consist of a short presentation by the Proposer after which the evaluation committee will ask questions related to the firm's proposal and qualifications. The committee will use pre-established criteria during the interview process to score and make their final recommendation.

1.9 INSTRUCTIONS TO PROPOSERS

A) TECHNICAL PROPOSAL REQUIREMENTS

A letter of transmittal shall be addressed to the Contract Officer and must, at a minimum, contain the following:

- Identification of the offering firm(s), including name, address and telephone number of each firm;
- Proposed working relationship among offering firms (e.g., prime/subcontractor), if applicable;
- Acknowledgement of receipt of RFP addenda, if any; name, title, address and telephone number of contact person during the period of proposal evaluation;
- A statement to the effect the proposal shall remain valid for a period of not less than one hundred eighty (180) days from the date of submittal; and
- Signature of the person authorized to bind the offering firm to the terms of the proposal.

Proposals should be submitted on 8½" x 11" paper, using a single method of fastening. Offers should be typed; double spaced and should not include any unnecessarily elaborate or promotional material. Lengthy narrative is discouraged and presentations should be brief and concise. The proposal should not exceed one-hundred (100) pages in length, excluding any appendices. Information should be presented in the order which it is requested.

B) PROPOSER QUALIFICATIONS STATEMENT

This section of the proposal should establish the ability of the Proposer to satisfactorily provide the required equipment and services by reasons of; demonstrated competence in the product and service to be provided; the nature and relevance of recently completed work; staffing capability, work load and record of meeting schedules on similar projects; strength and stability as a business concern; strength of dealer/manufacturer relationship; and supportive client references. Proposer must provide a narrative that establishes their ability to meet the minimum qualification requirements as described in Section 1.14 "Qualification Requirements."

Provide a brief profile of the firm, including its principal line of business, the year founded, and form of organization (corporation, partnership, and sole proprietorship), number and location of offices, licenses held, number of employees, and a general description of the firm's financial condition. Identify any conditions (e.g. bankruptcy, pending litigation, planned office or plan closures, and impending merger) that may impede the Proposers ability to complete the project. Describe the firm's experience in providing like equipment to that solicited in this RFP, and highlight the participation in such work by the key personnel proposed for assignment to this project.

Identify subcontractors, if any, by company name, address, contact person, telephone number and project function. Provide the same information for each subcontractor as requested above, and describe any experience working with each subcontractor. Also, identify the portion of work to be completed by the subcontractor and the total dollar value of the work.

In addition, for each project cited as related experience, furnish the name, title, address and telephone number of the person(s) at the client organization who is most knowledgeable about the work performed. The Proposer may also supply references from other work not cited in this section as related experience. Listing of references shall include a detailed description of the work performed for the client referenced. Proposer must provide, as a minimum, three (3) references.

The Proposer shall state on the form provided in "Proposer Service and Parts Support Data" (Section 11) the representatives responsible for assisting the MTS, as well as the location of the nearest distribution center which shall furnish a complete supply of parts and components, for the repair and maintenance of the buses to be supplied.

C) PROPOSAL

The Proposer shall provide a narrative addressing the Technical Vehicle Specifications contained in Sections 5 and 6 of this RFP, which exhibits the Proposers understanding of MTS's needs and requirements. This narrative should address each category of the technical specification in the same order as it is presented in the scope of work.

The Proposer may also propose enhancements to the Technical Vehicle Specification which do not materially deviate from the objectives or required content of the core requirements. Enhancements must meet or exceed the minimum technical specification defined in the scope of work. The Proposer shall provide a Physical/Performance Requirements Chart that demonstrates how the enhancement meets or exceeds the core requirements of the Technical Vehicle Specification, and furnish any narrative required to explain or qualify the specifications provided in the proposal. Failure to provide this supporting documentation may cause your proposal to be negatively evaluated.

State any exceptions to or deviations from the requirements of this RFP, segregating "technical" exceptions from "contractual" exceptions. Where the Proposer wishes to propose alternative approaches to meeting the MTS's technical or contractual requirements, these should be thoroughly explained. Substitutions which deviate from the minimum technical specifications must be submitted as a request using the procedure described in Section 1.4 "Proposers Communications and Requests."

D) **MANAGEMENT PLAN** ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #9 & #399 for additional information.

This section of the proposal should establish the qualifications of the proposed project staff in terms of education, experience and professional credentials; the logic of the Proposers proposed project organization as measured by lines of reporting and control; and the adequacy of labor resources as evidenced by the proposed distribution of labor hours.

Identify key personnel proposed to perform work on the project, and indicate major areas of subcontracted work, if any. Include a project organization chart which clearly delineates communication/reporting relationships among the project staff and among the various firms involved.

Furnish brief resumes for the proposed Project Director and other key personnel. Resumes must feature experience most directly relevant to the work proposed for such key personnel on this project. Resumes should also describe the involvement of the key personnel in the related experience of the firm cited in the preceding section "Proposers Qualification Statement" (Section 1.10.B) and indicate length of time employed by the Proposer. Include a statement that key personnel shall be available for the duration of the project, and acknowledging that no person designated as "key" to the project shall be removed or replaced without the prior written concurrence of MTS.

E) **PRICE PROPOSAL REQUIREMENTS** ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #10, #215, #400 & #401 for additional information.

The Proposer is required to complete and execute the Pricing Schedule of Forms and provide same in the price proposal. Prices proposed should be exclusive of applicable state and local taxes imposed by state or local governments. The Contractor shall be liable for payment of all state and local taxes applicable to the complete bus as delivered. The MTS shall furnish to the Contractor a list of applicable state and local taxes imposed at the Due Date. MTS is exempt from the payment of Federal Excise and Transportation Taxes. The MTS shall be liable for any such state and local taxes applicable to the complete bus as delivered that are promulgated and become effective between the Due Date and the delivery date. Quantities listed are estimated quantities which shall be used for the purpose of evaluation.

Quantity. This indefinite delivery/indefinite quantity contract is for the purchase of buses and equipment as specified, and is effective for a five (5) year period. The quantities of buses and equipment specified in the contract are estimates only. All buses and equipment to be furnished under the contract shall be ordered by issuance of a purchase order.

Prices. MTS reserves the right to order buses and equipment over the five (5) year period beginning upon the date of contract award. The prices of such buses and equipment shall be the prices quoted below. These prices shall remain firm/fixed for any orders issued by MTS within a period of two hundred forty (240) days of contract award. The price(s) of any buses or equipment ordered by MTS after the initial two hundred forty (240) days firm/fixed price period shall be that quoted (Base Order Prices) plus any escalation which will be calculated based on the following formula which utilizes the U.S. Department of Labor/Bureau of Labor Statistics Producer Price Index ("PPI") Category 1411-06, "Heavy Duty Trucks Over 10,000 Pounds". The escalation in this index will be used to adjust the Base Order Prices. **However, in no event will the price(s) for any purchase order release exceed, by more than 4%, the price(s) that would have been in effect twelve (12) months prior to the date of the release.**

FORMULA:

Index Point Change	**Example**
PPI Index: Future Award Month:	141.1
Less PPI Index: Base Award Month:	137.6
Equals Index Point Change:	3.5
Index Percent Change	
Index Point Change	3.5
Divided by PPI Index: Base Award Month:	37.6
Equals	.0254
Results Multiplied by 100	.0254 x 100
Equals Percent Change	2.54%
Base Order Price	$1,000.00
Plus Percent Change (2.54% x $1,000)	25.40
Revised Price for Future Order	$1,025.40

Example. MTS awarded its contract in September, 2000, and has received its initial order of buses in June 2001. In July, 2001, MTS elects to purchase more buses for delivery in 2002. On the date of the purchase order (July, 2001), the then most current published data (in MTS's possession) for PPI-Category 1411-06 shows an index value of 141.1 (Future Award Month). The index for September, 2000 (Base Award Month) was 137.6. The percentage change in the index values from September, 2000, to July, 2001 would be 2.54%. The buses ordered in July, 2001, would be priced 2.54% higher than the base award price. This example assumes that the July, 2001 order contained no significant equipment modifications when compared with the original order.

Significant Equipment Modifications. If any significant equipment modifications are made, in compliance with Sections 2.2 through 2.4, under the Terms and Conditions of this contract, MTS and Contractor will enter into negotiations to determine the price of the equipment modification(s) and the impact of the modification(s) on the Base Order Price(s).

The following calculations will be used to convert the then-current price of the modification(s) to the value of the modification(s) on the date of the Base Order Price:

FORMULA:

Index Point Change

	Example
PPI Index: Future Equipment Modification Month:	141.1
Less PPI Index: Base Award Month:	137.6
Equals Index Point Change:	3.5

Index Percent Change

Index Point Change:	3.5
Divided by PPI Index: Base Award Month:	137.6
Equals:	.0254
Results Multiplied by 100:	.0254 X 100
Equals Percent Change:	2.54%
Future Equipment Modification Price:	$200.00
Less Percentage Change (2.54% X 200.00):	$ 5.08
Value of Equipment Modification During Base Award Month:	$194.92
Base Award Price:	$1,000.00
Plus Equipment Modification Cost:	$ 194.92
Equals Revised Base Order Price:	$1,194.92

All future releases, including the equipment modification(s), will be priced based upon the new revised Base Order Price.

F) PROPOSAL PACKAGING REQUIREMENTS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #402 for additional information.

Proposals shall be submitted in two (2) separately sealed packages. Each package shall be marked as specified below and shall contain all of the proposal documents for which the package is required to be marked and no other documents. These same requirements shall apply to any Best and Final Offers (BAFO) which may be requested.

PACKAGE NO. 1

TECHNICAL PROPOSAL:

35' and 40' Heavy Duty, Low-Floor, Transit Buses

1. Letter of Transmittal
2. Technical Proposal
3. References and Non-priced Information (if provided by Proposer)

SUBMITTED BY:

(Proposers Name and Address)

PACKAGE NO. 2

PRICE PROPOSAL:

35' and 40' Heavy Duty, Low-Floor, Transit Buses

1. Price and Proposal
2. Pricing Schedule
3. Supporting Data

SUBMITTED BY:

(Proposers Name and Address)

No cost, price or financial information of any kind shall be included in Package No. 1 or in any of the proposal documents that it will contain.

G) MODIFICATION OR WITHDRAWAL OF PROPOSALS

A modification of a proposal already received will be accepted by the MTS only if the modification is received prior to the Proposal Due Date, or is specifically requested by the MTS, or is made with a requested BAFO. All modifications shall be made in writing and executed and submitted in the same form and manner as the original proposal.

A Proposer may withdraw a proposal already received prior to the Proposal Due Date by submitting, in the same manner as the original proposal, to the MTS a written request for withdrawal executed by the Proposers authorized representative. After the proposal Due Date, a proposal may be withdrawn only if the MTS fails to award the Contract within the proposal validity period prescribed in "Due Date" (Section 1.7) or any agreed upon extension thereof. The withdrawal of a proposal does not prejudice the right of a Proposer to submit another proposal within the time set for receipt of proposals.

This provision for modification and withdrawal of proposals may not be utilized by a Proposer as a means to submit a late proposal and, as such, will not alter the MTS's right to reject a proposal.

1.10 PROPOSAL EVALUATION, NEGOTIATION AND SELECTION

Proposals will be evaluated, negotiated, selected and any award made in accordance with the criteria and procedures described below. The approach and procedures are those which are applicable to a competitive negotiated procurement whereby proposals are evaluated to determine which proposals are within a competitive range. Discussions and negotiations may then be carried out with Proposers within the competitive range, after which Best and Final Offers (BAFOs) may be requested. However, the MTS may select a proposal for award without any discussions or negotiations or request for any BAFO(s). Subject to the MTS's right to reject any or all proposals, the Proposer will be selected whose proposal is found to be most advantageous to the MTS, based upon consideration of the criteria of "Qualification Requirements" (Section 1.15) and "Proposal Evaluation Criteria" (Section 1.16) below.

1.11 OPENING OF PROPOSALS

Proposals will not be publicly opened. All proposals and evaluations will be kept strictly confidential throughout the evaluation, negotiation and selection process. Only the members of the Selection Committee and Evaluation Team and other MTS officials, employees and agents having a legitimate interest will be provided access to the proposals and evaluation results during this period.

1.12 EVALUATION TEAM

An Evaluation Team shall make all decisions regarding the evaluations, determination of responsible Proposers and the competitive range, negotiations and the selection of the Proposer, if any, that may be recommended for award of the Contract. The Evaluation Team will carry out the detailed evaluations and report all of its findings to the MTS CEO who will bring it to the MTS's Board of Directors for final approval.

1.13 PROPOSAL SELECTION PROCESS

The following describes the process by which proposals will be evaluated and a selection made for a potential award. Any such selection of a proposal by a responsible Proposer shall be made by consideration of only the criteria of "Qualification Requirements" (Section 1.15) and "Proposal Evaluation Criteria" (Section 1.16) below. Section 1.11 specifies the requirements for determining responsible Proposers, all of which must be met by a Proposer to be found qualified. Final determination of a Proposers qualification will be made based upon all information received during the evaluation and interview process and as a condition for award. Section 1.16 contains all of the evaluation criteria, and their relative order of importance, by which a proposal from a qualified Proposer will be considered for selection. An award, if made, will be to a responsible Proposer for a proposal which is found to be in the MTS's best interest, price and other evaluation criteria considered.

The procedures to be followed for these evaluations are provided in "Evaluation Procedures" (Section 1.17) below.

1.14 QUALIFICATION REQUIREMENTS

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #11 for additional information.

The following are the requirements for qualifying responsible Proposers. All of these requirements must be met; therefore, they are not listed by any particular order of importance. The Proposer of any proposal that the Selection Committee finds not to meet these requirements, and cannot be made to meet these requirements, may be determined by the Selection Committee not to be responsible and its proposal rejected. The requirements are as follows:

A) Sufficient financial strength and resources and capability to finance the work to be performed and complete the Contract in a satisfactory manner as measured by:

   1. Proposer's financial statements prepared in accordance with United States Generally Accepted Accounting Principles (GAAP) and audited by an independent certified public accountant authorized to practice in the jurisdiction of either the MTS or the Proposer.

2. Willingness of any parent company to provide the required financial guaranty evidenced by a letter of commitment signed by an officer of the parent company having the authority to execute the parent company guaranty.

3. Ability to obtain required insurance with coverage values that meet minimum requirements evidenced by a letter from an underwriter confirming that the Proposer can be insured for the required amount.

↑ A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #12 for additional information.

B) Evidence that the human and physical resources are sufficient to perform the contract as specified and assure delivery of all equipment within the time specified in the Contract, to include:

1. Engineering, management and service organizations with sufficient personnel and requisite disciplines, licenses, skills, experience, and equipment to complete the Contract as required and satisfy any engineering or service problems that may arise during the warranty period.

2. Adequate manufacturing facilities sufficient to produce and factory-test equipment on schedule.

3. A spare parts procurement and distribution system sufficient to support equipment maintenance without delays and a service organization with skills, experience, and equipment sufficient to perform all warranty and on-site work.

C) Evidence that Proposer is qualified in accordance with Section 3-Quality Assurance Provisions.

D) Evidence of satisfactory performance and integrity on contracts in making deliveries on time, meeting specifications and warranty provisions, parts availability, and steps Proposer took to resolve any judgments, liens, fleet defects history, and warranty claims. Evidence shall be by client references.

1.15 PROPOSAL EVALUATION CRITERIA

The following are the complete criteria, listed by their relative degree of importance, by which proposals from responsible Proposers will be evaluated and ranked for the purposes of determining any competitive range and to make any selection of a proposal for a potential award. Any exceptions, conditions, reservations, understandings or deviations must be explicitly and fully separately stated in your proposal. Any exceptions, conditions, reservations, understandings or deviations will be evaluated according to the respective evaluation criteria and/or sub-criteria which they affect and may cause the MTS to consider a proposal to be inside or outside the competitive range.

The criteria are listed numerically by their relative order of importance. However, certain criteria may have sub-criteria that are listed by their relative order of importance within the specific criterion they comprise. Also, certain sub-criteria may have sub-criteria that are listed by their relative degree of importance within the specific sub-criterion they comprise:

1. Price
2. Lead Time Contract Year (1) One and Delivery Schedule Proposed for 40' Buses Contract Years Two (2) through Five (5)
3. Technical Requirements, Qualifications and Resources, and Management Plan
4. Training

1.16 EVALUATION PROCEDURES

All aspects of the evaluations of the proposals and any discussions/negotiations, including documentation, correspondence and meetings, will be kept confidential during the evaluation and negotiation process.

Proposals will be analyzed for conformance with the instructions and requirements of the RFP and Contract documents. Proposals that do not comply with these instructions and do not include the required information may be rejected as insufficient or not be considered for the competitive range. MTS reserves the right to request a Proposer to provide any missing information and to make corrections. Proposers are advised that the detailed evaluation forms and procedures will follow the same proposal format and organization specified in "Instructions to Proposers" (Section 1.9). Therefore, Proposers shall pay close attention to and strictly follow all instructions. Submittal of a proposal will signify that the Proposer has accepted the whole of the Contract documents, except such conditions, exceptions, reservations or understandings explicitly, fully and separately stated in the proposal. Any such conditions, exceptions, reservations or understandings which do not result in the rejection of the proposal are subject to evaluation under the criteria of "Proposal Evaluation Criteria" (Section 1.15).

Evaluations will be made in strict accordance with all of the evaluation criteria and procedures specified in "Proposal Selection Process" (Section 1.13) above. The MTS will select for any award the highest ranked proposal from a responsible Proposer, qualified under "Qualification Requirements" (Section 1.14) which does not render this procurement financially infeasible and is judged to be most advantageous to the MTS based on consideration of the evaluation "Proposal Evaluation Criteria" (Section 1.15).

1.17 EVALUATIONS OF COMPETITIVE PROPOSALS

A) Qualification of Responsible Proposers.
Proposals will be evaluated in accordance with requirements of "Qualification Requirements" (Section 1.14) to determine the responsibility of Proposers. Any proposals from Proposers whom the MTS finds not to be responsible and finds cannot be made to be responsible may not be considered for the competitive range. Final determination of a Proposer's responsibility will be made upon the basis of initial information submitted in the proposal, any information submitted upon request by the MTS, information submitted in a BAFO and information

resulting from MTS inquiry of Proposer's references and its own knowledge of the Proposer.

B) Detailed Evaluation of Proposals and Determination of Competitive Range. Each proposal will be evaluated in accordance with the requirements and criteria specified in "Proposal Selection Process" (Section 1.13).

The following are the minimum requirements that must be met for a proposal to be considered for the competitive range. All of these requirements must be met; therefore, they are not listed by any particular order of importance. Any proposal that the MTS finds not to meet these requirements, and may not be made to meet these requirements, may be determined by the MTS to not be considered for the competitive range. The requirements are as follows:

1. Proposer is initially evaluated as responsible in accordance with the requirements of "Qualification Requirements" (Section 1.14), or that the MTS finds it is reasonable that the proposal can be modified to meet said requirements. Final determination of responsibility will be made with final evaluations.

2. Proposer has followed the instructions of the RFP and included sufficient detail information, such that the proposal can be evaluated. Any deficiencies in this regard must be determined by the MTS to be either a defect that the MTS will waive in accordance with "Acceptance/Rejection of Proposals" (Section 1.0) or that the proposal can be sufficiently modified to meet these requirements.

3. Proposal price would not render this procurement financially infeasible, or it is reasonable that such proposal price might be reduced to render the procurement financially feasible.

The MTS will carry out and document its evaluations in accordance with the criteria and procedures of "Proposal Selection Process" (Section 1.13). Any extreme proposal deficiencies which may render a proposal unacceptable will be documented. The MTS will make specific note of questions, issues, concerns and areas requiring clarification by Proposers and to be discussed in any meetings with Proposers which the MTS finds to be within the competitive range.

Rankings and spreads of the proposals against the evaluation criteria will then be made by the MTS as a means of judging the overall relative spread between proposals and of determining which proposals are within the competitive range, or may be reasonably made to be within the competitive range.

C) Proposals not within the Competitive Range. Proposers of any proposals that have been determined by the MTS as not in the competitive range, and cannot be reasonably made to be within the competitive range, will be notified in writing, including the shortcomings of their proposals.

D) Discussions with Proposers in the Competitive Range. The Proposers whose proposals are found by the MTS to be within the competitive range, or may be reasonably made to be within the competitive range, will be notified and any questions and/or requests for clarifications provided to them in writing. Each such Proposer may be invited for a private interview(s) and discussions with the MTS to discuss answers to written or oral questions, clarifications, and any facet of its proposal.

In the event that a proposal, which has been included in the competitive range, contains conditions, exceptions, reservations, deviations, or understandings to any Contract requirements, said conditions, exceptions, reservations, deviations, or understandings may be negotiated during these meetings. However, the MTS shall have the right to reject any and all such conditions and/or exceptions, and instruct the Proposer to amend its proposal and remove said conditions and/or exceptions; and any Proposer failing to do so may cause the MTS to find such proposal to be outside the competitive range.

No information, financial or otherwise, will be provided to any Proposer about any of the proposals from other Proposers. Proposers will not be given a specific price or specific financial requirements they must meet to gain further consideration, except that proposed prices may be considered to be too high with respect to the marketplace or unacceptable. Proposers will not be told of their rankings among the other Proposers.

E) Factory and Site Visits. The MTS reserves the right to conduct factory visits to inspect the Proposer's facilities and/or other transit systems which the Proposer has supplied the same or similar equipment.

F) Best and Final Offers (BAFO). After all interviews have been completed, each of the Proposers in the competitive range will be afforded the opportunity to amend its proposal and make its BAFO. The request for BAFOs shall include:

1. Notice that discussions/negotiations are concluded;

2. Notice that this is the opportunity for submission of a BAFO;

3. A common date and time for submission of written BAFOs, allowing a reasonable opportunity for preparation of the written BAFOs;

4. Notice that if any modification to a BAFO is submitted, it must be received by the date and time specified for the receipt of BAFOs and is subject to the late submissions, modifications, and withdrawals of proposals provisions of the Request for Proposal;

5. Notice that if Proposers do not submit a BAFO or a notice of withdrawal and another BAFO, their immediate previous Offer will be construed as their BAFO.

Any modifications to the initial proposals made by a Proposer in its BAFO shall be identified in its BAFO. BAFOs will be evaluated by the MTS according to the same requirements and criteria as the initial proposals "Proposal Selection Process" (Section 1.13). The MTS will make appropriate adjustments to the initial scores for any sub-criteria and criteria which have been affected by any proposal modifications made by the BAFOs. These final scores and rankings within each criteria will again be arrayed by the MTS and considered according to the relative degrees of importance of the criteria defined in "Proposal Evaluation Criteria" (Section 1.15).

The MTS will then choose that proposal which it finds to be most advantageous to the MTS based upon the evaluation criteria. The results of the evaluations and the selection of a proposal for any award will be documented in a report.

The MTS reserves the right to make an award to any Proposer whose proposal it judges to be most advantageous to the MTS based upon the evaluation criteria, without conducting any written or oral discussions with any Proposers or solicitation of any BAFOs.

1.18 CONFIDENTIALITY OF PROPOSALS

Access to government records is governed by the Laws of the State of California. Except as otherwise required by the Laws of the State of California, the MTS will exempt from disclosure proprietary information, trade secrets and confidential commercial and financial information submitted in the proposal. Any such proprietary information, trade secrets or confidential commercial and financial information which a Proposer believes should be exempted from disclosure shall be specifically identified and marked as such. Blanket-type identification by designating whole pages or sections as containing proprietary information, trade secrets or confidential commercial and financial information will not assure confidentiality. The specific proprietary information, trade secrets or confidential commercial and financial information must be clearly identified as such.

The Proposer may (or shall) submit proprietary information, trade secrets or confidential commercial and financial information, which an Proposer believes should be exempted from disclosure, in a separate volume specifically identified and marked as such as an appendix to the proposal

Upon a request for records from a third party regarding this proposal the MTS will notify in writing the party involved. The party involved must respond within twenty (20) calendar days with the identification of any and all "proprietary, trade secret, or confidential commercial or financial" information and the party involved shall indemnify the MTS's defense costs associated with its refusal to produce such identified information; otherwise, the requested information may be released.

The MTS shall employ sound business practices no less diligent than those used for the MTS's own confidential information to protect the confidence of all licensed technology, software, documentation, drawings, schematics, manuals, data and other information and material provided by Proposers and the Contractor pursuant to the Contract which contain confidential commercial or financial information, trade secrets or proprietary information as defined in or pursuant to the Laws of the State of California against disclosure of such information and material to third parties except as permitted by the

Contract. The Contractor shall be responsible for ensuring that confidential commercial or financial information, trade secrets or proprietary information, with such determinations to be made by the MTS in its sole discretion, bears appropriate notices relating to its confidential character.

1.19 RESPONSE TO PROPOSALS

A) Acceptance/Rejection of Proposals

The MTS reserves the right to reject any or all proposals for sound business reasons, to undertake discussions with one or more Proposers, and to accept that proposal or modified proposal which, in its judgment, will be most advantageous to the MTS, price and other evaluation criteria considered. The MTS reserves the right to consider any specific proposal which is conditional or not prepared in accordance with the instructions and requirements of this RFP to be noncompetitive. The MTS reserves the right to waive any defects, or minor informalities or irregularities in any proposal which do not materially affect the proposal or prejudice other Proposers.

If there is any evidence indicating that two or more Proposers are in collusion to restrict competition or otherwise engaged in anti-competitive practices, the proposals of all such Proposers shall be rejected and such evidence may be a cause for disqualification of the participants in any future solicitations undertaken by the MTS.

The MTS may reject a proposal that includes what MTS deems as unacceptable conditions, exceptions, reservations, deviations or understandings.

1.20 SINGLE PROPOSAL RESPONSE

If only one proposal is received in response to this RFP and it is found by the MTS to be acceptable, a detailed price/cost proposal may be requested of the single Proposer. A price or cost analysis, or both, possibly including an audit, may be performed by or for the MTS of the detailed price/cost proposal in order to determine if the price is fair and reasonable. The Proposer has agreed to such analysis by submitting a proposal in response to this RFP. A price analysis is an evaluation of a proposed price that does not involve an in-depth evaluation of all the separate cost elements and the profit factors that comprise a Proposer's price proposal. It should be recognized that a price analysis through comparison to other similar procurements must be based on an established or competitive price of the elements used in the comparison. The comparison must be made to a purchase of similar quantity, involving similar specifications and in a similar time frame. Where a difference exists, a detailed analysis must be made of this difference and costs attached thereto. Where it is impossible to obtain a valid price analysis, it may be necessary to conduct a cost analysis of the proposed price. A cost analysis is a more detailed evaluation of the cost elements in the Proposer's Offer to perform. It is conducted to form an opinion as to the degree to which the proposed costs represent what the Proposer's performance should cost. A cost analysis is generally conducted to determine whether the Proposer is applying sound management in proposing the application of resources to the contracted effort and whether costs are allowable, allocable and reasonable. Any such analyses and the results there from shall not obligate the MTS to accept such a single proposal; and the MTS may reject such proposal at its sole discretion.

1.21 CANCELLATION OF PROCUREMENT

The MTS reserves the right to cancel the procurement, for sound business reasons, at any time before the Contract is fully executed and approved on behalf of the MTS Board of Directors.

1.22 AVAILABILITY OF FUNDS

This procurement is subject to the availability of funding in the form of a grant from the Federal Government and or Local Government. The MTS's obligation hereunder is contingent upon the availability of appropriated funds from which payment for the Contract purposes can be made. No legal liability on the part of the MTS for any payment shall arise until funds are made available to the Contract Officer for this Contract and until the Contractor receives notice of such availability, to be confirmed in writing by the Contract Officer. Any award of Contract hereunder will be conditioned upon said availability of funds for the Contract.

1.23 PROTESTS

Any protests by an interested party regarding this procurement shall be made in accordance with protest procedure of the MTS.

1 . Protests Prior to Proposal Due Date

Following the advertisement of this formal RFP, prior to the issue, and prior to the due date, a protest may be filed with MTS. Protests must be in writing and received by MTS within **ten (10) calendar days** after the first advertisement of the RFP. The Chief Executive Officer or his designee will notify all Proposers that a protest has been filed, and will issue a written decision on the protest prior to the due date. A protest may be renewed by refilling the protest with MTS within **fifteen (15) calendar days** from the postmark date of the notice of intent to award.

2. Protests Received After Proposal Due Date

MTS will evaluate all proposals and determine the best-qualified proposers. A notice of intent to award will be mailed to all proposers. Any protest to the notice must be in writing and received by MTS within **fifteen (15) calendar days** from the postmark date of the notice.

3. Protest Contents

The protestor must demonstrate or establish a clear violation of a specific law or regulation, e.g., a violation of the prohibition against exclusionary or unduly restrictive specifications. The protest must contain a full and complete written statement of the grounds for protest and all supporting documentation. MTS may, but is not obligated to, request additional information concerning the grounds for protest.

4. Replies to Protests

MTS' Protest Committee will review all protests as soon as possible. All material submitted by the protestor will be considered. Such material will not be withheld from any interested party outside of MTS or any agency, which may be involved with the procurement except to the extent that the withholding of information is permitted or required by law or regulation. If the protestor considers that the protest contains proprietary material, which should be withheld, a statement advising of this fact may be affixed to the front page of the protest document and alleged proprietary information shall be so identified wherever it appears.

MTS' Protest Committee will reply to all protests in writing with its determination.

5. Request for Protest Reconsideration

Upon receipt of MTS' decision, the protestor may file a request for protest reconsideration. A request for protest reconsideration must be directed to the Chief Executive Officer in writing and received within **five (5) full working days** from the postmark date of the reply from MTS.

All protests shall contain a full and complete written statement specifying in detail the grounds of the protest and the facts supporting the protest. Protestors shall have an opportunity to appear and be heard before the Board prior to the opening of the procurement solicitation in the case of protests based on the content of the procurement solicitation or prior to final award in the case of protests based on other grounds or the renewal of protests based on the content of the procurement solicitation.

The decision of the protest by the Board shall be in writing and constitutes a final administrative decision for purposes of judicial review pursuant to Section 1094.6 of the Code of Civil Procedure.

6. FTA review of Protests

A. Review of Protests

1. FTA will only review protests regarding the alleged failure of the subgrantee to have written protest procedures or alleged failure to follow such procedures.

2. Alleged violations on other grounds are under the jurisdiction of the appropriate state or local administrative or judicial authorities. Alleged violations of a specific federal requirement that provides an applicable complaint procedure shall be submitted and processed in accordance with that federal regulation. See, e.g., Buy America Requirements, 49 C.F.R. Part 661 (Section 661.15); Participation by Minority Business Enterprise in Department of Transportation Programs, 49 C.F.R. Section 23.73.

3. FTA will only review protests submitted by an interested party as defined in paragraph C, below.

B. Remedy

FTA's remedy for a subgrantee's failure to have written protest procedures or failure to follow such procedure is limited to requiring the subgrantee to develop such procedures, if necessary, and follow such procedures in reviewing the protest at issue, if the subgrantee desires FTA financial participation in the contract in question. In instances where a grantee has awarded to another Proposer prior to FTA's decision on the protest, FTA may refuse to participate in funding the contract.

C. Definitions.

For the purposes of this Section the following definitions apply:

1. "Days" refers to working days of the Federal Government.

2. "File" or "submit" refers to the date of receipt by FTA.

3. "Interested party" means an actual or prospective Proposer whose direct economic interest would be affected by the award of the contract or by failure to award the contract.

4. "Proposal" includes the term "offer" or "proposal" as used in the context of negotiated procurements.

D. Time for Filing.

1. Protestors shall file a protest with FTA not later than **five (5) days** after a final decision is rendered under the subgrantee's protest procedure. In instances where the protestor alleges that the subgrantee failed to make a final determination on the protest, protestors shall file a protest with FTA not later than **five (5) days** after the protestor knew or should have known of the subgrantee's failure to render a final determination on the protest.

2. Subgrantees shall not award a contract for **five (5) days** following its decision on a Proposal protest except in accordance with the provisions and limitations of subparagraph H. After **five (5) days**, the subgrantee shall confirm with the FTA that the FTA has not received a protest on the contract in question.

E. Submission of Protest to the FTA

1. Protests should be filed with the appropriate FTA Regional Office with a concurrent copy to the subgrantee.

2. The protest filed with the FTA shall:

   (a) Include the name and address of the protestor.

   (b) Identify the subgrantee, project number, and the number of the contract solicitation.

(c) Contain a statement of the grounds for protest and any supporting documentation. This should detail the alleged failure to follow protest procedures or the alleged failure to have procedures and be fully supported to the extent possible.

(d) Include a copy of the local protest filed with the subgrantee and a copy of the subgrantee's decision, if any.

F. Grantee response.

1. FTA shall notify the subgrantee in a timely manner of the receipt of a protest. FTA shall instruct the subgrantee to notify the Protestor of the protest if award has been made or, if no award has been made, to notify all interested parties. The subgrantee shall notify all who receive such notice that they may communicate further directly with the FTA.

2. The subgrantee shall submit the following information not later than **ten (10) days** after receipt of notification by FTA of the protest:

(a) a copy of the subgrantee's protest procedure;

(b) a description of the process followed concerning the protestor's protest; and

(c) any supporting documentation.

3. The subgrantee shall provide the protestor with a copy of the above submission.

G. Protestor comments. The protestor must submit any comments on the subgrantee's submission not later than ten days after the protestor's receipt of the subgrantee's submission.

H. Withholding of Award. When a protest has been timely filed with the subgrantee before award, the subgrantee shall not make an award prior to **five (5) days** after the resolution of the protest, or if a protest has been filed with the FTA, during the pendency of that protest, unless the subgrantee determines that:

1. The items to be procured are urgently required;

2. Delivery or performance will be unduly delayed by failure to make the award promptly; or

3. Failure to make prompt award will otherwise cause undue harm to the grantee or the Federal Government.

In the event that the subgrantee determines that the award is to be made during the **five (5) day** period following the local protest decision or the pendency of a protest, the subgrantee shall notify the FTA prior to making such award. FTA will not review the sufficiency of the subgrantee's determination to award during the pendency of a protest prior to FTA's Proposal protest decision. FTA reserves the right not to participate in the funding of any contract awarded during the pendency of a protest.

l. FTA Action. Upon receipt of the submissions, FTA will either request further information or a conference among the parties, or will render a decision on the protest.

Failure to comply with the above protest procedures will render a protest untimely and/or inadequate and shall result in its rejection.

1.24 NOTIFICATION OF AWARD AND DEBRIEFING

Proposers who submit a proposal in response to the RFP shall be notified in writing regarding the firm awarded the contract. Such notification shall be made within three (3) days of the date the contract is awarded.

Proposers who were not awarded the contract may obtain a prompt explanation concerning the strengths and weaknesses of their proposal. Unsuccessful Proposers who wish to be debriefed, must request the debriefing in writing and it must be received by the MTS within three (3) days of the notification of the contract award.

SECTION 2

2.0 DEFINITIONS - THE FOLLOWING TERMS ARE USED IN THIS DOCUMENT

Authorized Signer. The person who is executing this Contract on behalf of the Proposer/ Contractor and who is authorized to bind the Proposer/Contractor.

Best and Final Offer (BAFO). The last Offer made by a Proposer. If a BAFO is not specifically requested by the MTS, or if the Proposer does not timely respond to a request for BAFO, the most recent, current Offer is the BAFO.

MTS. The San Diego Metropolitan Transit System.

Contract. The Offer and its acceptance by the MTS as manifested by the contract documents specified in "Contract Documents" (Section 2.1.B).

Contract Officer. The person who is executing this Contract on behalf of the MTS, and who has authority over this procurement except as limited herein.

Conditional Acceptance. Acceptance of supplies or services that do not conform to the contract quality requirements, or are otherwise incomplete, that the contractor is required to correct or otherwise complete by a specified date.

Contractor. The successful Proposer who is awarded a Contract for providing all buses and equipment described in the contract documents.

Defect. Patent or latent malfunction or failure in manufacture, installation, or design of any component or subsystem.

Due Date. The date and time by which Offers (proposals or bids) must be received by the MTS as specified in "Instructions to Proposers" (Section 1.9).

Offer. A promise, if accepted, to deliver equipment and services according to the underlying solicitation of the MTS documented using the prescribed form in the solicitation, including any bid or proposal or Best and Final Offer.

Proposer. A legal entity which makes an Offer, including a bidder or proposer.

Related Defect. Damage inflicted on any component or subsystem as a direct result of a separate defect.

Solicitation. MTS's Request for Proposals.

Supplier or Subcontractor. Any manufacturer, company, or MTS providing units, components, or subassemblies for inclusion in the bus. Supplier items shall require qualification by type and acceptance tests in accordance with requirements defined in Part 3: Quality Assurance Provisions.

Work. Any and all labor, supervision, services, materials, machinery, equipment, tools, supplies, and facilities called for by the Contract and necessary to the completion thereof.

2.1 CONTRACT AND MODIFICATIONS

A) CONTRACT AWARD AND EXECUTION

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #13 for additional information.

The acceptance of an Offer for award, if made, shall be evidenced by a letter of notification that will be sent registered mail to the Proposer whose Offer is accepted. No other act by the MTS shall evidence acceptance of an Offer. Such notice shall obligate said Proposer to commence performance under the Contract as specified in "Production of Documents" (Section 2.36).

The MTS's intent is to enter into a contract for a first article bus, notice to proceed for the initial order production of buses and options that may be exercised at the MTS's discretion, for possible future deliveries. The process shall consist of the following steps:

a) Proposal, evaluation and award for the production of a first article bus and intent for first production award based upon evaluation and successful acceptance, which will require extensive testing of up to sixty (60) days prior to acceptance of the first article.

b) Upon acceptance of the first article bus, the MTS will issue a written "Notice to Proceed" for the initial production and delivery.

c) Upon acceptance of the first production, the MTS would determine whether to exercise option one for the next production of buses.

d) Upon the decision of the MTS, a written notice will be sent to the contractor informing them of the decision to continue ("Notice to Proceed"), or not.

e) The MTS, at its sole discretion, may choose to exercise the options identified in the agreement. Each option in this RFP would go through the same exercise prior to any options being exercised.

B) CONTRACT DOCUMENTS

The Contract consists of the following:

a) Contractor's Best and Final Offer and MTS's Notice of Award
b) Standard Procurement Agreement, Standard Conditions Procurement and Federal Requirements
c) Quality Assurance Provisions
d) Warranty Provisions
e) Technical Specifications
f) Addenda – As issued
g) Contractor's Proposal including any modifications explicitly incorporated in Contractor's Best and Final Offer

In case of any conflict among these documents where the parties' intended resolution is not clear, the order of precedence shall be:

h) Addenda issued by MTS
i) Sections 5 and 6, Technical Specifications
j) Sections 2, 3 and 4 of this document
k) Standard Procurement Agreement, Standard Conditions Procurement, and Federal Requirements
l) Contractor's Offer
m) Contractor's Proposal

2.2 CONTRACTOR CHANGES

Any proposed change in this Contract shall be submitted to MTS for approval.

2.3 WRITTEN CHANGE ORDERS

Oral change orders are not permitted. No change in this Contract shall be made unless the Contract Officer gives prior written approval therefore. The Contractor shall be liable for all costs resulting from, and/or for satisfactorily correcting, any specification change not properly ordered by written modification to the Contract and signed by the Contract Officer.

2.4 CHANGE ORDER PROCEDURE

As soon as reasonably possible but no later than thirty (30) calendar days after receipt of the written change order to modify the Contract, the Contractor shall submit to the Contract Officer a detailed price and schedule proposal for the work to be performed. This proposal shall be accepted or modified by negotiations between the Contractor and the Contract Officer. At that time a detailed modification shall be executed in writing by both parties. Disagreements that cannot be resolved within negotiations shall be resolved in accordance with the Contract Disputes clause. Regardless of any disputes, the Contractor shall proceed with the work ordered.

2.5 PRICE ADJUSTMENT FOR REGULATORY CHANGES ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #216 for additional information.

If price adjustment is indicated, either upward or downward, it shall be negotiated between the MTS and the Contractor for changes that are mandatory as a result of legislation or regulations that are promulgated and become effective after the Due Date. Such price adjustment may be audited, where required.

2.6 PARTIES

The parties to the contract are MTS as defined in "Definitions", Section 2.0 and the selected Proposer.

2.7 SUCCESSION

The Contract will be binding on the parties, their successors, and assigns.

2.8 ASSIGNMENT AND SUBCONTRACTING

MTS wishes to establish an Agreement with a Contractor to provide 35' and 40' heavy duty low floor transit buses. The Agreement resulting from this procurement between MTS and the Contractor would allow for the assignment of all or part of the specified 35' and 40' heavy duty low floor transit buses to any other transit agency or government agency. When buses included in the scope of the Agreement resulting from this procurement are needed by another transit or government agency, the Agreement may be assigned to that agency upon mutual agreement between MTS and the affected agency.

In addition, neither party will assign or subcontract its rights or obligations under the Contract without prior written permission of the other party, and no such assignment or subcontract be effective until approved in writing by the other party.

2.9 SPECIFICATION AND OFFER OMISSIONS

Notwithstanding the provision of drawings, technical specifications, or other data by the MTS, the Contractor shall have the responsibility of supplying all parts and details required to make the bus complete and ready for service even though such details may not be specifically mentioned in the drawings and specifications. Fare collection equipment, communication equipment, and other items that are installed by the MTS shall not be the responsibility of the Contractor unless they are included in this Contract.

Any request, condition, exception, reservation, understanding or other deviation by Contractor not separately stated as required by "Instructions to Proposers" (Section 1.9) by completing the specified form(s) shall be invalid and shall not be binding on the MTS.

2.10 TERMINATION OF CONTRACT FOR CONVENIENCE

Performance under this agreement may be terminated by MTS in accordance with this clause in whole or, from time-to-time, in part, whenever MTS shall elect. Any such termination shall be effected by delivery to Contractor of a Notice of Termination specifying the extent to which performance under this agreement is terminated, and the date upon which such termination becomes effective. Upon receipt of any such notice, Contractor shall, unless the notice requires otherwise:

A. immediately discontinue performance on the date and to the extent specified in the notice;

B. place no further orders for materials other than as may be necessarily required for completion of such portion of the agreement that is not terminated;

C. promptly make every reasonable effort to either obtain cancellation on terms satisfactory to MTS of all orders to Contractor's suppliers to the extent they relate to the performance of that portion terminated, or upon MTS's concurrence assign to MTS those orders; and

D. assist MTS, upon request, in the maintenance, protection, and disposition of property acquired by MTS under this agreement.

If claimed in writing within thirty (30) calendar days after Notice of Termination, MTS will pay to Contractor an equitable adjustment to include (without duplication of any item):

A. all amounts due and not previously paid to Contractor for goods completed in accordance with this agreement prior to such notice;

B. a reasonable amount for any goods and materials then in production; provided that no such adjustment be made in favor of Contractor with respect to any goods which are Contractor's standard stock;

C. costs of settling and paying supplier's claim arising out of the canceled orders; and

D. a reasonable profit for costs incurred in the performance of that portion terminated; provided, however, that if it appears that Contractor would have sustained a loss on the entire agreement had it been completed, no profit shall be included.

The total sum to be paid to Contractor under this clause shall not exceed the total order price as reduced by the amount of payments otherwise made, and as further reduced by the order price of that portion not terminated, and will not include any consideration for loss of anticipated profits on the terminated portion all claims for which seller agrees to waive.

2.11 TERMINATION FOR DEFAULT ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #16 for additional information.

MTS may terminate the whole or any part of Contractor's performance in any one of the following circumstances:

A. if Contractor fails to make delivery or fails to perform within the time specified herein or any extension thereof; or

B. if Contractor delivers nonconforming goods; or

C. if Contractor fails to perform in accordance with the provisions of this agreement, or so fails to make progress as to endanger performance of this agreement in accordance with its terms.

In the event of any such failure, MTS will provide Contractor with notice of the nature of the failure and MTS's intention to terminate for default. In the event Contractor does not cure such failure within ten (10) calendar days of such notice, MTS will provide Contractor with written Notice of Termination for Default.

In the event MTS terminates as provided herein, MTS may procure, upon such terms, and in such manner as MTS may deem appropriate, supplies or services similar to those so terminated, and Contractor shall be liable to MTS for any excess costs for such similar supplies or services; and Contractor shall continue the performance of this agreement to the extent not terminated under the provisions of this clause.

In the event of Contractor's default, Contractor agrees to mitigate damages by cooperating with MTS in transferring information and disposing of goods in process or MTS's materials as MTS may reasonably request. If after Notice of Termination for Default it is determined for any reason that Contractor was not in default under the provisions of this clause, or that the default was excusable under the provisions of this clause, the rights and obligations of the parties shall be the same as if the Notice of Termination had been issued pursuant to the Termination for Convenience clause.

2.12 DISPUTES

Disputes - Disputes arising in the performance of this Contract which are not resolved by agreement of the parties shall be decided in writing by the authorized representative of MTS's General Counsel. This decision shall be final and conclusive unless within ten (10) days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to the Chief Executive Officer. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the Chief Executive Officer shall be binding upon the Contractor and the Contractor shall abide be the decision.

Performance During Dispute - Unless otherwise directed by the MTS, Contractor shall continue performance under this Contract while matters in dispute are being resolved.

Claims for Damages - Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefore shall be made in writing to such other party within a reasonable time after the first observance of such injury of damage.

Remedies - Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the MTS and the Contractor arising out of or relating to this agreement or its breach will be decided by mediation if the parties mutually agree, or in a court of competent jurisdiction within the State of California, County of San Diego.

Rights and Remedies - The duties and obligations imposed by the Contract Documents and the rights and remedies available there under shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the MTS or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach there under, except as may be specifically agreed in writing.

2.13 COMMUNICATIONS

Communications in connection with this Contract shall be in writing and shall be delivered by any of the following methods; personally; or e-mail; or by facsimile; or by regular, registered, or certified mail addressed to the officer(s) or employee(s) of the MTS and of the Contractor designated to receive such communications. Telephone calls may be used to expedite communications but shall not be official communication unless confirmed in writing.

2.14 BUS DELIVERY PROCEDURE

Delivery of buses shall be determined by signed receipt of the MTS's designated agent(s), at the following point of delivery and may be preceded by a cursory inspection of the bus:

100 16TH Street, San Diego, CA 92101
Attention: Maintenance Department

2.15 DELIVERY SCHEDULE ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #403 for additional information.

The buses shall be delivered at a rate of at least four (4) buses per week, not to exceed nine (9) buses per week. The maximum time allotted to complete the delivery will be calculated at the rate of four (4) buses a week. Hours of delivery shall be 8:00 a.m. through 3:00 p.m., Monday through Friday. Contractor's failure to meet the delivery schedule herein may result in "Liquidated Damages" (as described in Section 2.25).

2.16 PRE-DELIVERY TESTS AND INSPECTIONS

The pre-delivery tests and inspections shall be performed at or near the Contractor's plant; they shall be performed in accordance with the procedures defined in Section 3, "Quality Assurance Provisions," and they may be witnessed by the resident inspector. When the bus passes these tests and inspections, the resident inspector shall authorize release of the bus.

2.17 ASSUMPTION OF RISK OF LOSS

The MTS shall assume risk of loss of the bus on delivery, as defined in "Bus Delivery Procedure" (Section 2.14), if delivered by common carrier or driveway, or on release to the MTS's drivers at the Contractor's plant. Prior to this delivery or release, the Contractor shall have risk of loss of the bus, including any damages sustained during the common carrier or drive-away operation regardless of the status of title or any payments related to the bus. Drivers shall keep a maintenance log enroute and it shall be delivered to the MTS with the bus.

2.18 ACCEPTANCE OF BUS

Within thirty (30) calendar days after arrival at the designated point of delivery, the bus shall undergo the MTS tests defined in Section 3, "Quality Assurance Provisions." If the bus passes these tests or if the MTS does not notify Contractor of non-acceptance within thirty (30) calendar days after delivery, acceptance of the bus by the MTS occurs on the thirtieth day after delivery. Acceptance may occur earlier if the MTS notifies the Contractor of early acceptance or places the bus in revenue service. If the bus fails these tests, it shall not be accepted until the repair procedures defined in "Repairs After Nonacceptance" (Section 2.20) have been carried out and the bus retested until it passes.

2.19 CONDITIONAL ACCEPTANCE

If the bus fails these tests, it may be "Conditionally Accepted" (as defined in 2.0) or it shall not be accepted until the repair procedures defined in "Repairs After Nonacceptance" (Section 2.20) have been carried out and the bus retested until it passes.

2.20 REPAIRS AFTER NONACCEPTANCE

The Contractor or its designated representative shall perform the repairs after non-acceptance. If the Contractor fails or refuses to make the repairs within five (5) days, then the work may be done by the MTS's personnel with reimbursement by the Contractor.

2.21 REPAIRS BY CONTRACTOR ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #18 for additional information.

After non-acceptance of the bus, the Contractor must begin work within five (5) working days after receiving notification from the MTS of failure of acceptance tests. The MTS shall make the bus available to complete repairs timely with the Contractor repair schedule.

The Contractor shall provide, at its own expense, all spare parts, tools, and space required to complete the repairs. At the MTS's option, the Contractor may be required to remove the bus from the MTS's property while repairs are being affected. If the bus is removed from the MTS's property, repair procedures must be diligently pursued by the Contractor's representatives, and the Contractor shall assume risk of loss while the bus is under its control.

2.22 REPAIRS BY MTS

A) Parts Used. If the MTS performs the repairs after non-acceptance of the bus, it shall correct or repair the defect and any related defects using Contractor-specified parts available from its own stock or those supplied by the Contractor specifically for this repair. Monthly reports of all repairs covered by this procedure shall be submitted by the MTS to the Contractor for reimbursement or replacement of parts.

B) Contractor Supplied Parts. If the Contractor supplies parts for repairs being performed by the MTS after non-acceptance of the bus, these parts shall be shipped prepaid to the MTS from any source selected by the Contractor within ten (10) working days after receipt of the request for said parts.

C) Return of Defective Components. The Contractor may request that parts covered by this provision to be returned to the manufacturing plant. The total costs for this action shall be paid by the Contractor.

D) Reimbursement for Labor. The MTS shall be reimbursed by the Contractor for labor. The amount shall be determined by multiplying the number of man-hours actually required to correct the defect by a per hour, 5M mechanic, straight wage rate, twenty-five (25%) percent fringe benefits, plus fifty-eight (58%) percent overhead, plus the cost of towing in the bus if such action was necessary. These

wage and fringe benefits rates shall not exceed the rates in effect in the MTS's service garage at the time the defect correction is made.

E) Reimbursement for Parts. The MTS shall be reimbursed by the Contractor for defective parts that must be replaced to correct the defect. The reimbursement shall include taxes where applicable and fifteen (15%) percent handling costs.

2.23 CONTRACTOR'S DELAY ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #19 for additional information.

If the Contractor is delayed at any time during the progress of the work by the neglect or failure of the MTS or by a cause described below, then the time for completion and/or affected delivery date(s) shall be extended by the MTS subject to the following conditions:

A) The cause of the delay arises after the notice of award and neither was nor could have been anticipated by the Contractor by reasonable investigation before such award;

B) The Contractor demonstrates that the completion of the Work and/or affected delivery(s) will be actually and necessarily delayed;

C) The effect of such cause cannot be avoided or mitigated by the exercise of all reasonable precautions, efforts and measures whether before or after the occurrence of the cause of delay; and

D) The Contractor makes written request and provides other information to the MTS as described in "Notification of Contractor Delay" (Section 2.23).

A delay meeting all the conditions of this section shall be deemed an excusable delay. Any concurrent delay which does not constitute an excusable delay shall not be the sole basis for denying a request hereunder.

None of the above shall relieve the Contractor of any liability for the payment of any liquidated damages owing from a failure to complete the Work by the time for completion that the Contractor is required to pay pursuant to "Liquidated Damages" (Section 2.25) for delays occurring prior to, or subsequent to the occurrence of an excusable delay.

The MTS reserves the right to rescind or shorten any extension previously granted, if subsequently the MTS determines that any information provided by Contractor in support of a request for an extension of time was erroneous; provided however, that such information or facts, if known, would have resulted in a denial of the request for an excusable delay. Notwithstanding the above, the MTS will not rescind or shorten any extension previously granted if the Contractor acted in reliance upon the granting of such extension and such extension was based on information which, although later found to have been erroneous, was submitted in good faith by the Contractor.

2.24 NOTIFICATION OF CONTRACTOR DELAY

Notwithstanding "Contractor's Delay" (Section 2.23), no extension or adjustment of time shall be granted unless (1) written notice of the delay is filed with the MTS within fourteen (14) calendar days after the commencement of the delay, and (2) a written application therefore, stating in reasonable detail the causes, the effect to date and the probable future effect on the performance of the Contractor under the Contract, and the portion or portions of the Work affected, is filed by the Contractor with the MTS within thirty (30) calendar days after the commencement of the delay. No such extension or adjustment shall be deemed a waiver of the rights of either party under this Contract. The MTS shall make its determination within thirty (30) calendar days after receipt of the application.

2.25 LIQUIDATED DAMAGES ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #20 for additional information.

It is mutually understood and agreed by and between the parties to the Contract that time is of the essence with respect to the completion of the Work and that in case of any failure on the part of the Contractor to complete the Work within the time specified in "Delivery Schedule" (Section 2.15), except for any excusable delays as provided in ""Unavoidable Delays" (Section 2.23 and 2.24), or any extension thereof, the MTS will be damaged thereby. The amount of said damages, being difficult if not impossible of definite ascertainment and proof, it is hereby agreed that the amount of such damages due the MTS shall be fixed at $250.00 per calendar day per bus not delivered in substantially as good condition as inspected by the MTS at the time released for shipment.

The Contractor hereby agrees to pay the aforestated amounts as fixed, agreed and liquidated damages, and not by way of penalty, to the MTS and further authorizes the MTS to deduct the amount of the damages from money due the Contractor under the Contract, computed as aforesaid. If the monies due the Contractor are insufficient or no monies are due the Contractor, the Contractor shall pay the MTS the difference or the entire amount, whichever may be the case, within thirty (30) calendar days after receipt of a written demand by the Contract Officer.

The payment of aforesaid fixed, agreed and liquidated damages shall be in lieu of any damages for any loss of profit, loss of revenue, loss of use, or for any other direct, indirect, special or consequential losses or damages of any kind whatsoever that may be suffered by the MTS arising at any time from the failure of the Contractor to fulfill the obligations referenced in this clause in a timely manner.

The MTS specifically reserves the right, without limitation of any other rights, to terminate the Contract in accordance with "Termination of Contract" (Section 2.10).

2.26 TITLE ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #21 for additional information.

Upon acceptance of each bus, the Contractor warrants that the title shall pass to the MTS free and clear of all encumbrances. Manufacturer shall deliver the vehicles to MTS registered and with license exempt plates installed.

2.27 PAYMENT ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #22 for additional information.

The MTS shall pay and the Contractor shall accept the amounts set forth in the price schedule as full compensation for all costs and expenses of completing the work in accordance with the Contract, including but not limited to all labor and material required, overhead, expenses, storage and shipping, risks and obligations, taxes (as applicable), fees and profit, and any unforeseen costs.

All payments shall be made as provided herein, less a withholding of twenty (20%) percent plus any additional monies withheld as provided below and less any amounts for liquidated damages in accordance with "Liquidated Damages" (Section 2.25).

All buses will be subject to forty (40) hours continuous revenue service without experiencing any malfunctions, this is the requirement for releasing the twenty (20%) percent of final payment.

The MTS shall make payments for buses at the unit prices itemized in the Price Schedule within, less retention, thirty (30) calendar days after the delivery of each bus and receipt of a proper invoice. In the event that the bus does not meet all requirements for acceptance, the MTS may, at its exclusive option, "conditionally accept" the bus and place it into revenue service pending receipt of Contractor furnished materials and/or labor necessary to effectuate corrective action for acceptance. For any conditionally accepted bus, the payment shall be reduced by an amount to be withheld and paid upon corrective action by the Contractor, equal or two times the estimated cost for parts and labor for the corrective action, plus the twenty (20%) percent retention.

The MTS shall make a final payment for all withholding within thirty (30) calendar days of receipt of a final proper invoice and the following:

- Delivery and acceptance of all Contract deliverables, including manuals, and other documentation required by the Contract, excluding training.
- Rectification of any deficiencies found during the acceptance of buses.
- Contractor provision of any certifications as required by law, regulations and/or the RFP.
- Delivery of all spare components.

2.28 TRAINING

The Contractor shall provide Training and Instruction to MTS by a qualified Instructor. The Contractor shall provide direct presentation classes, for various size groups, to MTS mechanics on the proper operation and maintenance of equipment. MTS Transit Services Training Manager shall approve proposed subjects and scheduling of the classes conducted by the Contractor a minimum of ninety (90) days prior to the delivery of the first vehicle. Training shall be provided throughout the Contract period up to one year following receipt of the final vehicle.

A) **TRAINING MATERIALS**

The Contractor shall provide visual and printed teaching materials as needed during classroom instruction. Teaching materials include lesson plans, student hand-outs, printed technical literature, schematics, diagrams, service training and operating manuals, slides, CD-ROM presentations, overhead presentations, VHS tapes, DVD videos, and etc. The Contractor shall provide an Instructor's Lesson Plan that is distinctly different and more detailed than the Student hand-out and shall include learning objectives, references, Instructor's comments, time estimates, and materials needed. Student hand-outs shall contain exactly what is presented and discussed in class. The Contractor shall provide all necessary copies of training materials needed to present each class.

The Contractor will provide two sets of all teaching materials presented to MTS, in hard copy and in computer form, to the MTS Transit Services Training Department.

⑥ → B) **TRAINING CURRICULUM**

The Contractor shall develop and submit a training curriculum using Microsoft Office Word 7.0 and/or Power Point 2003. The curriculum shall be designed specifically for the MTS Vehicle order and shall include the following equipment and class times:

• Engine	2 sessions, 32 hours each
• Transmission	2 sessions, 32 hours each
• Electrical/Electronic Controls	6 sessions, 16 hours each
• Hybrid Electrical System	6 sessions, 16 hours each
• Air Conditioning and Heating	6 sessions, 16 hours each
• Fire and Gas Detection	6 sessions, 2 hours each
• Operator Seat	6 sessions, 2 hours each
• Air Brake/ABS System	6 sessions, 4 hours each
• Foundation Brakes	6 sessions, 4 hours each
• Passenger Door	4 sessions, 4 hours each
• Preventive Maintenance	6 sessions, 4 hours each
• Destination Sign	4 sessions, 8 hours each
• Wheelchair Ramp System	4 sessions, 2 hours each
• Fuel System	6 sessions, 8 hours each
• Vehicle Orientation	8 sessions, 4 hours each
• Security Camera System	4 sessions, 8 hours each
• Articulation Joint	4 sessions, 8 hours each
• Parts/Service Manual	4 sessions, 8 hours each

2.29 BULLETINS

Each and every time a change or modification is made to the vehicles described within this specification, the manufacturer will announce and initiate this action by issuing a bulletin. The bulletin shall be mailed to the MTS, 100 16th Street, San Diego, California 92101, Attention: Manager of Maintenance. This bulletin service will start after MTS's receipt of the first vehicle and remain active throughout the service life. Each bulletin will contain at least the following ingredients:

- Description of actual change or modification
- Date of implementation
- Replacement pages for service and/or parts manuals as applicable
- Method of implementation

2.30 DOCUMENTS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #1, #23, #24, #25, #26, #27 & #28, #218, #219 & #221 for additional information.

For each series of vehicles produced, the Contractor shall provide ten (10) each of the following manuals and documentation, to be submitted in hard copy as well as AutoCAD media: 10 and PDF with auto start. The Contractor shall keep maintenance manuals available for a period of three (3) years after the date of acceptance of the buses procured under this Contract. The Contractor shall also exert its best efforts to keep maintenance manuals, operator manuals, and keep parts books up-to-date for a period of fifteen (15) years. The supplied parts, maintenance, and operator's manuals shall incorporate all equipment ordered on the buses covered by this procurement. The following manuals shall be supplied as indicated in sets, such that a set consists of a hardcopy and CDROM.

2.31 PARTS AVAILABILITY GUARANTY

The Contractor hereby guarantees to provide, within reasonable periods of time, the spare parts, software and all equipment necessary to maintain and repair the buses supplied under this Contract for a period of at least fifteen (15) years after the date of acceptance. Parts shall be interchangeable with the original equipment and be manufactured in accordance with the quality assurance provisions of this Contract. Prices shall not exceed the Contractor's then current published catalog prices.

Where the parts ordered by the MTS are not received within two (2) working days of the agreed upon time/date and a bus procured under this Contract is out-of-service due to the lack of said ordered parts, then the Contractor shall provide the MTS, within eight (8) hours of the MTS's verbal or written request, the original suppliers' and/or manufacturers' parts numbers, company names, addresses, telephone numbers and contact persons' names for all of the specific parts not received by the MTS.

Where the Contractor fails to honor this parts guaranty or parts ordered by the MTS are not received within thirty (30) days of the agreed upon delivery date, then the Contractor shall provide to MTS, within seven (7) days of the MTS's verbal or written request, the design and manufacturing documentation for those parts manufactured by the Contractor and the original suppliers' and/or manufacturers' parts numbers, company names, addresses, telephone numbers and contact persons' names for all of the specific parts not received by the MTS. Contractor's design and manufacturing documentation provided to the MTS shall be for its sole use in regard to the buses procured under this Contract and for no other purpose.

2.32 INTERCHANGEABILITY ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #222 for additional information.

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 assure interchangeability among buses in this procurement. This interchangeability shall extend to the individual components as well as to their locations in the buses.

2.33 SURVIVABILITY

Contractor's obligations under this Section 2.33 shall survive the nominal expiration or discharge of other Contract obligations and MTS may obtain any remedy under law, Contract or equity to enforce the obligations of contractor that survive the manufacturing, warranty, and final payment periods.

2.34 AUDIT AND INSPECTION OF RECORDS

In accordance with 49 C.F.R. § 18.36(i), 49 C.F.R. § 19.48(d), and 49 U.S.C. § 5325(a), provided the MTS is the FTA Recipient or a subgrantee of the FTA Recipient, the Contractor agrees to provide the MTS, FTA, the Comptroller General of the United States, the Secretary of the U.S. Department of Transportation, or any of their duly authorized representatives access to any books documents, papers, and records of the Contractor which are directly pertinent to or relate to this Contract (1) for the purpose of making audits, examinations, excerpts, and transcriptions and (2) when conducting an audit and inspection.

A) In the event of a sole source Contract, or single Offer, single responsive Offer, or competitive negotiated procurement the Contractor shall maintain and the Contract Officer, the U.S. Department of Transportation (if applicable), or the representatives thereof, shall have the right to examine all books, records, documents, and other cost and pricing data related to the Contract price, unless such pricing is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the public, or prices set by law or regulation, or combinations thereof. Data related to the negotiation or performance of the contract shall be made available for the purpose of evaluating the accuracy, completeness, and currency of the cost or pricing data. The right of examination shall extend to all documents necessary for adequate evaluation of the cost or pricing data, along with the computations and projections used therein, including review of accounting principles and practices that reflect properly all direct and indirect costs anticipated for the performance of the Contract.

B) For Contract modifications or change orders the Contract Officer, the U.S. Department of Transportation (if applicable), or their representatives shall have the right to examine all books, records, documents, and other cost and pricing data related to a Contract modification, unless such pricing is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the public, or prices set by law or regulation, or combinations thereof. Data related to the negotiation or performance of the Contract modification or change order shall be made available for the purpose of evaluating the accuracy, completeness, and currency of the cost or pricing data. The right of examination shall extend to all documents necessary for adequate evaluation of the cost or pricing data, along with the computations and projections used therein, either before or after execution of the Contract modification or change order for the purpose of conducting a cost analysis. If an examination made after execution of the contract modification or change order reveals inaccurate, incomplete, or out-of-date data, the Contract Officer may renegotiate the contract modification or change order price adjustment and the

MTS shall be entitled to any reductions in the price that would result from the application of accurate, complete or up-to-date data.

C) For any cost reimbursable work the Contractor shall maintain and the Contract Officer, the U.S. Department of Transportation (if applicable), or their representatives shall have the right to examine books, records, documents, and other evidence, including review of accounting principles and practices that reflect properly all direct and indirect costs incurred as related to said cost reimbursable work.

D) The materials described in Paragraphs A, B and C above shall be available at the Contractor's office at all reasonable times for inspection, audit, and making excerpts and transcriptions until three (3) years from the date of final payment under the Contract except that the materials described in Paragraph A above shall also be available prior to any award and materials relating to Sections 2.28, 2.29, 2.30, 2.31, 2.32 and 2.33. For records relating to appeals under "Disputes" (Section 2.12), "Audit and Inspection of Records" (Section 2.34), litigation, or the settlement of claims arising out of the negotiation or the performance of contract modifications, records shall be kept available until such appeals, litigation, or claims have been disposed of.

E) The Contract Officer and his/her representative and any other parties authorized under this clause shall employ sound business practices to protect the confidence of the data specified under this clause, for which the Contractor provides access, against disclosure of such information and material to third parties except as permitted by the Contract. The Contractor shall be responsible for ensuring that any confidential data bears appropriate notices relating to its confidential character.

F) The requirements of this section are in addition to other audit, inspection, and record-keeping provisions specified elsewhere in the Contract documents.

2.35 INSURANCE

Contractor will include the contract number on all insurance-related correspondence, i.e., the insurance certificate itself. The insurance certificate's verbiage, as so stated in Section E, "Sample of Insurance Certificate," should be strictly adhered to as represented in the sample.

All policies required shall be issued by companies who are licensed or approved to do business in the State of California and hold a current policyholder's alphabetic and financial-size category rating of not less than A-VI, in accordance with A.M. Best.

A. COVERAGE REQUIRED - ALL CONTRACTS

(1) Liability

(a) Commercial General Liability. At all times during this contract and, with respect to Products and Completed Operations Liability, for twelve (12) months following the acceptance of the work by MTS, Contractor agrees to maintain Commercial General Liability Insurance for bodily injury and property damage in an occurrence

form and with insurance companies acceptable to MTS. Commercial General Liability Insurance must include coverage for the following:

- Premises/Operations Liability
- ~~Aggregate Limits per Project~~
- Products/Completed Operations Liability
- No Explosion, Collapse, and Underground (XCU) exclusion
- Contractual Liability, with respect to this agreement
- Personal Injury Liability
- Broad Form Property Damage
- Independent Contractors

All such policies shall name in the endorsement San Diego Metropolitan Transit System (MTS), San Diego Trolley, Inc. (SDTI), San Diego and Arizona Eastern Railway (SD&AE), San Diego and Imperial Valley Railroad (SD&IV), and San Diego Transit Corporation (SDTC), their directors, officers, agents, and employees as additional insureds as their interests may appear.

(b) Automobile Liability. At all times during this contract, Contractor agrees to maintain Automobile Liability Insurance for bodily injury and property damage including coverage for all owned, nonowned, and hired vehicles.

(c) Workers' Compensation/Employer Liability. At all times during this contract, Contractor agrees to maintain Workers' Compensation and Employers' Liability Insurance in compliance with the applicable statutory requirements. Contractor waives any rights of subrogation against MTS, SDTI, SD&AE, SD&IV, and SDTC, and the policy form must permit and accept such waiver.

B. ADDITIONAL COVERAGES REQUIRED (AS INDICATED) ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #29 for additional information.

☐ (1) Owner-Provided Builder's Risk

PROVIDED

MTS will provide Builder's Risk Insurance on a special form basis, excluding the perils of earthquake and flood, at a limit of not less than the full replacement value of the work and covering the work and all materials and equipment to be incorporated therein, including property in transit elsewhere, and insuring the interests of the Contractor, subcontractors, material men, and MTS, SDTI, SD&AE, SD&IV, SDTC, MTS's contractor for design, and MTS's contractor for construction management. However, Contractor is responsible for the portion of any loss that is within the deductible amount of this Builder's Risk Insurance, which is currently at $50,000 but is subject to change.

☐ (2) Railroad Protective or Equivalent
REQUIRED

Any exclusions relating to performance of operations within the vicinity of any railroad, bridge, trestle, track, roadbed, tunnel, underpass, or crossing must be deleted. Option: Purchase separate Railroad Protective Liability Policy as required.

☐ (3) Professional Liability
REQUIRED

At all times during this contract, and for twelve (12) months following acceptance of work by owner, Contractor agrees to maintain Professional Liability Insurance with respect to services or operations under this agreement.

☐ (4) Pollution Legal Liability
REQUIRED

At all times during this contract, and for twenty-four (24) months following, Contractor agrees to maintain Pollution Legal Liability Insurance with respect to services or operations under this agreement. The extended discovery period must be no less than twenty-four (24) months.

☐ (5) Contractor Equipment
REQUIRED

At all times during this contract, Contractor agrees to maintain Contractor's Equipment Insurance on a special form basis covering equipment owned, leased, or used by Contractor. Contractor waives any rights of subrogation against MTS, SDTI, SD&AE, SD&IV, and SDTC, and the policy form must permit and accept such waiver. Contractor hereby releases and holds harmless MTS for any loss or damage to its equipment.

☐ (6) Installation Floater
REQUIRED

At all times during this contract, Contractor agrees to maintain Installation Floater Insurance on a special form basis covering property owned or provided by Contractor. Contractor waives any rights of subrogation against MTS, SDTI, SD&AE, SD&IV, and SDTC, and the policy form must permit and accept such waiver. Contractor hereby releases and holds harmless these entities for any loss or damage to its property.

☐ (7) Garage Keeper's Legal Liability & Automobile Portion
REQUIRED

At all times during this contract, Contractor agrees to maintain Garage Keeper's Legal Liability as well Automobile Portion which covers the risk of loss or damage to MTS vehicles while in the care, custody or control of Contractor. Automobile portion shall cover the Contractor in the event of a vehicle accident while they are driving a MTS vehicle, which results in a third party claim of physical damage or bodily injury.

☑ (8) Primary and Non-Contributory Insurance
REQUIRED

Contractor agrees that all general liability coverages required under this insurance section are PRIMARY and that any insurance of MTS, SDTI, SD&AE, SD&IV, and SDTC shall be excess and noncontributory (endorsement required).

☐ (9) Crime Fidelity Insurance
REQUIRED

At all times during this contract, Contractor agrees to maintain Crime Fidelity Insurance with respect to services or operations under this agreement. The coverage should include Electronic and Computer Crime.

C. MINIMUM POLICY LIMITS REQUIRED

	Combined Single Limit (CSL)
Commercial General Liability (Per Occurrence):	$1,000,000
Automobile Liability:	$1,000,000
Worker's Compensation Employer's Liability:	$1,000,000

Additional Coverages (as indicated under Section B, Additional Coverages Required):

☐	B (1) Builder's Risk:	Replacement Cost
☐	B (2) Railroad Protective	$
☐	B (3) Professional Liability	$
☐	B (4) Pollution Liability	$
☐	B (5) Contractor Equipment	Replacement Cost
☐	B (6) Installation Floater	Replacement Cost
☐	B (7) Garage Keeper's Legal Liability	$1,000,000
☑	B (8) Primary and Non-Contributory Insurance	As Required
☐	B (9) Crime Fidelity Insurance	$

D. POLICY PROVISION REQUIRED

All policies and coverages shall contain a provision for thirty (30) days written notice by the Insurer(s) to MTS Contracts Specialist of any cancellation or material reduction of coverage. A ten (10) day notice is required for non-payment of premium.

E. EVIDENCE REQUIRED

Within ten (10) working days following receipt of notice that a contract has been awarded, Contractor shall have provided the MTS Contracts Specialist with satisfactory certification by a qualified representative of the Insurer(s) that Contractor's insurance complies with all provisions in this insurance section.

F. SPECIAL PROVISIONS

The foregoing requirements as to the types and limits of insurance coverage to be maintained by Contractor, and any approval of said insurance by MTS, SDTI, SD&AE, SD&IV, and SDTC, or their insurance Contractor(s) are not intended to and shall not in any manner limit or qualify the liabilities and obligations otherwise assumed by Contractor pursuant to this agreement, including but not limited to the provisions concerning indemnification.

MTS reserves the right to withhold payments to Contractor in the event of material noncompliance with the insurance requirements outlined above.

2.36 PRODUCTION OF DOCUMENTS

Upon award of the Contract to an Proposer, such Proposer shall commence performance under the Contract by executing all Contract Guaranty Agreements provided with the Offer, by furnishing any required bonds, and by furnishing copies of the certificates of insurance required to be procured by the Contractor pursuant to the Contract documents within thirty (30) calendar days after the date of receipt of the notice of award or within such further time as the MTS may allow. Failure to fulfill these requirements within the specified time is cause for termination of the Contract under "Termination for Default" (Section 2.11).

2.37 INDEMNITY

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #30 for additional information.

As between MTS and Contractor, Contractor is deemed to assume responsibility and liability for, and Contractor shall indemnify and hold harmless, MTS, SDTI, SDTC, SD&AE, SD&IV and any and all of its directors, officers, agents or employees from and against any and all claims, loss, damage, charge, or expense, whether direct or indirect, which MTS, SDTI, SDTC, SD&AE, SD&IV or such directors, officers, agents or employees may be put or subjected, by reason of any damage, loss, or injury of any kind or nature whatever to persons or property caused by or resulting from or in connection with any negligent act or action, or any neglect, omission, or failure to act when under a duty to act on the part of Contractor or any of its officers, agents, servants, employees or subcontractors in its or their performance under this Agreement. In addition to any other remedy authorized by law, so much of the money due Contractor under this agreement as shall be considered necessary by MTS may be retained until disposition has been made of any claim for damages.

2.38 MATERIALS/ACCESSORIES RESPONSIBILITY

The Contractor shall be responsible for all materials and workmanship in the construction of the bus and all accessories used, whether the same are manufactured by the Contractor or purchased from supplier. This provision excludes tires, fare boxes, radios, and any equipment leased or supplied by the MTS, except insofar as such equipment is damaged by the failure of a part or component for which the Contractor is responsible, or except insofar as the damage to such equipment is caused by the Contractor during the manufacture of the buses. Risk of damage to or loss of the buses is the subject of "Assumption of Risk of Loss" (Section 2.17).

2.39 POLICIES FOR ALL TIERS

Contractor agrees to comply with this Section 2.8 and to include these requirements in all subcontracts of every tier.

2.40 NO FEDERAL GOVERNMENT OBLIGATION TO THIRD PARTIES

As a Federal Transit Administration (FTA) grantee, the Metropolitan Transit System (MTS), a California Public Agency, is required to inform the Contractor of the following information:

The Federal Government shall not be subject to any obligations or liabilities to any third-party contractor or any other person not a party to the Grant Agreement or Cooperative Agreement in connection with the performance of this contract. Notwithstanding any concurrence provided by the Federal Government in or approval of any solicitation, subagreement, or third-party contract, the Federal Government continues to have no obligations or liabilities to any party, including the third-party contractor.

2.41 FALSE OR FRAUDULENT STATEMENTS AND CLAIMS

As an FTA grantee, MTS is required to inform the Contractor of the following information:

The Contractor recognizes that the requirements of the Program Fraud Civil Remedies Act of 1986, as amended, 49 U.S.C. Section 3801, et seq., and U.S. Department of Transportation (DOT) regulations, "Program Fraud Civil Remedies" 49 C.F.R., Part 31, apply to its actions pertaining to this contract. Accordingly, by signing the contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, or it may make pertaining to the contract. In addition to other penalties that may be applicable, the Contractor also acknowledges that if it makes a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986, as amended, on the Contractor to the extent the Federal Government deems appropriate. The Contractor also acknowledges that if it makes a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government in connection with an urbanized area formula project financed with federal assistance authorized by 49 U.S.C., Section 5307, the government reserves the right to impose on the Contractor the penalties of 18 U.S.C., Section 1001 and 49 U.S.C., Section 5307(n) (1), to the extent the Federal Government deems appropriate.

2.42 INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION (FTA) TERMS

The RFP provisions include, in part, certain Standard Terms and Conditions required by the Department of Transportation (DOT), whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1E, are hereby incorporated by reference. Notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any MTS requests which would cause MTS to be in violation of the FTA terms and conditions.

2.43 CHANGES IN FEDERAL LAWS AND REGULATIONS

Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the agreement between MTS and FTA that funds any part of this Contract, as they may be amended or promulgated from time to time during the term of this Contract. Contractor's failure to so comply shall constitute a material breach of this Contract.

2.44 CARGO PREFERENCE

If applicable, 46 U.S.C. 1241(b) (1) and 46 C.F.R. Part 381 which imposes U.S. cargo preference requirements on the shipment of foreign made goods shall apply to this procurement.

A. The Contractor shall utilize privately owned United States-flagged commercial vessels to ship at least fifty (50%) percent of the gross tonnage (competed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, materials, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flagged commercial vessels.

B. The Contractor shall furnish within twenty (20) days following the date of loading for shipments originating within the United States, or within thirty (30) working days following the date of loading for shipments originating outside United States, a legible copy of a rated, "onboard" commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (A) above to the Recipient (through the prime Contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, 400 Seventh Street, S.W., Washington, D.C., 20590, marked with appropriate identification of the project.

C. The Contractor shall insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

2.45 ENERGY EFFICIENCY

As an FTA grantee, MTS is required to inform the Contractor of the following information:

The successful bidder agrees to comply with the mandatory energy efficiency standards and policies within the applicable state energy conservation plans issued in compliance with the Energy Policy and Conservation Act, 42 U.S.C. §§ 6321 et seq.

2.46 RECYCLED PRODUCTS REQUIREMENTS *(APPLICABLE TO ALL CONTRACTS INVOLVING ITEMS DESIGNATED BY THE EPA, WHERE THE PROCURING AGENCY PURCHASES $10,000 OR MORE OF ONE OF THESE ITEMS IN A FISCAL YEAR, OR WHEN THE COST OF SUCH ITEMS PURCHASED DURING THE PREVIOUS FISCAL YEAR WAS $10,000)*

Recovered Materials - The Contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 C.F.R. Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 C.F.R. Part 247.

2.47 PRIVACY ACT REQUIREMENTS

The following requirements apply to the Contractor and its employees that administer any system of records on behalf of the Federal Government under any contract:

A. The Contractor agrees to comply with, and assures the compliance of its employees with, the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. § 552a. Among other things, the Contractor agrees to obtain the express consent of the Federal Government before the Contractor or its employees operate a system of records on behalf of the Federal Government. The Contractor understands that the requirements of the Privacy Act, including the civil and criminal penalties for violation of that Act, apply to those individuals involved, and that failure to comply with the terms of the Privacy Act may result in termination of the underlying contract.

B. The Contractor also agrees to include these requirements in each subcontract to administer any system of records on behalf of the Federal Government financed in whole or in part with Federal assistance provided by the FTA.

2.48 DISADVANTAGED BUSINESS ENTERPRISE POLICY

Pursuant to Title 49, Code of Federal Regulations, Part 23.67, an Offeror, as a condition of being authorized to respond to this solicitations, must certify by completing "DBE APPROVAL CERTIFICATION" (Section 1.1.7.7), that it has on file with the Federal Transportation Administration (FTA) an approved or not disapproved annual Disadvantaged Business Enterprise (DBE) subcontracting participation goal.

2.49 PATENT AND RIGHTS IN DATA

A. Rights in Data - These following requirements apply to each contract involving experimental, developmental or research work:

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 the contract to which this Attachment has been added:

   a. Except for its own internal use, the Contractor may not publish or reproduce subject data in whole or in part, or in any manner or form, nor may the 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, nonexclusive, 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 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 Contractor performing experimental, developmental, or research work required by the underlying contract to which this Attachment is added agrees to permit FTA to make available to the public, either FTA's license in the copyright to any subject data developed in the course of that 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 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 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 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. Contractor shall not 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 Contractor and financed entirely without using Federal assistance provided by the Federal Government that has been incorporated into work required by the underlying contract to which this Attachment has been added is exempt from the requirements of subsections (b), (c), and (d) of this clause, provided that the Contractor identifies that data in writing at the time of delivery of the contract work.

g. Unless FTA 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 provided by FTA.

3. Unless the Federal Government later makes a contrary determination in writing, irrespective of the Contractor's status (i.e., a large business, small business, state government or state instrumentality, local government, nonprofit organization, institution of higher education, individual, etc.), Contractor agrees to take the necessary actions to provide, through FTA, those rights in that invention due the Federal Government as described in U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," 37 C.F.R. Part 401.

4. The Contractor also agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.

B. Patent Rights - The following requirements apply to each contract involving experimental, developmental, or research work:

1. General - If any invention, improvement, or discovery is conceived or first actually reduced to practice in the course of or under this Agreement, and that invention, improvement, or discovery is patentable under the laws of the United States of America or any foreign country, Contractor agrees to take actions necessary to provide immediate notice and a detailed report to the party at a higher tier until FTA is ultimately notified.

2. Unless the Federal Government later makes a contrary determination in writing, irrespective of the Contractor's status (a large business, small business, state government or state instrumentality, local government, nonprofit organization, institution of higher education, individual), the Contractor agree to take the necessary actions to provide, through FTA, those rights in that invention due the Federal Government as described in U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," 37 C.F.R. Part 401.

3. The Contractor also agrees to include the requirements of this clause in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.

2.50 INTEREST OF MEMBERS OF OR DELEGATES TO CONGRESS

No member of, or delegate to, the Congress of the United States shall be admitted to any share or part of this Contract or to any benefit arising there from. (41 U.S.C. § 22.)

2.51 PROHIBITED INTEREST

As an FTA grantee, MTS is required to inform the Contractor of the following information:

No, member, officer, or employee of a local public body, during his tenure or for one (1) year thereafter, shall have any interest, direct or indirect, in this contract or the proceeds thereof. No member of or delegate to the Congress of the United States shall be admitted to a share or part of this contract or to any benefit arising there from.

2.52 TITLE VI CIVIL RIGHTS ACT OF 1964

During the performance of this contract, the Contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Contractor"), agrees as follows:

A. Compliance with Regulations. The Contractor and any Subcontractors shall comply with the requirements of Title VI of the Civil Rights Act of 1964, 42 U.S.C. § 2000d; 49 U.S.C.§ 5332 and DOT Regulations, "Non-Discrimination in Federally-Assisted Programs of the Department of Transportation -- Effectuation of Title VI of the Civil Rights Act," 49 C.F.R. Part 21, and any implementing requirements FTA may issue, 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 this contract.

B. Nondiscrimination. The Contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, religion, color, sex, or age, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor shall 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.

C. Solicitations for Subcontractors, including Procurements of Materials and Equipment. In all solicitations either by competitive bidding or negotiations made by the Contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this contract and the regulations relative to nondiscrimination on the grounds of race, religion, color, sex, age, or national origin.

D. Information and Reports. The Contractor shall provide all information and reports required by the regulations or directive issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the FTA to be pertinent to ascertain compliance with such regulations, orders, and instructions. Where any information is required or a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to MTS or FTA, as appropriate, and shall set forth what efforts it has made to obtain the information.

E. Sanctions for Noncompliance. In the event of Contractor's noncompliance with nondiscrimination provisions of this contract, MTS shall impose such contract sanctions as it or FTA may determine to be appropriate, including, but not limited to:

- withholding of payments to the Contractor under the contract until the Contractor complies; and/or

- cancellation, termination, or suspension of the contract, in whole or in part.

F. Incorporation of Provisions. The Contractor shall include the provisions of Sections A through E of this section in every subcontract, including procurements of materials and leases of equipment, unless exempt by the regulations, or directives issued pursuant thereto. The Contractor shall take such action with respect to any subcontract or procurement as MTS or FTA may direct as a means of enforcing such provisions including sanctions for noncompliance provided; however, in the event a Contractor becomes involved, or is threatened with litigation with a subcontractor or supplier as a result of such direction, the Contractor may request MTS to enter into such litigation to protect the interests of MTS, and in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

2.53 EMPLOYEE PROTECTIONS

A. Construction Activities. For construction activities exceeding $2,000 performed in connection with the project, the successful bidder shall comply with the following construction employee protection requirements:

1. Davis-Bacon Act, as amended. The successful bidder shall comply and assure compliance with the requirements of 49 U.S.C. § 5333(a), the Davis-Bacon Act, 40 U.S.C. §§ 276a through 276a (7), and implementing U.S. Department of Labor (DOL) regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the Contract Work Hours and Safety Standards Act)," 29 C.F.R. Part 5. In addition to other requirements that may apply:

   a. The successful bidder shall pay wages to laborers and mechanics performing third party contract work at a rate not less than the minimum wages specified in a wage determination issued by the U.S. Secretary of Labor and not less frequently than once a week. The MTS agrees to furnish the bidder a copy of the current prevailing wage determination issued by the U.S. DOL for third-party contract work under the project upon request, and agrees to refrain from awarding any affected third-party contract until the third-party contractor agrees to the required wage determination.

   b. MTS shall report to FTA every suspected or reported violation of the Davis-Bacon Act or its federal implementing regulations.

2. Contract Work Hours and Safety Standards Act, as amended. The successful bidder shall comply and assures compliance with sections 102 and 107 of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. §§ 327 through 333; and implementing U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the Contract Work Hours and Safety Standards Act)," 29 C.F.R. Part 5; and U.S. DOL regulations, "Safety and Health Regulations for Construction," 29 C.F.R. Part 1926. In addition to other requirements that may apply:

   a. In accordance with section 102 of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. §§ 327 through 332, the successful bidder shall assure that, for the project the wages of every mechanic and laborer will be computed on the basis of a standard work week of forty (40) hours, and that each worker shall be compensated for work exceeding the standard work week at a rate of not less than 1.5 times the basic rate of pay for all hours worked in excess of forty (40) hours in the work week. The successful bidder shall ensure that determinations pertaining to these requirements will be made in accordance with applicable U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the contract Work Hours and Safety Standards Act," 29 C.F.R. Part 5.

   b. In accordance with section 107 of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. § 333, the successful bidder shall assure that no laborer or mechanic working on a construction contract shall be required to work in surroundings or under working conditions that are unsanitary, hazardous, or dangerous to his or her health and safety, as determined in accordance with U.S. DOL regulations, "Safety and Health Regulations for Construction,"29 C.F.R. Part 1926."

   c. The requirements of this subsection do no apply to third-party contracts for the purchase of supplies, materials, or articles ordinarily available on the open market.

3. Copeland "Anti-Kickback" Act, as amended. The successful bidder shall comply with the Copeland "Anti-Kickback" Act, 18 U.S.C. § 874 and 40 U.S.C. § 276c, and U.S. DOL regulations, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in part by Loans or Grants from the United States," 29 C.F.R. Part 3. In addition to other requirements that may apply:

a. The successful bidder will not induce, by any means, any person employed in the construction, completion or repair of public work, to give up any part of the compensation to which that employee is otherwise entitled.

b. MTS shall report every suspected or reported violation of the Copeland "Anti-Kickback" Act or its federal implementing regulations to FTA.

B. Activities Not Involving Construction. For nonconstruction activities exceeding $2,500 performed in connection with the project, the successful bidder shall comply with the following employee protection requirements:

1. In accordance with Section 102 of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. §§ 327 through 332, the successful bidder shall assure that, for the project, the wages of every mechanic and laborer will be computed on the basis of a standard work week of forty (40) hours and that each worker will be compensated for work exceeding the standard work week at a rate of not less than 1.5 times the basic rate of pay for all hours worked in excess of forty (40) hours in the work week. The successful bidder agrees that determinations pertaining to these requirements will be made in accordance with the applicable U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the Contract Work Hours and Safety Standards Act)," 29 C.F.R. Part 5.

2. The requirements of this subsection do not apply to third-party contracts for the purchase of supplies, materials, or articles ordinary available on the open market.

C. State and Local Government Employees. The successful bidder shall ensure that the minimum wage and overtime provisions of the Fair Labor Standards Act, as amended, 29 U.S.C. §§ 206 and 207, apply to employees performing work involving commerce, including such state and local government employees as public transit authority employees, participating in the project. Consequently, each participant that is a state or local government agrees to comply with the Fair Labor Standards Act's minimum wage and overtime requirements for employees performing work in connection with the project.

D. Transit Employee Protective Arrangements. The successful bidder shall comply with the following requirements applicable to transit operations performed in connection with the project:

1. Standard Transit Employee Protective Arrangements. To the extent that transit operations are involved, the successful bidder shall carry out the project in compliance with terms and conditions determined by the Secretary of Labor to be fair and equitable to protect the interests of employees affected by the project and to meet the requirements of 49 U.S.C. § 5333(b), and U.S. guidelines at 29 C.F.R. Part 215, and any

amendments thereto. These terms and conditions are identified in U.S. DOL's certification of transit employee protective arrangements to FTA, the date of which is included in the Grant Agreement or Cooperative Agreement. The successful bidder shall carry out the project in compliance with the conditions stated in that U.S. DOL certification. That U.S. DOL certification and any documents cited therein are incorporated by reference and made part of the Grant Agreement or Cooperative Agreement. The requirements of this Subsection, however, do not apply to formula assistance projects for the elderly and persons with disabilities authorized by 49 U.S.C. § 5310(a) (2) or to formula assistance projects for nonurbanized areas authorized by 49 U.S.C. § 5311.

2. Transit Employee Protective Arrangements for Projects Authorized by 49 U.S.C. § 5310(a) (2) for the Elderly and Persons with Disabilities. If the Secretary of Transportation has determined or determines in the future that employee protective arrangements required by 49 U.S.C. § 5333(b) are necessary or appropriate for public body subrecipients under the project, the successful bidder shall carry out the project in compliance with the terms and conditions determined by the Secretary of Labor to meet the requirements of 49 U.S.C. § 5333(b), and U.S. DOL guidelines at 29 C.F.R. Part 215, and any amendments thereto. These terms and conditions are identified in U.S. DOL's certification of transit employee protective arrangements to FTA, the date of which is included in the Grant Agreement or Cooperative Agreement. The successful bidder shall carry out the Project in compliance with the conditions stated in that U.S. DOL certification. That U.S. DOL certification and any documents cited there in are incorporated by reference and made part of the Grant Agreement or Cooperative Agreement.

3. Transit Employee Protective Arrangement for Projects Authorized by 49 U.S.C. § 5311 in Nonurbanized Areas. The successful bidder shall comply with the terms and conditions of the Special Warranty for the Nonurbanized Area Program agreed to by the Secretaries of Transportation and Labor, dated May 31, 1979, and the procedures implemented by U.S. DOL or any revision thereto.

2.54 ENVIROMENTAL REQUIREMENTS

As an FTA grantee, MTS is required to inform the Contractor of the following information:

The successful bidder shall recognize that many federal and state laws imposing environmental and resource conservation requirements may apply to the Project. Some, but not all, of the major federal laws that may affect the project include: the National Environmental Policy Act of 1969, as amended, 42 U.S.C. §§ 4321 et seq.; the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. and scattered sections of 29 U.S.C.; the Clean Water Act, as amended, scattered sections of 33 U.S.C. and 12 U.S.C.; the Resource Conservation and Recovery Act, as amended, 42 U.S.C. §§ 6901 et seq., and the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9601 et seq. The successful bidder shall recognize that U.S. EPA, FHWA and other agencies of the Federal Government have issued and are expected in the future to issue regulations, guidelines, standards, orders, directives, or other requirements that may affect the project. Thus, the successful bidder agrees to adhere to, and impose on its subcontractors and third-party contractors, any such federal

requirements as the Federal Government may now or in the future promulgate. Listed below are requirements of particular concern to FTA and MTS. The successful bidder acknowledges that this list does not constitute the successful bidder's entire obligation to meet all federal environmental and resource conservation requirements.

A. Environmental Protection. The successful bidder shall comply with the applicable requirements of the National Environment Policy Act of 1969, as amended, 42 U.S.C. §§ 4321 et seq. in accordance with Executive Order no. 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," 59 Fed. Reg. 7629, Feb. 16, 1994; 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. Part 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.

B. Air Quality

1. The successful bidder shall comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. Specifically:

   a. The successful bidder shall comply with applicable requirements of U.S. EPA regulations, "Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act," 40 C.F.R. part 51, Subpart T; and "Determining Conformity of Federal Actions to State or Federal Implementation Plans," 40 C.F.R. Part 93. To support the requisite air quality conformity finding for the Project, the successful bidder shall implement each air quality mitigation and control measure incorporated in the Project. The successful bidder agrees that any Project identified in a State Implementation Plan (SIP) as a Transportation Control Measure, will be wholly consistent with the description of the design concept and scope of the Project described in the SIP.

   b. U.S. EPA also imposes requirements implementing the Clean Air Act, as amended, that may apply to transit operators, particularly operators of large transit bus fleets. Thus, the successful bidder should be aware that the following U.S. EPA regulations, among others may apply to its projects: "Control of Air Pollution from Motor Vehicles and Motor Vehicle Engines," 40 C.F.R. Part 85; "Control of Air Pollution from New and In-Use Motor Vehicles and New and In-Use Motor Vehicle Engines: Certification and Test Procedures," 40 C.F.R. Part 86; and "Fuel Economy of Motor Vehicles," 40 C.F.R. Part 600.

2. The successful bidder agrees to report and require each third-party contractor and subcontractor at any tier to report any violation of these requirements resulting from any project implementation activity of a third-party contractor, subrecipient, or itself to FTA and the appropriate U.S. EPA Regional Office.

C. Clean Water

1. The successful bidder shall 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.

2. The successful bidder agrees to report and require each third-party contractor and subcontractor at any tier to report any violation of these requirements resulting from any project implementation activity of a third-party contractor (at any tier), subcontractor (at any tier), or itself to FTA and the appropriate U.S. EPA Regional Office.

D. Use of Public Lands. The successful bidder agrees that no publicly owned land from a park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance as determined by the federal, state, or local officials having jurisdiction thereof, or any land from a historic site of national, state, or local significance may be used for the project unless the FTA makes the specific findings required by 49 U.S.C. § 303.

E. Mitigation of Adverse Environmental Effects. The successful bidder agrees that if the project should cause adverse environmental effects, the successful bidder will take all reasonable steps to minimize those effects in accordance with 49 U.S.C. § 5324(b), and all other applicable federal laws and regulations, specifically, the procedures of 23 C.F.R. Part 771 and 49 C.F.R. Part 622. The successful bidder agrees to undertake all environmental mitigation measures that may be identified as commitments in applicable environmental documents (such as environmental assessments, environmental impact statements, memoranda of agreement, and statements required by 49 U.S.C. § 303) and with any conditions the Federal Government has imposed in its finding of no significant impact or a record of decision. Those mitigation measures are incorporated by reference and made part of the Grant Agreement or Cooperative Agreement. As soon as the Federal Government and the successful bidder reach agreement on any deferred mitigation measures, those measures will then be incorporated by reference and made part of the Grant Agreement or Cooperative Agreement. The successful bidder agrees that any mitigation measures agreed upon may not be modified or withdrawn without the express written approval of the Federal Government.

2.55 DEBARMENT AND SUSPENSION CERTIFICATION REQUIREMENTS

As an FTA grantee, MTS is required to inform the Contractor of the following information:

This contract is a covered transaction for purposes of 49 C.F.R. Part 29. As such, the Contractor is required to verify that the Contractor, its principals, as defined at 49 C.F.R. 29.995, or affiliates, as defined at 49 C.F.R. 29.905, are not excluded or disqualified as defined at 49 C.F.R. 29.940 and 29.945.

The Contractor is required to comply with 49 C.F.R. 29, Subpart C and must include the requirement to comply with 49 C.F.R. 29 Subpart C in any lower tier covered transaction it enters into.

By signing and submitting its bid or proposal, the Contractor certifies as follows:

The certification in this clause is a material representation of fact relied upon by MTS. If it is later determined that the Contractor knowingly rendered an erroneous certification, in addition to remedies available to MTS, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The Contractor agrees to comply with the requirements of 49 C.F.R. 29, Subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The Contractor further agrees to include a provision requiring such compliance in its lower tier covered transactions in excess of $100,000.00 aggregate.

2.56 RESTRICTIONS ON LOBBYING

A. MTS and Contractor shall not use federal assistance funds to support lobbying.

B. In accordance with 31 U.S.C. § 1352 and U.S. DOT regulations, "New Restrictions on Lobbying," 49 C.F.R. Part 20, if the Project exceeds $100,000, FTA will not make any federal assistance available to the Contractor until FTA has: (a) received the Contractor's certification that the Contractor has not and will not use federal appropriated funds to pay any person or organization to influence or attempt to influence an officer or employee of any federal department or agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any federal grant, cooperative agreement, or any other federal award from which funding for the project is originally derived, consistent with 31 U.S.C.§ 1352, and (b) if applicable, the Contractor's statement disclosing any lobbying with nonfederal funds that has taken place in connection with obtaining any federal financing ultimately supporting the project.

C. The Contractor agrees to provide MTS a copy of each lobbying disclosure statement with the accompanying lobbying certification provided by a prospective third-party contractor at any tier or subrecipient at any tier. The form is included in this package for your use.

2.57 FLY AMERICA REQUIREMENTS

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 C.F.R. 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. The Contractor agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

2.58 PRE-AWARD AND POST-DELIVERY AUDIT REQUIREMENTS - CERTIFICATIONS REQUIRED

The Contractor agrees to comply with 49 U.S.C. § 5323(l) and FTA's implementing regulation at 49 C.F.R. Part 663 and to submit the following certifications:

A. Buy America Requirements: The Contractor shall complete and submit a declaration certifying either compliance or noncompliance with Buy America. If the Bidder certifies compliance with Buy America, it shall submit documentation which lists 1) component and subcomponent parts of the rolling stock to be purchased identified by manufacturer of the parts, their country of origin and costs; and 2) the location of the final assembly point for the rolling stock, including a description of the activities that will take place at the final assembly point and the cost of final assembly.

B. Solicitation Specification Requirements: The Contractor shall submit evidence that it will be capable of meeting the bid specifications.

C. Federal Motor Vehicle Safety Standards (FMVSS): The 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.

2.59 BUY AMERICA REQUIREMENTS

As an FTA grantee, MTS is required to inform the Contractor of the following information:

The bidder's attention is directed to the "Buy America" requirements set forth in Section 165 of the federal Surface Transportation Act of 1982, and the FTA regulations implementing Section 165 (49 C.F.R., Part 661). Information on "Buy America" requirements (49 C.F.R., Part 661) is available for review at the MTS office.

Any steel or manufactured product used in projects supported by FTA funds must be produced in the United States unless the Secretary of Transportation determines that one of the following exceptions applies:

A. Applying this provision would be inconsistent with the public interest.

B. The materials and products required for a project are not produced in the United States either in sufficient quantity or not of the quality required for this project.

C. Including domestically produced material will increase the cost of the contract by more than twenty-five (25%) percent.

D. Note: In calculating the cost of components under the terms of this provisions, labor costs involved in the final assembly are not to be included.

E. Where an FTA grantee is purchasing buses or other rolling stock (including train control, communication, and traction power equipment), the cost of components produced in the United States is more than sixty (60%) percent of the cost of all the components of the rolling stock or equipment, and final assembly of the stock or equipment has taken place in the United States.

F. In reference to exception C above, FTA requires that the bid for nondomestic items must be adjusted by the appropriate differential ten or twenty-five (10% or 25%) percent and then the adjusted overall bid prices compared to determine if the inclusion of domestic materials will increase the "overall project contract." When both "rolling stock" and "nonrolling stock" are being procured in a single contract, the appropriate differentials will be applied to the different items only and not to the overall bid price.

G. Thus, the foreign purchased components of the individual bid items will be adjusted upward for purposes of determining Buy America compliance only, by ten (10%) percent for rolling stock and twenty-five (25%) percent for nonrolling stock, thereby increasing the contractor's cost proposal item by the adjusted amount, thereby adjusting the overall total bid price.

H. The revised bid amount will be the basis for determining the lowest bidder.

I. Within five (5) days of written notification, the bidder shall provide the necessary information to substantiate the cost of nondomestic items and the factual basis for the claim of exception to the requirements of Section 165(a) of the Surface Transportation Assistance Act of 1982 and the regulations in 49 C.F.R., part 661.

J. The Buy America Certificate included in the Contract Documents, Alternative 'A' or 'B,' must be completed and submitted with the bid. A bid which does not include either Alternative 'A' or 'B' or which includes both Alternative 'A' and Alternative 'B' may be considered nonresponsive.

K. A waiver from the Buy America provision may be sought by the Contractor if grounds for the waiver exist. Inclusion of the Alternative 'B' certificate in a bid constitutes an application by the bidder for an exception to the Buy America requirement applicable to this type of contract. If a bid includes the Alternative 'B' certificate and an exception is not granted by FTA, the bid will be considered nonresponsive.

2.60 SOLICITATION SPECIFICATION REQUIREMENTS

The Proposer and (if selected) Contractor shall submit evidence that it will be capable of meeting the RFP specifications.

2.61 BUS TESTING

The Contractor agrees to comply with 49 U.S.C. § 5323(c) and FTA's implementing regulation at 49 C.F.R. Part 665 and shall perform the following:

A) A manufacturer of a new bus model or a bus produced with a major change in components or configuration shall provide a copy of the final test report to the MTS prior to the recipient's final acceptance of the first bus.

B) A manufacturer who releases a report under paragraph 1 above shall provide notice to the operator of the testing facility that the report is available to the public.

C) If the manufacturer represents that the vehicle was previously tested, the vehicle being sold should have the identical configuration and major components as the vehicle in the test report, which must be provided to the MTS prior to MTS's final acceptance of the first vehicle. If the configuration or components are not identical, the manufacturer shall provide a description of the change and the manufacturer's basis for concluding that it is not a major change requiring additional testing.

D) If the manufacturer represents that the vehicle is "grandfathered" (has been used in mass transit service in the United States before October 1, 1988, and is currently being produced without a major change in configuration or components), the manufacturer shall provide the name and address of the recipient of such a vehicle and the details of that vehicle's configuration and major components.

2.62 COMPLIANCE TO INDUSTRIAL SAFETY CODES

All equipment shall be in complete compliance with all requirements of the laws of the State of California and City and County of San Diego, as well as all applicable federal laws and regulations at date of delivery and/or installation at MTS.

2.63. WORKMANSHIP

All bidders must conform to the final approved specifications. Workmanship throughout shall conform to the highest standard of commercially accepted practice for the class of work, and shall result in a neat and finished appearance.

2.64. CONSISTENCY OF PRODUCT

On procurements requiring multiple units or periodic delivery of a product, all units or product shall be identical unless otherwise stated in the technical specifications. Contractor will be required to correct or replace (at MTS discretion) said units or products found inconsistent and compensate MTS for any damages incurred.

2.65. OMISSIONS

No advantage shall be taken by the Bidder and/or manufacturer in the omission of any parts or details, which make the equipment complete and ready for service, even though such parts or details are not mentioned in these specifications. All units or parts not herein specified shall be manufacturer's standard units.

2.66 BRAND NAMES

Whenever reference to a specific "Brand Name" is made in these specifications, it is to be considered illustrative but not restrictive, and is used to describe a component which has been selected by MTS as best meeting the specific minimal operational, design, performance, capacity, maintenance, quality and reliability criteria. Wherever a "Brand Name" appears, the words "or approved equal" are automatically inferred.

2.67 COMPONENT MATERIAL

The Bidder shall assume responsibility for materials and accessories used in the manufacture thereof, whether the same are made by the manufacturer or purchased under sub-contract.

SECTION 3

SECTION 3 CONTRACTOR'S IN-PLANT QUALITY ASSURANCE REQUIREMENTS

3.0 QUALITY ASSURANCE REQUIREMENTS

The Contractor, the Contractor's manufacturing plant and organization shall be certified to the appropriate QS-9000/ISO 9000 series of standards.

3.1 QUALITY ASSURANCE ORGANIZATION ESTABLISHMENT

The Contractor shall establish and maintain an effective in-plant quality assurance organization. It shall be a specifically defined organization and should be directly responsible to the Contractor's top management.

3.2 CONTROL

The quality assurance organization shall exercise quality control over all phases of production from initiation of design through manufacture and preparation for delivery. The organization shall also control the quality of supplied articles.

3.3 AUTHORITY AND RESPONSIBILITY

The quality assurance organization shall have the authority and responsibility for reliability, quality control, inspection planning, establishment of the quality control system, and acceptance/rejection of materials and manufactured articles in the production of the transit buses.

3.4 QUALITY ASSURANCE ORGANIZATION FUNCTIONS

The quality assurance organization shall include the following minimum functions.

3.5 WORK INSTRUCTIONS

The quality assurance organization shall verify inspection operation instructions to ascertain that the manufactured product meets all prescribed requirements.

3.6 RECORDS MAINTENANCE

The quality assurance organization shall maintain and use records and data essential to the effective operation of its program. These records and data shall be available for review by the Resident Inspectors. Inspection and test records for this procurement shall be available for a minimum of one (1) year after inspections and tests are completed.

3.7 CORRECTIVE ACTION

The quality assurance organization shall detect and promptly assure correction of any conditions that may result in the production of defective transit buses. These conditions may occur in designs, purchases, manufacture, tests, or operations that culminate in defective supplies, services, facilities, technical data, or standards.

3.8 BASIC STANDARDS AND FACILITIES

The following standards and facilities shall be basic in the quality assurance process.

3.9 CONFIGURATION CONTROL

The Contractor shall maintain drawings, assembly procedures, and other documentation that completely describe a qualified bus that meets all of the options and special requirements of this procurement. The quality assurance organization shall verify that each transit bus is manufactured in accordance with these controlled drawings, procedures, and documentation.

3.10 MEASURING AND TESTING FACILITIES

The Contractor shall provide and maintain the necessary gauges and other measuring and testing devices for use by the quality assurance organization to verify that the buses conform to all specification requirements. These devices shall be calibrated at established periods against certified measurement standards that have known, valid relationships to national standards.

3.11 PRODUCTION TOOLING AS MEDIA OF INSPECTION

When production jigs, fixtures, tooling masters, templates, patterns, and other devices are used as media of inspection, they shall be proved for accuracy at formally established intervals and adjusted, replaced, or repaired as required to maintain quality.

3.12 EQUIPMENT USE BY RESIDENT INSPECTORS

The Contractor's gauges and other measuring and testing devices shall be made available for use by the resident inspectors to verify that the buses conform to all specification requirements. If necessary, the Contractor's personnel shall be made available to operate the devices and to verify their condition and accuracy.

3.13 CONTROL OF PURCHASES

The Contractor shall maintain quality control of purchases.

3.14 SUPPLIER CONTROL

The Contractor shall require that each supplier maintains a quality control program for the services and supplies that it provides. The Contractor's quality assurance organization shall inspect and test materials provided by suppliers for conformance to specification requirements. Materials that have been inspected, tested, and approved shall be identified as acceptable to the point of use in the manufacturing or assembly processes. Controls shall be established to prevent inadvertent use of nonconforming materials.

3.15 PURCHASING DATA

The Contractor shall verify that all applicable specification requirements are properly included or referenced in purchase orders of articles to be used on transit buses.

3.16 MANUFACTURING CONTROLLED CONDITIONS

The Contractor shall ensure that all basic production operations, as well as all other processing and fabricating, are performed under controlled conditions. Establishment of these controlled conditions shall be based on the documented work instructions, adequate production equipment, and special working environments if necessary.

3.17 COMPLETED ITEMS

A system for final inspection and test of completed transit buses shall be provided by the quality assurance organization. It shall measure the overall quality of each completed bus.

3.18 NONCONFORMING MATERIALS

The quality assurance organization shall monitor the Contractor's system for controlling nonconforming materials. The system shall include procedures for identification, segregation, and disposition.

3.19 STATISTICAL TECHNIQUES

Statistical analysis, tests, and other quality control procedures may be used when appropriate in the quality assurance processes.

3.20 INSPECTION STATUS

A system shall be maintained by the quality assurance organization for identifying the inspection status of components and completed transit buses. Identification may include cards, tags, or other normal quality control devices.

3.21 INSPECTION SYSTEM SCOPE

The quality assurance organization shall establish, maintain, and periodically audit a fully-documented inspection system. The system shall prescribe inspection and test of materials, work in process, and completed articles. As a minimum, it shall include the following controls.

3.22 INSPECTION PERSONNEL

Sufficient trained inspectors shall be used to ensure that all materials, components, and assemblies are inspected for conformance with the qualified bus design.

3.23 INSPECTION RECORDS

Acceptance, rework, or rejection identification shall be attached to inspected articles. Articles that have been accepted as a result of approved materials review actions shall be identified. Articles that have been reworked to specified drawing configurations shall not require special identification. Articles rejected as unsuitable or scrap shall be plainly marked and controlled to prevent installation on the bus. Articles that become obsolete as a result of engineering changes or other actions shall be controlled to prevent unauthorized assembly or installation. Unusable articles shall be isolated and then scrapped.

Discrepancies noted by the Contractor or resident inspectors during assembly shall be entered by inspection personnel on a record that accompanies the major component, subassembly, assembly, or bus from start of assembly through final inspection. Actions shall be taken to correct discrepancies or deficiencies in the manufacturing processes, procedures, or other conditions that cause articles to be in nonconformity with the requirements of the contract specifications. The inspection personnel shall verify the corrective actions and mark the discrepancy record. If discrepancies cannot be corrected by replacing the nonconforming materials, the MTS shall approve the modification, repair, or method of correction to the extent that the contract specifications are affected.

3.24 QUALITY ASSURANCE AUDITS

The quality assurance organization shall establish and maintain a quality control audit program. Records of this program shall be subject to review by the MTS.

3.25 INSPECTION STATIONS

Inspection stations shall be at the best locations to provide for the work content and characteristics to be inspected. Stations shall provide the facilities and equipment to inspect structural, electrical, hydraulic, and other components and assemblies for compliance with the design requirements.

Stations shall also be at the best locations to inspect or test characteristics before they are concealed by subsequent fabrication or assembly operations. These locations shall minimally include underbody structure completion, body framing completion, body prior to paint preparation, water test before interior trim and insulation installation, engine installation completion, underbody dress-up and completion, bus prior to final paint touchup, bus prior to road test, and bus final road test completion.

3.26 RESIDENT INSPECTOR ROLE

The MTS shall be represented at the Contractor's plant by resident inspectors. They shall monitor, in the Contractor's plant, the manufacture of transit buses built under the procurement. The presence of these resident inspectors in the plant shall not relieve the Contractor of its responsibility to meet all of the requirements of this procurement. The MTS shall designate a primary resident inspector, whose duties and responsibilities are delineated in "Pre-Production Meetings" (Section 3.27); "MTS" (Section 3.28); and "Pre-Delivery Tests" (Section 3.31). Contractor and resident inspector relations shall be governed by the guidelines included in this Section 3, "Quality Assurance" Provisions.

3.27 PRE-PRODUCTION MEETINGS

The primary resident inspector shall participate in design review and pre-production meetings with the MTS. At these meetings the configuration of the buses and the manufacturing processes shall be finalized, and all contract documentation provided to the inspector.

No less than thirty (30) days prior to the beginning of bus manufacture, the primary resident inspector shall meet with the Contractor's quality assurance manager and shall conduct a pre-production audit meeting. They shall review the inspection procedures and finalize inspection checklists. The resident inspectors may begin monitoring bus construction activities two weeks prior to the start of bus fabrication.

3.28 MTS

Records and data maintained by the quality assurance organization shall be available for review by the resident inspectors. Inspection and test records for this procurement shall be available for a minimum of one year after inspections and tests are completed.

The Contractor's gauges and other measuring and testing devices shall be made available for use by the resident inspectors to verify that the buses conform to all specification requirements. If necessary, the Contractor's personnel shall be made available to operate the devices and to verify their condition and accuracy.

Discrepancies noted by the resident inspector during assembly shall be entered by the Contractor's inspection personnel on a record that accompanies the major component, subassembly, assembly, or bus from start of assembly through final inspection. Actions shall be taken to correct discrepancies or deficiencies in the manufacturing processes, procedures, or other conditions that cause articles to be in nonconformity with the requirements of the contract specifications. The inspection personnel shall verify the corrective actions and mark the discrepancy record. If discrepancies cannot be corrected by replacing the nonconforming materials, the MTS shall approve the modification, repair, or method of correction to the extent that the contract specifications are affected.

The primary resident inspector shall remain in the Contractor's plant for the duration of bus assembly work under this contract. Only the primary resident inspector or designee shall be authorized to release the buses for delivery. The resident inspectors shall be authorized to approve the pre-delivery acceptance tests. Upon request to the quality assurance supervisors, the resident inspectors shall have access to the Contractor's quality assurance files related to this procurement. These files shall include drawings, assembly procedures, material standards, parts lists, inspection processing and reports, and records of defects.

3.29 SUPPORT PROVISIONS

The Contractor shall provide office space for the resident inspectors in close proximity to the final assembly area. This office space shall be equipped with desks, outside and interplant telephones, high speed internet connection, drinking water, HVAC, file cabinet, chairs, and clothing lockers sufficient to accommodate the resident staff.

3.30 RESPONSIBILITY - ACCEPTANCE TESTS

Fully-documented tests shall be conducted on each production bus following manufacture to determine its acceptance to the MTS. These acceptance tests shall include pre-delivery inspections and testing by the Contractor, and inspections and testing by the MTS after the buses have been delivered.

3.31 PRE-DELIVERY TESTS

The Contractor shall conduct acceptance tests at its plant on each bus following completion of manufacture and before delivery to the MTS. These pre-delivery tests shall include visual and measured inspections, as well as testing the total bus operation. The tests shall be conducted and documented in accordance with written test plans, approved by the MTS.

Additional tests may be conducted at the Contractor's discretion to ensure that the completed buses have attained the desired quality and have met the requirements in "Technical Specifications" (Sections 5 and 6). The MTS may, prior to commencement of production, demand that the Contractor demonstrate compliance with any requirement in "Technical Specifications" (Sections 5 and 6), if there is evidence that prior tests have been invalidated by Contractor's change of supplier or change in manufacturing process. Such demonstration shall be by actual test, or by supplying a report of a previously performed test on similar or like components and configuration. Any additional testing shall be recorded on appropriate test forms provided by the Contractor and shall be conducted before acceptance of the bus.

The pre-delivery tests shall be scheduled and conducted with thirty (30) days notice so that they may be witnessed by the resident inspectors, who may accept or reject the results of the tests. The results of pre-delivery tests, and any other tests, shall be filed with the assembly inspection records for each bus. The under floor equipment shall be available for inspection by the resident inspectors, using a pit or bus hoist provided by the Contractor. A hoist, scaffold, or elevated platform shall be provided by the Contractor to easily and safely inspect bus roofs. Delivery of each bus shall require written authorization of the primary resident inspector. Authorization forms for the release of each bus for delivery shall be provided by the Contractor. An executed copy of the authorization shall accompany the delivery of each bus.

3.32 INSPECTION - VISUAL AND MEASURED

Visual and measured inspections shall be conducted with the bus in a static condition. The purpose of the inspection testing is to verify overall dimensional and weight requirements, to verify that required components are included and are ready for operation, and to verify that components and subsystems that are designed to operate with the bus in a static condition do function as designed.

3.33 TOTAL BUS OPERATION

Total bus operation shall be evaluated during road tests. The purpose of the road tests is to observe and verify the operation of the bus as a system and to verify the functional operation of the subsystems that can be operated only while the bus is in motion.

Each bus shall be driven for a minimum of fifteen (15) miles during the road tests. Observed defects shall be recorded on the test forms. The bus shall be retested when defects are corrected and adjustments are made. This process shall continue until defects or required adjustments are no longer detected. Results shall be pass/fail for these bus operation tests.

3.34 POST-DELIVERY TESTS

The MTS may conduct acceptance tests on each delivered bus. These tests shall be completed within fifteen (15) days after bus delivery and shall be conducted in accordance with written test plans. The purpose of these tests is to identify defects that have become apparent between the time of bus release and delivery to the MTS. The post-delivery tests shall include visual inspection and bus operations. No post-delivery test shall apply criteria that are different from the criteria applied in an analogous pre-delivery test (if any).

Buses that fail to pass the post-delivery tests are subject to non-acceptance. MTS shall record details of all defects on the appropriate test forms and shall notify the Contractor of acceptance, conditional acceptance, or non-acceptance of each bus within five days according to "Acceptance of Bus" (Section 2.18) after completion of the tests. The defects detected during these tests shall be repaired according to procedures defined in "Contractual Provisions" (Section 2, "Repairs After Non-acceptance" (Section 2.20).

3.35 VISUAL INSPECTION

The post-delivery inspection is similar to the inspection at the Contractor's plant and shall be conducted with the bus in a static condition. Any visual delivery damage shall be identified and recorded during the visual inspection of each bus.

3.36 BUS OPERATION

Road tests will be used for total bus operation similar to those conducted at the Contractor's plant. In addition, the MTS may elect to perform chassis dynamometer tests. Operational deficiencies of each bus shall be identified and recorded.

3.37 GUIDE FOR INSPECTION

The "actual" acceptance inspection will be a basic visual/performance review which will be supplemented by requirements learned through the effort of reviewing the first article and the manufacturers recommended inspection guidelines. The basic inspection will consist of at least the following elements:

- ✓ Visual safety inspection
- ✓ Check/fill fluids
- ✓ Rubbing hoses

- ✓ Rubbing electrical cables
- ✓ Loose electrical connectors
- ✓ Use of approved clamps and fastening components
- ✓ Routing of electrical wires and harnesses
- ✓ Location and performance of installed components
- ✓ Check for leaks, plumbing routing/clamps
- ✓ Critical fastener torque
- ✓ Driving test, performance, shifting, steering
- ✓ Exterior water leak test
- ✓ Brake deceleration, retarder activation
- ✓ Data collection, VIN #, license, serial #'s

SECTION 4

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #41 for additional information.

4.0 BASIC PROVISIONS WARRANTY AND CONTRACTOR WARRANTY REQUIREMENTS

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 original MTS each complete bus, and specific subsystems and components as follows.

4.1. 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 two (2) years or 100,000 miles, whichever comes first, beginning on the date of acceptance, or conditional acceptance of each bus under "Acceptance of Bus" (2.18). The warranty is based on regular operation of the bus under the operating conditions prevailing in the MTS's locale.

4.2 BODY AND CHASSIS STRUCTURE

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #31, #407 & #408 for additional information.

The body, body structure and structural elements of the suspension, such as the primary load carrying members of the bus structure, shall be warranted for the service life of the bus.

4.3 PROPULSION SYSTEM

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #32, #228, #229 & #409 for additional information.

Propulsion system components (fan to flywheel), specifically the engine, transmission and drive and non-drive axles shall be warranted to be free from defects and related defects for five (5) years or 300,000 miles, whichever comes first. Propulsion system manufacturer's standard warranty, delineating items excluded from this warranty, submitted in accordance with "Proposer Communications and Requests" (Section 1.4 of MTS's solicitation), is attached.

4.4 MAJOR SUBSYSTEMS

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #33, #231, #232, #234, #237, #238, #240, #410, #411, #412 & #413 for additional information.

Major subsystems shall be warranted to be free from defects and related defects, for three (3) years or 150,000 miles, whichever comes first. Major subsystem manufacturers standard warranty, delineating items excluded from this warranty, submitted in accordance "Proposer Communications and Requests" (Section 1.4 of MTS's solicitation), is attached. Items included as Major Subsystems are listed below:

- Brake system
- Destination signs
- Heating, ventilating, and air conditioning system
- Door systems
- Air compressor and dryer

- Wheelchair lift and ramp system
- Starter alternator
- Fuel storage system
- Fire suppression system

4.5 EXTENSION OF WARRANTY ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #241 for additional information.

If, during the warranty period, repairs or modifications on any bus, made necessary by defective design, materials or workmanship are not completed due to lack of material or inability to provide the proper repair for thirty (30) calendar days, the applicable warranty period shall be extended by the number of days equal to the delay period.

4.6 VOIDING OF WARRANTY

The warranties 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 shall also be void if the MTS fails to conduct normal inspections and scheduled preventive maintenance procedures as recommended in the Contractor's maintenance manuals and that omission caused the part or component failure. MTS shall maintain documentation, auditable by the Contractor, verifying service activities in conformance with the Contractor's maintenance manuals.

4.7 EXCEPTIONS AND ADDITIONS TO WARRANTY ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #416 for additional information.

The warranties shall not apply to the following scheduled maintenance items, normal wear-out items, and items furnished by the MTS, except insofar as such equipment may be damaged by the failure of a part or component for which the Contractor is responsible.

The warranties shall not apply to components and major subsystems specified by the MTS, and required by the MTS to be installed on the bus by the Contractor, if the following conditions apply: the MTS has rejected the Contractor's requests for approved equal under "Proposer Communications and Requests" (Section 1.4 of MTS's solicitation), and the component or major subsystem supplier declines to participate in this warranty; and the Contractor notifies the MTS in writing with, or before submitting, Contractor's original Offer. The Contractor shall pass on to the MTS any warranty, offered by a component supplier, that is superior to that required herein.

4.8 DETECTION OF DEFECTS

If the MTS detects a defect within the warranty periods defined in "Warranty Requirements" (Section 4.0), it shall within twenty (20) working days, notify the Contractor's representative. Within five (5) working days after receipt of notification, the Contractor's representative shall either agree that the defect is in fact covered by warranty, or reserve judgment until the subsystem or component is inspected by the Contractor's representative or is removed and examined at the MTS's property or at the Contractor's plant. At that time, the status of warranty coverage on the subsystem or component shall be mutually resolved between the MTS and the Contractor. Work shall commence to correct the defect within ten (10) working days after receipt of notification and shall be conducted in accordance with "Repairs by Contractor" (Section 4.13).

4.9 SCOPE OF WARRANTY REPAIRS

When warranty repairs are required, the MTS and the Contractor's representative shall agree within five (5) working days after notification on the most appropriate course for the repairs and the exact scope of the repairs to be performed under the warranty. If no agreement is obtained within the five (5) day period, the MTS reserves the right to commence the repairs in accordance with "Repairs by MTS" (Section 4.14).

4.10 OCCURRENCE AND REMEDY FOR FLEET DEFECTS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #34 for additional information

A fleet defect is defined as cumulative failures of any kind in the same components in the same or similar application where such items covered by the warranty and such failures occur in the warranty period in the specified proportion of the buses delivered under this contract. For deliveries of over fifty (50) buses, the proportion shall be fifteen (15%) percent. For deliveries of four (4) to forty-nine (49) buses the proportion shall be twenty (20%) percent.

The Contractor shall correct a fleet defect under the warranty provisions defined in "Repair Procedures" (Section 4.12). After correcting the defect, the MTS and the Contractor shall mutually agree to and the Contractor shall promptly undertake and complete a work program reasonably designed to prevent the occurrence of the same defect in all other buses and spare parts purchased under this contract. Where the specific defect can be solely attributed to particular identifiable part(s), the work program shall include redesign and/or replacement of only the defectively designed and/or manufactured part(s). In all other cases, the work program shall include inspection and/or correction of all of the buses in the fleet via a mutually agreed to arrangement.

4.11 EXCEPTIONS TO FLEET DEFECT PROVISIONS

The fleet defect warranty provisions shall not apply to MTS-supplied items such as fareboxes, radio and fare collection equipment, communication systems, and tires.

Fleet defect warranty provisions shall not apply to components and major subsystems specified by the MTS and required by the MTS to be installed on the bus by the Contractor, if the following conditions apply: the MTS has rejected the Contractor's requests for approved equal under "Proposer Communications and Requests" (Section 1.4 of MTS's solicitation) and the component or major subsystem supplier declines to participate in this warranty; and the Contractor notifies the MTS in writing with, or before submitting, Contractor's original Offer. The Contractor shall pass on to the MTS any warranty, offered by a component supplier, that is superior to that required herein.

4.12 REPAIR PERFORMANCE AND PROCEDURES ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #35, #244 & #418 for additional information.

The Contractor is responsible for all warranty-covered repair work. To the extent practicable, the MTS will allow the Contractor or its designated representative to perform such work. At its discretion, the MTS 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.

4.13 REPAIRS BY CONTRACTOR ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #16, #244 & #419 for additional information.

The Contractor or its designated representative shall begin work on warranty-covered repairs, within five (5) calendar days after receiving notification of a defect from the MTS. The MTS shall make the bus available to complete repairs timely with the Contractor repair schedule.

The Contractor shall provide at its own expense all spare parts, tools, and space required to complete repairs. At the MTS's option, the Contractor may be required to remove the bus from the MTS's property while repairs are being effected. If the bus is removed from the MTS's property, repair procedures must be diligently pursued by the Contractor's representative.

4.14 PARTS USED AND REPAIRS BY MTS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #420 for additional information.

If the MTS performs the warranty-covered repairs, it shall correct or repair the defect and any related defects utilizing parts supplied by the Contractor specifically for this repair. At its discretion, the MTS may use Contractor-specified parts available from its own stock if deemed in its best interest. Monthly, or at a period to be mutually agreed upon, reports of all repairs covered by this warranty shall be submitted by the MTS to the Contractor for reimbursement or replacement of parts. The Contractor shall provide forms for these reports.

4.15 CONTRACTOR SUPPLIED PARTS

The MTS may require that the Contractor supply new parts for warranty-covered repairs being performed by the MTS. These parts shall be shipped prepaid to the MTS from any source selected by the Contractor within ten (10) working days of receipt of the request for said parts. Parts supplied by the Contractor shall be Original Equipment Supplier (OEM) equivalent or superior to that used in the bus original manufacture.

4.16 DEFECTIVE COMPONENTS RETURN ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #421 for additional information.

The Contractor may request that parts covered by the warranty be returned to the manufacturing plant. The total cost for this action shall be paid by the Contractor. Materials should be returned in accordance with Contractor's instructions.

4.17 FAILURE ANALYSIS

The Contractor shall, upon specific request of the MTS, 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 sixty (60) days of the receipt of failed parts.

4.18 REIMBURSEMENT FOR LABOR ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #245, #422, #423, #424 & #425 for additional information.

The MTS shall be reimbursed by the Contractor for labor. The amount shall be determined by multiplying the number of man-hours actually required to correct the defect by a per hour, 5M mechanic, straight wage rate, twenty-five (25%) percent fringe benefits, plus fifty-eight (58%) percent overhead, plus the cost of towing in the bus if such action was necessary. These wage and fringe benefits rates shall not exceed the rates in effect in the MTS's service garage at the time the defect correction is made.

4.19 REIMBURSEMENT FOR PARTS

The MTS 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 and fifteen (15%) percent handling costs.

4.20 REIMBURSEMENT REQUIREMENTS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #36, #246 & #426 for additional information.

The Contractor shall reimburse the MTS for warranty labor and/or parts within sixty (60) days of receipt of warranty claim.

4.21 WARRANTY AFTER REPLACEMENT/REPAIRS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #248 for additional information.

If any component, unit, or subsystem is repaired, rebuilt or replaced by the Contractor, or by the MTS with the concurrence of the Contractor, the component, unit, or subsystem shall have the unexpired warranty period of the original. Repairs shall not be warranted if Contractor-provided or authorized parts are not used for the repair; unless the Contractor has failed to respond within five (5) days, in accordance with "Scope of Warranty Repairs" (Section 4.9).

The warranty on items determined to be fleet defects as defined in Section 4.8 shall be extended for the time and/or miles of the original warranty remaining at the time the fleet defect was identified. This extended warranty shall begin on the repair/replacement date for corrected items on each bus.

SECTION 5

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #42 for additional information.

35' ADVANCED DESIGN LOW FLOOR TRANSIT BUS TECHINCAL SPECIFICATIONS

⑥ → **5.0 GENERAL** ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #37 for additional information.

The following technical specifications represent MTS's minimum core requirements for 35' transit buses. Buses submitted for acceptance shall conform to the following core requirements. Deviations from this specification or substitutions from specified materials, parts and equipment shall not be undertaken without prior written approval from the MTS. (Section 1.4 and 1.5 "Proposers Communications and Requests" and "MTS Responses to Communications and Requests" for details on this process). Any exceptions, conditions, reservations, understandings or deviations must be explicitly and fully separately stated in your proposal. All exceptions, conditions, reservations, understandings or deviations will be evaluated by comparing it to the core requirements. If it is found to less than the minimum core requirements, MTS may view the proposal negatively and rate it accordingly.

The description of the any proposed bus must follow the same format as these technical specifications. Your response to this specification must address each categorical requirement in the same proceeding order.

MTS anticipates confirming the initial order quantity immediately after the acceptance of an offer is issued, approximately September 2007. MTS expects delivery of the first article bus to take place in the month of July 2008. Any deviation from the delivery of the first article bus must be submitted for approval by MTS as described in Section 1.4. Year one (1) of the Contract MTS will purchase a minimum of ten (10) or up to twenty (20) each 35' advanced designed heavy duty transit buses. This order shall include a first article (pilot bus), which shall be completed and delivered, with production beginning after a lapse of at least thirty (30) days after delivery of first article.

5.1 TECHNICAL REQUIREMENTS FOR THE BASIC BODY

These technical specifications define requirements for a heavy duty, 35' low floor, Compressed Natural Gas (CNG) Electric Hybrid powered transit bus, which shall be used for service on urban arterial streets. It shall have a minimum expected life of twelve (12) years or 500,000 miles which ever comes first and is intended for the widest possible spectrum of passengers, including children, adults, the elderly, and persons with disabilities. The buses shall have two (2) curbside doors, one (1) ahead of the first axle, and one (1) ahead of the drive axle.

The bus shall be fully compliant with the applicable requirements of the Americans with Disabilities Act (ADA) and any revisions published by the Architectural and Transportation Barriers Compliance Board or the Federal Transportation Administration for fixed route operations. Where these specifications exceed the requirements of ADA, the specification requirement shall apply.

These buses are to be utilized on a specialized demonstration service designated "Super Loop." Therefore, proposals must incorporate a unique exterior that is aesthetically pleasing with a sleek, modern look. MTS expects to purchase vehicles that are significantly distinguished in appearance from current Advanced Design Bus (ADB) concepts, with an exterior that appears progressive and modern, taking on the attributes of aerodynamic vehicle styling. Submitted proposals must include artist's renderings of what the exterior of the finished product will look like. The "Super Loop" service area infrastructure will utilize ten (10") inch raised platform stops; therefore bus step height shall be between thirteen and sixteen (13" and 16") inches from pavement.

5.2 WEIGHT OF BUS ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #2, #45 & #46 for additional information.

Total vehicle weight including a minimum of thirty (30) seated passengers plus allowing for fifty (50%) percent standees shall not exceed California State Law regulations regarding rated load carrying capacity of axles. Buses must comply with 23 C.F.R. part 658 of the Federal Department of Transportation Regulations and California Vehicle Code Sections 35550 - 35558. Buses not meeting these criteria will not be accepted.

During final inspection, the buses will be weighed. Buses exceeding the gross vehicle weight as stated on the bus specifications sheet, submitted with your proposal, will be assessed a penalty of $2.00 per pound for each pound over the stated weight. Buses exceeding California Weight limit may not be accepted.

⑦ → **5.3 PROPULSION SYSTEM** ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #427 for additional information.

The propulsion unit will be located in the rear of the bus and shall be a CNG/Electric Hybrid series configuration utilizing the ISE Hybrid Drive System, or approved equal. MTS will entertain and consider alternate hybrid systems but the CNG/Electric Hybrid series configuration utilizing the ISE Hybrid Drive System is our preference and will receive the highest technical rating. MTS will also entertain or consider proposals on a standard engine/transmission CNG propulsion system but again this is not our preference. Proposals that utilize a standard engine/transmission CNG propulsion system may receive a lower technical rating during evaluation. A proposer may submit proposals on multiple propulsion systems but you must summit a separate cost and price proposal for each system proposed. (See Section 5.86 CHASSIS SPECIFICATIONS).

5.4 EXTERIOR PANELS ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #47, #48, #429 & #429 for additional information.

Roof and crown panels shall be aluminum or fiberglass. Crown panel over entrance door shall be steel with steel inner reinforcement. Body side panels shall be of .080 inch thick aluminum or steel. Exit door shall be reinforced with heavy structural steel.

5.5 ALL SKIRT PANELS ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #49, #50, #51, #52, #53, #430 & #431 for additional information.

Skirt panels below rub-rail can be of Kevlar, aluminum or fiberglass construction. Rear structure above the floor line shall consist of an aluminum/steel bulkhead which separates the passenger compartment from a rear upper component compartment. The inside of this bulkhead shall be covered with dark carpet or fabric that is graffiti resistant. Edges of carpet material shall have trim or moldings to prevent peeling.

The engine compartment door shall be .063 inch thick aluminum hinged at the top with a stainless steel piano type hinge across the entire length of door. Two (2) gas (pneumatic) cylinder door props shall be provided on all service compartment doors and the air conditioner compartment door. Side closure door shall be hinged at top with stainless steel piano type hinge. All access doors will be secured with square key locks. All service compartments shall provide service lights to aid the mechanics when servicing bus on the road. All fasteners shall be treated to prevent corrosion.

The front and rear license plate bracket shall be flush mounted. Front license plate, which cannot be obstructed by bike rack, shall be mounted on the front of the bus in the area over the curbside turn signal lamp.

In no case will aluminum exterior body panels less than .063 inch thick be acceptable.

5.6 METAL PROTECTION ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #54 for additional information.

All metal panels and structural members shall be protected from rust and corrosion by thorough pretreatment prior to assembly operations. All frame tubing below window line shall be sprayed internally with an anticorrosion compound. This may include chemical treatment and prime painting as required to insure this protection.

Caulking compound shall be used to seal interior body seams, joints and overlapping panels against water, dust, moisture and foreign matter. The sealant shall also be suitable for protection against electrolysis between dissimilar metals. A sealant containing a chromate inhibitor is to be used.

Prior to final painting and detailing of the surface, the body shall be cleaned and spot-primed to protect bare spots, and a surface sealant shall be applied to insure paint adhesion.

The bus flooring, sides, roof, understructure, axle suspension components shall resist corrosion or deterioration from atmospheric conditions and road salts for a period of twelve (12) years or 500,000 miles which ever comes first. It shall maintain structural integrity and nearly maintain original appearance throughout its service life, provided that it is maintained by the Procuring Agency in accordance with the procedures specified in the Contractor's service manual. With the exception of periodically inspecting the visible coatings applied to prevent corrosion and reapplying these coatings in limited spots, the Contractor shall not require the complete reapplication of corrosion compounds over the life of the bus.

5.7 NOISE LEVELS / INTERIOR NOISE LEVEL ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #55 for additional information.

The combination of inner and outer panels and any material used between them shall provide sufficient sound insulation so that an exterior sound source having up to an 80 dB sound level measured at the outside skin of the bus shall have a sound level of 65 dB or less at any point in the interior of bus. These conditions shall prevail with all openings, including doors and windows, closed and with the engine and all accessories switched off. The vehicle-generated noise level experienced by a passenger at any seat location in the bus shall not exceed 75 dB and the operator shall not experience a noise level of more than 65 dB under the following test conditions. The bus shall be empty except for test personnel, not to exceed four (4) persons, and the test equipment. All openings shall

be closed and all accessories shall be operating during the test. The bus shall accelerate with the generator engine operating at full load from a standstill to 35 mph on a level, smooth, urban arterial road or highway in an area free of large reflecting surfaces within fifty (50') feet of the bus path. During the test, the ambient noise level in the test area shall be at least 10 dB lower than the bus under test. The bus shall not be operated in an "all electric mode" during this test. Instrumentation and other general requirements shall conform to SAE Standard J366.

5.8 EXTERIOR NOISE LEVEL

Airborne noise generated by the bus and measured from either side shall not exceed 75 dB under full power acceleration when operated at or below 35 mph at curb weight. The maximum noise level generated by the bus pulling away from a stop at full power shall not exceed 75 dB. The bus shall not be operated in an "all electric mode" during this test. The bus-generated noise with the generator engine at curb idle shall not exceed 60 dB. All noise readings shall be measured at a distance of fifty (50') feet from and perpendicular to the center of the lane of travel with all accessories operating. Instrumentation, test sites, and other general requirements shall conform to SAE Standard J366. The pull away test shall begin with the front bumper even with the microphone. The generator engine curb idle test shall be conducted with the rear bumper even with the microphone.

5.9 MISCELLANEOUS FASTENERS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #56 & #434 for additional information.

All bolts, nuts, washers, clamps, clips and like parts installed by contractor shall be stainless steel, zinc cadmium plated, or phosphate coated to prevent corrosion. All fasteners shall be manufactured in the USA or Canada.

DOORS

5.10 PASSENGER DOORS TYPE ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #435 & #485 for additional information.

Front door shall be double-stream, slide-glide type. Rear door shall be power open, power close slide-glide type.

5.11 EMERGENCY DOORS OPERATION ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #57 for additional information.

In the event of an emergency, it shall be possible to open the front and rear passenger doors manually from inside the bus using a force of no more than twenty-five (25) pounds after actuating an unlocking device at each door. The unlocking devices shall be clearly marked as "Door Emergency Release." The unlocking devices shall be clearly marked as an emergency only device and shall require two (2) distinct actions to actuate. The emergency door unlocking devices shall be accessible from the step well areas.

When these emergency devices are actuated, the door brake interlock system shall apply to stop the bus, regardless of the position of the door master switch.

Locked doors shall require a force greater than one hundred fifty (150) pounds to open manually. When the locked doors are manually forced to open, damage shall be limited to the bending of minor door linkage with no resulting damage to the doors, engines or complex door operating mechanism.

5.12 REAR DOOR OPENING FORCE

An opening rear door shall impose no more that a fifteen (15) pound force on a one (1") square-inch area of any passenger struck by it. A maximum force of thirty-five (35) pounds shall be required for passengers to free themselves after having either door open on them.

5.13 CLOSING DOOR FORCE

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

5.14 DOOR MASTER SWITCH

A door master switch shall be located in a compartment at the front of the bus which must be able to be opened without tools. This switch shall shut off the electrical circuits to the rear door and the rear door interlocks in the event of a malfunction of the door or interlock controls. With this master switch in the "Off" position, the rear door remains locked and the interlocks do not function. The switch shall not affect non-door interlocks from functioning. The switch shall not affect the operation of the front door or rear door emergency exit operation.

5.15 DOOR DIMENSIONS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #58 & #436 for additional information.

When open, the doors shall leave an opening no less than seventy-six and one-half (76½") inches in height. Front door shall have a minimum clear opening width of thirty-two (32") inches for the entire vertical height of the door.

5.16 DOOR GLAZING ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #59, #60 & #437 for additional information.

The upper section of rear doors shall be glazed for no less than forty (44%) percent of the respective door opening area of each section. The front door shall be glazed with a full length single glass section from top of door to bottom. The edge of a six (6") inch high curb shall be visible to the seated operator through the closed front door when the bus is more than twenty (12") inches from the curb. Front and rear door windows shall be glazed with "Heat Guard" product as manufactured by Transit Products and Services of Banning, CA, or approved equal. Glazing shall be ¼" inch tempered safety glass conforming to Federal Motor Safety Standards (FMVSS) 205 and applicable requirements of American National Standards Institute (ANSI) Z26.1-1997 and the Recommended Practices defined in SAE J673. The total visible light transmittance must not be below seventy-six (76%) percent as measured by American Society of Testing and Materials (ASTM) E-424. The LSG (light to solar gain ratio) must be a minimum of 1.28. The reflective heat gain must meet a minimum requirement of 150 British Termo Unit (BTU)/hr/sq.ft. Rear door glazing tint shall match that of side passenger windows.

5.17 DOOR HEIGHT ABOVE PAVEMENT

Door step height (floor height) shall be between thirteen and sixteen (13" and 16") inches from street in the unkneeled position when loaded to GVWR. It shall be possible to open and close passenger doors when the bus, loaded to GVWR, is not kneeled and parked with the curbside tires touching an eight (8") inch high curb on a street sloping toward the curb so that the street-side wheels are five (5") inches higher than the curbside wheels. It shall also be possible to open and close passenger doors when the bus, loaded to GVWR, is pulled up to within three (3") inches along side a ten (10") inch high raised platform stop.

5.18 FRONT DOOR ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #61& #439 for additional information.

Front door on the curbside ahead of the front wheelhouse shall be anodized aluminum, two section slide-glide types. Door hinges shall be stainless steel, joints shall be covered with rubber waterproofing seals.

Door shall be operated from a door control actuator at roadside of driver which controls a Vapor, or approved equal, pneumatic differential door engine mounted in a compartment over the door. A light with switch shall be provided in the door compartment to assist mechanics. Access door to compartment shall be hinged at the top and fastened with two (2) rotating knob-type latches.

5.19 FRONT DOOR AIR DUMP VALVE

An air dump valve that is connected to supply and/or exhaust all air from the front door engine shall be provided. With the valve in the "Off" position the front door shall be capable of being opened and closed manually. The door air dump valve shall be installed at the left of the operator's position and shall display the following operating instructions:

TURN HANDLE TO "OFF" FOR OPENING FRONT DOORS MANUALLY

5.20 REAR EXIT DOOR ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #62 for additional information.

The rear exit door shall be an aluminum two (2) section "power open, power close" slide-glide type door. A light with switch shall be provided in the door compartment to assist mechanics. The exit door of the vehicle shall be equipped with an acoustic system to secure passenger and other objects in the door way and between the fully opened or partially closed door panels. The Acoustic Sensing System shall be the "Class" System as manufactured by the Vapor Corporation, or approved equal.

5.21 DOOR PROJECTION

The exterior projection of the doors shall be minimized and shall not exceed six and one-half (6½") inches measured from the sidewall of the bus during the opening or closing cycles or when doors are fully opened. Projection inside the bus shall not exceed twenty (20") inches. The closing edge of each door panel shall have no less than two (2") inches of soft weather stripping. The doors, when closed shall be effectively sealed and the hard edges of the individual door frames shall be at least four (4") inches apart.

5.22 FRONT AND REAR DOOR CONTROL ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #63 for additional information.

The door control actuator shall operate the front and rear doors separately or simultaneously. A Vapor five (5) position door control, or approved equal, shall be mounted to the left of the driver positioned forward from center of the steering column. The control lever positions shall be as follows:

LEVER POSITION	FRONT DOOR	REAR DOORS
Extreme Forward	Open	Open
1st position forward	Open	Closed
Center position	Closed	Closed
1st position rear	Closed	Open
Extreme rear	Open	Open

Operator shall have full control of rear exit doors opening and/or closing function.

The door control actuator, dump valve, and adjacent parts shall be accessible through the front exterior electrical panel and/or interior side console.

SERVICE COMPARTMENTS AND ACCESS DOORS

5.23 EXTERIOR SERVICE COMPARTMENTS AND ACCESS DOORS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #64, #65, #66, #67 & #430 for additional information.

Conventional hinged doors with stainless steel piano type hinges and stainless steel pins shall be used for the engine compartment and for all auxiliary equipment compartments including doors for checking the quantity of and adding to the engine coolant and the windshield washer reservoir. The windshield washer reservoir door shall be located in the front of the bus. Access to all other compartments shall be from the outside rear of the bus. Generator engine coolant shall be added through the same access door as the coolant level is checked. The surge tank door shall be adequately sized for ease of accessibility.

No separate access doors shall be provided on the engine compartment door for the engine oil dipstick. Engine oil level shall be serviced through the main engine compartment door. Access openings shall be sized for easy performance of tasks within the compartment including tool operating space. Access doors shall be of rugged construction and shall be capable of withstanding severe abuse throughout the life of the bus. Access doors shall close flush with the body surface. All access doors 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 and closed position by counterbalancing with over-center or gas filled struts. Springs and hinges shall be corrosion resistant and shall last over the bus's service life. The utilization of 5/16" inch square key latches is permitted where necessary. Access doors shall hinge up and out of the way or fold flat against the bus body and shall be easily operable by one person. These doors, when opened, shall not restrict access for servicing components or systems and compartments shall be provided with service lights.

The rear hybrid propulsion system access door shall be latched closed by use of flush mounted square key latch mechanisms. The street side gas support strut shall have a locking mechanism that locks in the open position. The rear hybrid propulsion system access door shall incorporate an exterior handle mounted to lower center of door, as well as, an interior handle mounted off center on street side. A hinged and removable belt guard shall be provided, with a latching device, for easy access to engine belts, pulleys and accessories.

Undercarriage steering box access doors must be hinged for easy access and shall be latched closed by use of a flush mounted square key latch mechanism.

Curbside battery compartment door shall have a minimum of six hundred (600") square inches of expanded steel screen or other opening to aid in heat removal from the engine compartment.

Any hinged skirt panel is considered to be an access door for the purposes of this section.

5.24 UNDERBODY

Any underbody inspection covers shall be hinged and utilize square key latches. Inspection covers using screws is not acceptable.

5.25 INTERIOR ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #440 for additional information.

Rear bulkhead shall have access panels on curbside and street-side. Access panels shall be minimum 18" x 18" in size.

5.26 WINDSHIELD WIPERS AND WASHERS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #68, #441 #& #442 for additional information.

The bus shall be equipped with an electric operated Sprague, or approved equal, variable speed windshield wiper for each half of the windshield. Separate controls for each side shall be supplied. An independent variable intermittent wiper feature shall be provided to allow adjustment of the individual wiper speed between approximately 5-to-25 cycles per minute.

Wiper motors and arms shall be of the type to provide maximum visibility for the operator and shall not obstruct operators view when wipers are parked. No part of the windshield wiper mechanism shall be damaged by manual manipulation of the arms. At 60 mph, no more than ten (10%) percent of the wiped area shall be lost due to windshield wiper lift. Windshield wiper motors and mechanisms shall be easily accessible for repairs or service and shall be removable as complete units. Exposed hardware such as bolts and bushings shall be stainless steel or otherwise corrosion resistant.

Windshield washer system, when used with the wipers, shall deposit washing fluid evenly and completely wet the entire wiped area. The windshield washer shall incorporate an electric type pump. The windshield washer reservoirs shall be mounted at the front of the bus with provision for exterior fill through a small swing-open door at the front of the bus. Reservoir shall be a translucent plastic for easy determination of fluid level with a minimum capacity of two (2) U.S. gallons.

Windshield washer spray nozzles shall not be located anywhere on the windshield wiper arms. Wet arm wipers shall not be accepted.

WINDOWS

5.27 WINDSHIELD

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 fifteen (15°) degrees, measured above the horizontal and excluding any shaded band. The vertically downward view shall permit detection of an object three and one-half (3½') feet high no more than two (2') feet in front of the bus. The horizontal view shall be a minimum of ninety (90°) degrees above the line of sight. Any binocular obscuration due to a center divider may be ignored when determining the ninety (90°) degree requirement, provided that the divider does not exceed a three (3°) degree angle in the operator's field of view. Windshield pillars shall not exceed ten (10°) degrees 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 windshield shall not be used. The windshield glazing material shall have a ¼" inch or 6 mm nominal thickness laminated safety glass conforming to the requirements of ANSI Z26.1 Test Grouping 1A and the Recommended Practices defined in SAE J673. The glazing material shall have single density tint. The upper portion of the windshield above the operator's field of view shall have a dark, shaded band with a minimum luminous transmittance of six (6%) percent when tested in accordance to ASTM D-1003.

5.28 OPERATOR'S DOOR, AND PASSENGER SIDE WINDOWS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #3, #69, #70, #444 & #445 for additional information.

MTS has modified the specifications. Refer to MTS Request for BAFO Letter – See Item #4.

The total available window open area shall be 18,800 square inches minimum, excluding windshield and broken down as follows:

Curbside:	8,500 square inches minimum
Street-side:	8,800 square inches minimum
Rear Window (if equipped):	1,500 square inches minimum

If design is such that no rear window is incorporated, the total available window open area shall be 17,300 square inches minimum, excluding windshield.

Each driver and passenger window, front and rear door windows, shall be glazed with HEAT GUARD product as manufactured by Transit Products and Services located in Banning, CA, or approved equal. The driver's window assembly and passenger window assembly glazing shall be ¼" inch thick tempered safety glass, both conforming to FMVSS 205 and applicable requirements of ANSI Z26.1-1997. The total visible light transmittance for driver's and front door glazing must not be below seventy-six (76%) percent as measured by ASTM E-424. The LSG (light to solar gain ratio) must be a minimum of 1.28. The relative heat gain must meet a minimum requirement of 150 BTU/hr/sq. ft.

Passenger windows and rear door glazing shall be equally tinted with a twenty-eight (28%) percent luminous transmittance grey color tint.

All passenger windows shall be full fixed egress window assemblies with the exception of the driver egress window and destination window assemblies. The windows should be seamless in style giving the entire bus a "Euro" single body glazing appearance. All aluminum and steel material shall be black powder coated to help prevent corrosion. All passenger windows and driver's window shall be quick-change design, without "Glass Guard" as manufactured by Riconcorp located in Panorama City, CA, or approved equal.

The window glazing shall be designed such that it can be replaced in three (3) minutes or less by a trained technician. Glazing in the window assembly shall be replaced without removing the window from its installed position on the bus or manipulation of the rubber molding surrounding the glazing. The glazing shall be held in place mechanically by a formed metal extruded ring constructed to last the life of the vehicle. The metal extruded ring shall act as part of the structure of the window. The exterior glazing shall be mounted securely in the existing window extrusion without the sacrificial liner installed in the window assembly.

Driver's window is top fixed bottom ¾ slider. Rear slider can either be fixed or sliding. The driver's window shall open sufficiently allowing the seated driver to adjust the side view mirror arm and shall not obstruct the view of the driver when in the fully open or closed position. All windows must meet FMVSS 205 and all windows shall meet the minimum two hundred seventeen (217) requirements. The side destination sign window assembly shall be split fixed with the transom glazing clear. All emergency handles shall be located on the right side of the window assemblies. Emergency exit and window release lever operation instructions must be metal and be permanently attached to window frame rail adjacent to and within six (6") inches of each window release lever. Emergency window operating instructions shall be printed in both English and Spanish.

All windows rear of the exit door shall be equipped with "Scotchgard" 1004 Multi-Layer Protective Film for Glass as manufactured by 3M Industrial, or approved equal. This optically transparent, pressure sensitive polyester film tape shall be designed to protect the interior of the windows from intentional mutilation, scratching, and etching. A defaced layer shall have the ability to be quickly and easily removed, exposing a fresh protective sheet.

MIRRORS

5.29 GENERAL MIRRORS

The bus shall be equipped with a corrosion-resistant, outside rearview mirror on each side of the bus. The mirrors shall permit the operator to view the roadway along both sides of the bus, including the rear wheels. The mirrors are to be designed in such a way that allows for firm attachment to the bus to prevent vibration and loss of adjustment, but not so firmly attached that the bus or its structure is damaged when the mirror is struck in an accident. Mirrors shall retract or fold sufficiently to allow bus washing operations.

5.30 CURBSIDE MIRRORS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #525 for additional information.

The curbside mirror shall be Hadley-Elkhart (formally B&R Mfg.) Ref. Model BRT 1000 Series, or approved equal, remote adjustable 8"W x 15"H mirror. The mirror is to be constructed of high impact ABS plastic with a black finish. Mirror head shall be attached using a nitro-carbonizing ball and clamps into a cast aluminum arm powder coated flat black. The mirror design is a friction mount construction that allows for the mirror assembly to be folded during bus washing or when incidental contact occurs. The operator shall be able to adjust flat or convex portion remotely while seated in the driving position. The control for the remote positioning of the mirror shall be a single or dual switch or device. The flat and convex mirrors shall be electrically heated with heater being energized whenever the operator's heater and/or the defroster is activated. An Light Emitting Diode (LED) turn signal shall be incorporated in the outside portion of the mirror housing that allows visibility from the side and rear of the vehicle. The mirror is to be top mounted on the side of the bus and shall be mounted so that its lower edge is no less than eight (80") inches above the street surface with visibility through the wiper area of the windshield.

5.31 STREET-SIDE MIRRORS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #525 for additional information.

The roadside mirror shall be Hadley-Elkhart (formally B&R Mfg.) Ref. Model BRT 1000 Series, or approved equal, remote adjustable 8"W x 15"H mirror. The mirror is to be constructed of high impact ABS plastic with a black finish. Mirror head shall be attached using a nitro-carbonizing ball and clamps into a cast aluminum arm powder coated flat black. The mirror design is stationary. The operator shall be able to adjust flat or convex portion remotely while seated in the driving position. The control for the remote positioning of the mirror shall be a single or dual switch or device. The flat and convex mirrors shall be electrically heated with heater being energized whenever the operator's heater and/or the defroster is activated. An LED turn signal shall be incorporated in the outside portion of the mirror housing that allows visibility from the side and rear of the vehicle. The mirror is to be top mounted on the side of the bus and shall be mounted so that its lower edge is no less than eighty (80") inches above the street surface with visibility through the side driver's window with the window closed or fully open.

5.32 INTERIOR MIRRORS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #446 & #485 for additional information.

A fully adjustable Lucerix, or approved equal, 8"W x 15"H convex operator's rear view mirror with an approved type safety rim (black), shall be mounted just above the windshield to left of centerline.

Two (2) separate adjustable Lucerix, or approved equal, six (6") inch round flat mirrors with an approved type safety rim (black), shall be installed in combination (at right front of bus) to provide operator view of rear (exit) door and front mounted bike rack. One (1) adjustable Lucerix, or approved equal, twelve (12") inch round convex mirror with an approved type safety rim (black), shall be installed at rear exit door.

5.33 WHEELHOUSES ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #71 & #447 for additional information.

Wheel housings shall be minimum 14 gauge stainless steel. Front wheel housing covers shall be fiberglass "Gel-coated" (finish and color to be determined at pre-production meeting). Scuff guards constructed of .050" thick stainless steel rising ten (10") inches from floor level shall be located around the base of the front wheel house covers. Scuff guards shall be secured with stainless steel screws.

BUMPERS

5.34 GENERAL BUMPERS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #448 & #449 for additional information.

Front and rear bumpers shall be Romeo Rim, or approved equal, three piece, (color to be determined at pre-production meeting) energy absorbing bumpers. The rear bumper shall be of the anti-ride type. The bumper height shall be such that when one bus is parked behind another, a majority portion of the bumper faces will contact each other. The front and/or rear bumper systems shall utilize the following materials and construction:

Energy absorbing modules are to be self-restoring, integral urethane. The back structure is to be fabricated with aluminum and provide a single full length structural support for modules. The bumper construction shall permit easy disassembly and service of modules and structural components independently of one another.

5.35 FRONT BUMPER

No part of the bus, including the bumper shall be damaged as a result of any 5 mph impacts with a fixed, flat barrier perpendicular to the bus' longitudinal centerline of the vehicle. The bumper shall return to its original shape within ten minutes of the impact. The bumper shall protect the bus from damage as a result of 6.5 mph impacts at any point by the Common Carriage with Contoured Impact Surface defined in Figure 2 of FMVSS 301 loaded to 4,000 pounds parallel to the longitudinal centerline of the bus and 5.5 mph impacts into the corners at a thirty (30°) degree 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 by no more than seven (7") inches.

5.36 REAR BUMPER

No part of the bus, including the bumper shall be damaged as a result of any 2 mph impacts with a fixed, flat barrier perpendicular to the bus' longitudinal centerline of the vehicle. The bumper shall return to its original shape within ten minutes of the impact. When using a yard tug with a smooth, flat plate bumper two (2') feet wide contracting the horizontal centerline of the rear bumper, the bumper shall provide protection at speeds up to 5 mph over pavement discontinuities up to one (1") inch high, and at accelerations up to 2 mph/second. The bumper shall protect the bus from damage as a result of 4 mph impacts at any point by the Common Carriage with Contoured Impact Surface defined in Figure 2 of FMVSS 301 loaded to 4,000 pounds parallel to the longitudinal centerline of the bus or impacts into the corners at a thirty (30°) degree 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 by no more than seven (7") inches. The bumper shall also provide an integral "Anti-Ride" geometry to preclude the possibility of standing on the bumper.

5.37 TOW EYES ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #72 for additional information.

Two (2) tow eyes shall be installed at the front of the bus and at least one (1) at the rear.

5.38 UNDERCOATING ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #73 & #450 for additional information.

The entire bus understructure, including wheelhouses and step wells, but excluding the Air dryer, air lines, air valves, driveshaft and axles, shall be spray coated with a heavy duty Tectyl #185, or approved equal, aluminum pigmented, non-flammable, corrosion preventive compound. Particular attention should be directed to areas of water, salt and foreign matter collection and compaction on the underside of the bus.

5.39 SPLASH APRONS AND FENDERS ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #74 for additional information.

Exterior front and rear wheel well splash aprons (mud flaps) shall be fabricated of rubber and/or rubber and fiber composition. Splash aprons shall be a minimum ¼" inch thick and shall be installed behind the front and rear wheels and extend to within two and one-half (2½") inches of the ground. Rear axle splash aprons shall be of three (3) piece construction and extend the full width of the bus with a large center section protecting the open hybrid generator bay. Molded rubber fenders shall be installed at front and rear wheelhouses.

INTERIOR BODY SPECIFICATIONS

5.40 FLOORS ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #75, #76 & #77 for additional information.

The floor design shall consist of two (2) levels (bi-level construction). Aft of the rear door extending to the rear settee riser, the floor height may be raised to a height approximately eighteen (18") inches above the lower floor level. An increased slope shall be allowed on the upper level not to exceed three point five (3.5°) degrees off the horizontal floor line. Where the floor meets any vertical surfaces, such as platform risers, the surface edges shall be blended with a circular section of radius not less than one (1") inch. Similarly, a molding or cove shall prevent debris accumulation between the floor and the wheel housings. The vehicle floor in the area of the entrance and exit doors shall have a lateral slope not exceeding two (2°) degrees to allow for drainage.

The floor material shall be ¾" inch, pressure-treated 7-ply plywood with a preservative chemical that prevents decay and damage by insects. Preservative chemicals shall contain no EPA listed hazardous chemicals. Plywood shall be installed with the highest grade veneer up. Pressure treated plywood shall have a moisture content at or below fifteen (15%) percent. A barrier shall be installed to prevent contact by road salt with the plywood panels. Shaped and cut edges shall be sealed with linseed oil and titanium dioxide.

Floor may be integral with the basic structure or mounted on the structure securely, using corrosion resistant fasteners, 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. The use of adhesives to secure the floor to the structure shall be allowed only in combination with the use of bolt or screw fasteners and its effectiveness shall last throughout the life of the bus. 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 inches from the normal plane. The floor shall withstand the application of two point five (2.5) times gross load weight without permanent detrimental deformation. Floor with coverings applied, shall withstand a static load of at least one hundred fifty (150) pounds applied through the flat end of a ½" inch diameter rod, with 1/32" inch radius without permanent visible deformation. Any gaps and fastener heads shall be caulked and sanded prior to application of adhesive for floor covering.

5.41 FLOOR COVERING ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #78 & #451 for additional information.

Floor covering shall be Tarabus MK Series, color and pattern shall be determined at pre-production meeting and shall be transit grade, flooring material. Floor covering shall be installed to all floor areas up to the bottom of the seat rail including the driver platform and riser, rear deck riser, rear wheel housings, tops of front wheel housings and rear settee riser. A trim railing shall be installed that overlaps the top edge of floor covering along the seat rails from the front wheel housings to the rear door on the curbside and to the rear deck riser on the street-side of the bus.

A two (2") inch wide yellow standee line shall be provided to separate the passenger boarding entrance area from bus proper and a twenty-one to twenty-nine (21" to 29") inch yellow step area shall be provided at the rear door using Tarabus Safebus MK Series 6203 Borneo or approved equal. Nosings at the outside edge of the entrance and exit doors and at the rear steps to the upper deck shall utilize Altro Transflor yellow vinyl nosings, or approved equal. Entire plywood area shall be thoroughly sanded and cleaned prior to application of adhesive. Double faced bond technique shall be employed, i.e. adhesive shall be applied to back side of floor covering and wood floor so as to provide a permanent bond that will remain bonded for the service life of the bus.

The floor covering shall be seamless or seams shall be permanently sealed so as to eliminate the permeation of water to the wood flooring. Seams shall be bevel cut in preparation for welding of seams. Trim moldings shall be utilized on any exposed edges of floor covering material and shall be fabricated from stainless steel or anodized aluminum.

5.42 INTERIOR PANELS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #79 & #80 for additional information.

Interior panels for the headlining and the areas between the windows from window line up to the ducting/lighting fixtures shall be 1/10" inch thick, hard-faced Melamine panels. Pattern/color for ceiling (headlining) panels and pier panel mullions shall be determined at the pre-production meeting. Sidewall panels from window line down to seat rail shall be leather grained aluminum.

Panels shall be heat and scratch resistant with hard board back. Panel joints shall be trimmed with stainless steel strips. Other trim strip materials shall be treated to resist rust, corrosion and other weathering and aging effects.

The front crown panel, driver's area and doors shall be painted non-glare black acrylic enamel. Dashboard upper section shall be smooth black metal or fiberglass construction. Lower area of the dash shall be painted non-glare black acrylic enamel. Rear wall above seat back shall be carpeted material (color to be determined at pre-production meeting) and will require trim or molding to prevent passengers from peeling it off.

5.43 MODESTY PANELS

Modesty panels shall be provided along the front edge of the rear upper level on both the curbside and street-side. Panel material shall be 0.060 inch leather grain finish aluminum. Panels shall utilize a metal edge trim on top, bottom, and inboard edges. Inboard edge of panels shall be attached to vertical aisle stanchions, outboard edge of panels shall be attached to bulkheads, and top/bottom edges of panels shall be attached to horizontal grab rails, which shall themselves be attached to bulkheads and aisle stanchions. The inboard edge of the panels shall be attached to vertical stanchions in the same manner as are the top and bottom edges. Panels shall extend to within two and one-half to three (2½" to 3") inches of floor to facilitate cleaning.

Plexiglas® barrier panels shall be provided on curbside forward and aft of the exit door to protect passengers on adjacent seats. Exit door barrier panels shall be ½" inch thick polycarbonate resin thermoplastic or granite acrylic resin material approximately twelve to fourteen (12" to 14") inches in width and shall extend high enough to prohibit passengers from getting an arm or hand caught by the door during opening and/or closing function. Barrier panels at exit door shall be protected on both sides with "Scotchgard" 1004 Multi-Layer Protective Film for Glass with stepped edge as manufactured by 3M Industrial, or approved equal. This optically transparent, pressure sensitive polyester film tape shall be designed to protect the glazing from intentional mutilation, scratching, and etching. A defaced layer shall have the ability to be quickly and easily removed, exposing a fresh protective sheet.

5.44 ROOF ESCAPE/VENTILATION HATCH ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #452 for additional information.

Two (2) low profile combination roof escape and ventilation hatches as manufactured by Transpec Worldwide, or approved equal, shall be provided. The hatches shall be located approximately over the front and rear axles. The hatch opening shall be not less than twenty-three to twenty (23" x 20") inches and shall have four (4) positions for ventilation. When open with the bus in motion, this ventilator shall provide fresh air inside the bus and be capable of being positioned as a scoop with either the leading or trailing edge open no less than four (4") inches, or with all four edges raised simultaneously to a height of no less than three and one-half (3½") inches. Roof hatches shall be sealed to prevent entry of water when closed and shall incorporate a lever type handle for emergency exit release. Hatches shall be labeled as emergency exits with instructions which shall be clearly visible in English and Spanish.

5.45 PASSENGER SEATING AND CAPACITY ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #81, #82, #83 & #453 for additional information.

All seats shall be "Insight" model with cushioned vandal resistant CR-50 upholstered inserts throughout, as manufactured by American Seating Company, or approved equal. The seating arrangement shall provide the maximum number of seats possible using a minimum twenty-eight (28") inch hip to knee room spacing. There shall be no less than thirty (30) total seats including the two (2) wheelchair tie down area seats. All seats shall be forward facing two (2) seat transverse type cantilever mounted, with the exception of two (2) longitudinal type seats for elderly/handicap passengers in extreme forward positions. Rear settee is to be separated in a 1-3-1 configuration and hinged separately for access to the hybrid engine and generator compartment. All elderly/handicap and wheelchair seats shall fold up and lock in the up position only. All forward facing seats shall have integral stainless steel grab rails at top of seat back and stainless steel back panels. All seats must meet or exceed FMVSS requirements and must conform to the same for installation requirements.

Seat plastic trim color and cushioned CR-50 inserts material pattern and color shall be determined at the pre-production meeting. The two (2) wheelchair securement areas shall be equipped with Advanced Restraint Module (A.R.M.) from American Seating with QRT deluxe retractor by Q-Straint, or approved equal. All wheelchair seating/layouts must meet or exceed ADA requirements.

5.46 OPERATOR'S SEAT

The operator's seat shall be a premium quality Recaro Ergometro Model AM80, or USSC Q91 Series (w/o side bolsters), or approved equal. The driver's seat shall be comfortable and adjustable so that persons ranging in size from the 95th percentile male to the 5th percentile female may operate the bus. While seated, the operator 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. The angle formed between the seat back and the seat cushion shall be adjustable from a minimum of no more than ninety (90°) degrees (upright) to at least one hundred five (105°) degrees (reclined), with infinite adjustment in between. Height of the seat shall be adjustable so that the distance between the top of the uncompressed seat cushion and the floor may vary between a minimum of fourteen (14") inches to a maximum of twenty (20") inches, with a minimum of a six (6") inch range of adjustment. The operator's seat shall have a minimum of nine (9") inches of adjustment in the fore and aft direction without contacting any bus part. The seat cushion shall also be adjustable. The seat pan cushion shall adjust in its slope from no less than plus twelve (12°) degrees (rearward "bucket seat" incline), to no less than minus five (-5°) degrees (forward slope). The seat shall be installed in the same location in all buses. The operator's seat shall be appropriately dampened to support a minimum weight of 380 pounds and incorporate a dynamic load damper to augment the springing and padding in the cushions. Rubber bumpers shall be provided to prevent metal-to-metal contact if the seat "bottoms out." Any electrical and/or air connections to the seat shall have quick disconnect provisions to allow easy removal and replacement of the seat. Seat back and seat bottom cushion shall be black upholstery fabric on center portion of seat face, with black vinyl on sides and edges, and no welt cord shall be used. Foam shall be molded polyurethane with pneumatic lumbar support and pneumatic suspension system. Seat cushions shall be of long-lasting, polyurethane fire resistant foam. Particular attention shall be given to providing a seat which is comfortable in warm,

humid weather and which gives full consideration to long periods of occupancy. Operator's seat shall be mounted so that it can be removed by the maintenance personnel, by one mechanic in one half (½) hour for service or repair. This may include the use of captive fasteners to preclude the necessity for two (2) mechanics to perform the procedure.

The operator's seat shall be equipped with a fully retractable seat belt and separate shoulder harness restraint system. The shoulder harness and seat belt shall provide full adjustment of each strap. The belts shall be fastened to the seat so that the operator can adjust the seat without resetting the seat belt. Seat belts shall be stored in automatic retractors. This system shall not incorporate inertia type retractors. The seat belt shall extend from left to right and shall have a usable travel of at least sixty (60") inches measured from the open end of the protective boot to the end of the buckle or latch plate.

5.47 OPERATOR AREA/DASH PANEL

The operator's work area shall be designed to minimize glare to the maximum extent possible. Objects within and adjacent to this area shall be matte black 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 operator's area shall be avoided. Such objects include dash panels, switches and controls, cowlings, barriers, access panels, window frames, visors, etc. Any interior lighting forward of standee line shall be controlled by the operator. A dash route/fare card holder, driver's storage compartment, an 8-pocket acrylic Plexiglas® route map holder (see Operator Barrier section below), radio/GPS antenna access, and waste baskets shall be furnished and installed by manufacturer. Additional provisions for driver's area are included below.

5.48 OPERATOR BARRIER

The operator's barrier shall be a smooth, esthetically pleasing design, providing the appearance of an integral unit as opposed to a conglomeration of different constructive elements. The operator's barrier shall be constructed so that radio/camera equipment box, driver's storage box, schedule holder, and associated equipment are one integral unit. The design and construction of the operator barrier shall require MTS approval.

5.49 DOCUMENT HOLDER

An acrylic Plexiglas® holder designed to hold vehicle registration and/or insurance documents shall be provided. The document holder shall be approximately 10" x 10" inches in size and be mounted in driver's area.

5.50 OPERATOR'S COAT HOOK

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #84 for additional information.

A stainless steel coat hook, with ball and separate strap, shall be provided and mounted in operator's area such that when in use does not interfere with driving operation or obstruct the operator's view.

5.51 OPERATOR'S STORAGE LOCKER ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #85 & #454 for additional information.

A driver storage locker shall be provided. Storage locker shall be designed and integrated into the driver's barrier. Storage locker for the driver shall be approximately 18" x 18" x 18" in size and shall include a door with a latch. Design of locker will require MTS approval.

5.52 VISOR

One (1) padded sun visor shall be provided for the operator's side of the windshield. Visor shall be shaped and sized adequately to minimize light leakage between the visor and windshield pillars. Visor shall store out of the way and shall not obstruct air flow from climate control system or interfere with other equipment such as the radio handset or destination sign control. Sun visor construction and materials shall be strong enough to resist breakage during adjustments.

One (1) padded sun visor shall be provided for the driver's side window. Visor shall be shaped and sized adequately to minimize light leakage between the visor and driver's side window. Visor shall store out of the way and shall not obstruct air flow from climate control system or interfere with other equipment such as the radio handset or destination sign control. Sun visor construction and materials shall be strong enough to resist breakage during adjustments.

PASSENGER ASSISTS

5.53 GENERAL PASSENGER ASSISTS

Passenger assists in the form of full grip, vertical stanchions or handholds shall be provided for the safety of standees and for ingress/egress. Passenger assists shall be convenient in location, shape and size for both the 95th percentile male and the 5th percentile female standee. Starting from the entrance door and moving anywhere in the bus and out the exit door, a vertical assist shall be provided either as the vertical portion of seat back assist or as a separate item so that a 5th percentile female passenger may easily move from one assist to another using one hand and the other without losing support. All passenger assists in the front door and vestibule area shall be powder coated bright yellow to aid visually impaired passengers.

Interior handrails and stanchions shall permit sufficient turning and maneuvering space for wheelchairs and other mobility aids to reach a securement location from the ramp.

Handrails and stanchions shall be provided in the entrance to the vehicle in a configuration which allows person with disabilities to grasp such assists from outside the vehicle while starting to board, and to continue using such assists throughout the boarding and fare collection process. Handrails shall have a cross-sectional diameter between one and a quarter and one and one-half (1¼" and 1½") inches or shall provide an equivalent grasping surface, and have eased edges with corner radii of not less than ¼" inch. All passenger assists shall permit a full hand grip and shall be placed to provide a minimum one and one-half (1½") inches knuckle clearance from the nearest adjacent surface. Without restricting the vestibule space, the assist shall provide support for a boarding passenger from the front door through the boarding procedure. Passengers shall be able to lean against the assist for support while paying fares.

5.54 REAR DOORWAY ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #86 for additional information.

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 panels. Rear doors shall be fitted with assists at the modesty panel to aid in the exiting of passengers. A 5th percentile female shall be provided assists that are functionally continuous during the entire exiting process and the assists shall be no more than four (4") inches from the outside edge of the lower step tread.

A full-size vertical assist that is functionally continuous with the overhead assist shall be provided on the aisle side of the modesty panels at the step wells. A full size assist no less than thirty-six (36") inches above the average step tread surface shall be provided in the middle of the rear door step well extending from the aisle to the outside edge of the lower step.

5.55 VESTIBULE

The aisle side of the operator's barrier, the wheel housings and when applicable the modesty panels shall be fitted with vertical passenger assists panels that are functionally continuous with the overhead assist and that extend to within thirty-six (36") inches of the floor. These assists shall have sufficient clearance from the barrier to prevent inadvertent wedging of a passenger's arm or hand. A horizontal passenger assist shall be located across the front of the bus and shall prevent passengers from sustaining injuries on the 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 front door assist shall be no less than thirty-six (36") inches above the floor or the average step tread surface. 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 operator's barrier, wheel housings, or front modesty panel.

5.56 OVERHEAD ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #87 for additional information.

Except forward of the standee line and at the rear door, a continuous, full grip overhead assist shall be provided. This assist shall be convenient to standees anywhere in the bus and shall be located over the center of the aisle seating position of the transverse seats. The assist shall be no less than seventy-two (72") inches above the floor. Overhead assists shall simultaneously support one hundred fifty (150) pounds on any twelve (12") inch length. No more than five (5%) percent of the full grip feature shall be lost due to assist supports.

Overhead handrails shall be provided which shall be continuous except for a gap at the rear doorway.

Handrails and stanchions shall be sufficient to permit safe boarding, on-board circulation, seating and standing assistance and alighting by persons with disabilities.

The vertical stanchion immediately behind the operator shall either terminate at the lower edge of the aisle-facing seats, if applicable, or be "dog-legged" so that the floor attachment does not impede or interfere with wheelchair footrests. If the operator's seat platform must be passed by a wheelchair or mobility aid user entering the vehicle, the platform, to the maximum extent practicable, shall not extend into the aisle or vestibule beyond the wheel housing.

The minimum interior height along the path from the lift to the securement location shall be seventy-two (72") inches.

A crash resulting in a one (1') foot intrusion shall not produce sharp edges, loose rails, or other potentially dangerous conditions associated with a lack of structural integrity of the assist. Any joints in the assist structure shall be underneath supporting brackets and securely clamped to prevent passengers from moving or twisting the assists. All components of the passenger assists including functional components shall be of anodized aluminum or stainless steel. Assists shall withstand a force of three hundred (300) pounds applied over a twelve (12") inch lineal dimension in any direction normal to the assist without permanent visible deformation. Brackets, clamps, screw heads and other fasteners used on the passenger assists shall be flush with the surface and free of rough edges.

5.57 FRONT DOORWAY

Front doors or the passenger entry area shall be fitted with ADA compliant assists. Assists shall be as far outward as practicable, but shall be no further than four (4") inches from the outside edge of lower step tread, shall provide a near vertical hand grip at the outer edge of the door, 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 assists and the assists on the wheel housing or on the front modesty panel.

5.58 LONGITUDINAL SEATS

Longitudinal seats shall have vertical assists located between every other designated seating position. 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 fifty-two (52") inches apart or be functionally continuous for a 5th percentile female passenger. (The Configuration of assists will be reviewed and determined at the pre-production meeting with final configuration approved by MTS).

5.59 ADDITIONAL VERTICAL ASSISTS

Up to eight (8) vertical passenger assists shall be installed at the aisle side of forward facing seats from the seat grab handle to the overhead passenger assist. (The configuration of assists will be reviewed and determined at the pre-production meeting with final configuration approved by MTS).

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #455 for additional information.

5.60 GENERAL PAINTING AND LETTERING

Color numbers, color chips, locations, typeface, logo grid, drawings and specifications for all interior and exterior requirements will be furnished to the bus manufacturer at pre-production meeting.

5.61 EXTERIOR PAINT

The exterior of the bus shall be painted with up to four metallic colors plus a clear coat and be of polyurethane paint which is baked dry (actual colors to be provided at the pre-production meeting). The bus manufacturer shall provide line drawings of the front, rear, driver's side and passenger side of the bus to MTS. MTS will assist in the layout of the individual colors and their locations for the manufacturer's name and number of the paints.

5.62 ROOFTOP NUMBERS

1. There shall be up to a four digit rooftop number on each bus. Numbering shall be determined at the pre-production meeting.
2. All numbers shall be black decals; edge sealed and shall be block style.
3. Numbers shall be located either on rooftop canopy or on rooftop to rear of canopy and shall read from street-side to curbside centered across bus.
4. Numbers shall be minimum:

A.	Height:	30"
B.	Width:	16"
C.	Width of Print:	3"
D.	Space between numbers:	6"

5.63 LETTERING AND SIGNING-EXTERIOR

All exterior markings shall be manufactured from 3M "Scotchlite' 580 series material, or approved equal. Light colored decals over dark paint and dark colored decals over light paint. All exterior decals, lettering, logos, and numbers shall be edge sealed. Colors of decals shall be determined at the pre-production meeting.

5.64 LOGOS

All logo placement, colors, and sizes will be provided at the pre-production meeting.

5.65 NUMBERING

Four (4) sets of four (4) numbers each, six (6") inches high shall be affixed to the exterior of the bus, one (1) set to each of four (4) locations as follows: On front of bus at top front curbside corner, over front door, over driver's window, and on rear of bus at upper street-side corner. Actual vehicle numbers shall be provided at the pre-production meeting.

5.66 DISABLED SIGN

Three (3) international symbols indicating wheelchair accessibility shall be applied, one (1) to the front, one (1) to the curbside, and one (1) to the rear.

5.67 DECAL – FRONT

Information will be provided at the pre-production meeting.

5.68 DECAL – REAR

Information will be provided at the pre-production meeting.

5.69 KNEELING AND LIFT DESIGNATION

The word "Kneeling" with an arrow pointed down and the word "Lift" shall be applied just rear of the front entrance and just rear of the rear exit door. Lettering shall be one (1") inch tall. Exact location will be specified by MTS.

5.70 CALIFORNIA NUMBER DESIGNATION

California Operator Identification numbers shall be applied to both sides toward the rear of the bus. Lettering shall be approximately two (2") inches tall by fourteen (14") inches long. Location shall be on lower skirt aft of rear axle. Actual number is operator distinctive and shall be provided at pre-production meeting.

5.71 BATTERY DISCONNECT DECAL

Decal shall be on the exterior of the battery access door and shall read "BATTERY DISCONNECT."

5.72 AIR TANK DRAIN DECAL

Decals indicating the location of all air tank drain valves shall be provided.

5.73 INTERIOR PAINT ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #88 for additional information.

The painted surfaces of the ceiling above the driver's compartment shall be painted with black acrylic enamel, matte finish and applied over a cleaned, primed surface.

The lower dash, inside of entrance and exit doors, windshield frame area, and instrument case shall be painted with semi-gloss black acrylic enamel applied over a cleaned and primed surface.

5.74 LETTERING AND SIGNING - INTERIOR

Markings shall be "Scotchcal" only, elastomeric, pigmented file, die-cut, pre-spaced, with pressure-sensitive adhesive. All marking materials shall be applied in strict conformance with the film manufacturer's recommendations as to surface preparation and application procedure. No hand lettering or stenciling shall be permitted.

Decals shall be furnished and installed by the bus manufacturer and must be in English and Spanish.

Vehicle Number - One (1) each, four (4) digit set of six (6") inch numbers on destination sign door.

5.75 NO SMOKING

No Smoking - No Eating - No Radio Playing on destination sign door.

5.76 WHEELCHAIR RAMP OPERATING INSTRUCTIONS

Wheelchair ramp operating instructions shall be provided in the operator's area pertaining to dash control buttons and switches. Wheelchair ramp operating instructions shall also be provided in the manual control operation compartment if bus is equipped with manual controls.

5.77 PRIORITY SEATING SIGNS

Contractor shall provide and install sign(s) which indicate that seats in the front of the vehicle are priority seats for persons with disabilities, and that other passengers are to make such seats available to those who wish to use them. At least one (1) set of forward-facing seats shall be so designated.

Each wheelchair or mobility aid securement location shall have a sign designating it as such.

Characters on signs required by this section shall have a width-to-height ratio between 3:5 and 1:1 and a stroke width-to-height ratio between 1:5 and 1:10, with a minimum character height (using an upper case "x") of 5/8" inch, with "wide" spacing (generally, the space between letters shall be 1/16 the height of upper case letters), and shall contrast with the background either light-on-dark or dark-on-light.

5.78 INTERNATIONAL SYMBOL

One (1) International Wheelchair Lift symbol shall be applied immediately below the bottom of the window adjacent to each wheelchair securement location.

5.79 REAR DOOR OPERATION

Passenger rear door operating instructions shall be in English and Spanish to read as follows: (Caution! Stand clear door controlled by driver). Spanish to read as (Cuidado! mantenga distancia la puerta esta controlada por el conductor).

5.80 VANDALISM/NO SMOKING

Two (2) "Vandalism is a Crime" and "No Smoking" signs over rear longitudinal passenger seats and in the standee windows on both the curbside and roadside shall be provided.

5.81 NO RADIOS/NO EATING

Two (2) international symbols, "No Smoking/No Radios/No Eating" signs over rear longitudinal passenger seats (curbside and roadside) shall be provided.

5.82 EMERGENCY ESCAPE HATCH INSTRUCTION

Emergency escape hatch identification and operating instructions in Spanish and English shall be provided.

5.83 RADIATOR FILL CAUTION

Radiator fill door "caution" on inside of door shall be provided.

5.84 EMERGENCY EXIT INSTRUCTIONS

Emergency Exit and Window Release Lever operations instructions - MUST BE METAL and riveted to window frame rail within six (6") inches and adjacent to each release lever.

5.85 WATCH YOUR STEP SIGN (PISE CON CUIDADO)

"Watch Your Step" signs shall be installed at entrance door area, at exit door area, at the steps to the rear deck area. The exact locations will be specified by MTS. All bilingual signs are to be pre-approved before installation.

CHASSIS SPECIFICATIONS

5.86 GENERAL CHASSIS SPECIFICATIONS ←

MTS has modified the specifications. Refer to MTS Request for BAFO Letter – See Item #3.

This section, broadly titled "Chassis" details the requirements for primary and secondary (accessory) mechanical equipment of the transit bus.

③ → ⑦ → 5.87 HYBRID PROPULSION SYSTEM (MTS PREFERED PROPULSION SYSTEM) ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #427, #456, #457 & #458 for additional information.

The propulsion unit shall be located in the rear of the bus and shall be a CNG/Electric Hybrid series configuration utilizing the ISE Hybrid Drive System, or approved equal. Proposals shall also include pricing for an optional standard engine/transmission CNG propulsion system. Following are the minimum requirements for the series electric hybrid propulsion system.

The hybrid generator system shall include a CNG fueled engine and generator along with the required support systems assembled in a modular unit and cradle mounted in the rear of the bus. The engine shall be a Cummins B Gas Plus 5.9 liter six cylinder natural gas engine or approved equal. The engine shall have a minimum of 230 HP @2800 RPM and peak torque of 500 LB-FT @ 1600 RPM. The engine configuration shall comply with California Air Resources Board low-NOx+NMHC standard of 1.8 g/bhp-hr and low particulate matter standards. Total engine displacement shall be 359 cubic inches and the engine compression ratio shall be 10.5:1. The generator shall be a Siemens 165 kW liquid cooled unit or approved equal.

The propulsion motor configuration shall include two (2) Siemens 85 kW continuous duty motors, or approved equal that will propel the bus through a Flenders combining gearbox, or approved equal. The propulsion motors shall be based on the ELFA dual motor and controller system as manufactured by Siemens AG, or approved equal. The motors in combination shall have a power rating of 170 kW (228 HP) continuous and 288 kW (386 HP) peak. The combining gearbox shall accommodate 2 AC motor inputs and a peak input torque of 2 x 332 ft-lb. Output torque peak shall be 2656 ft-lb. Maximum input speed shall be 10,000 RPM with a drive ratio of 4.05.

Twin Siemens ELFA inverters shall be provided. Each inverter module is to contain two 120 kW (161 HP) inverters. Power to the inverters is to be provided by the generator. One inverter will be configured to provide 230 VAC for all electrically driven accessories and will provide AC power to one of the Siemens propulsion motors. The second inverter shall provide DC power from the generator and provide AC power to the second Siemens propulsion motor. The inverters also provide the switching for the battery energy storage system and the braking resistors.

The energy storage subsystem shall be based on the Cobasys Nickel Metal Hydride battery pack, or approved equal. Should testing indicate that an ultracapacitor pack is required then a properly rated unit shall be provided. The energy storage subsystem shall provide for power demands beyond the output of the generator system. In addition, the energy storage system shall provide energy recapture during regenerative braking opportunities presented during bus operation (coasting and deceleration).

Regenerative braking shall be provided to maximize kinetic energy capture for the energy storage subsystem. Transitions between the hybrid regenerative braking system and bus air system braking shall be accomplished smoothly with no perceptible lurching by the bus. Blending of the regenerative braking and bus brake system shall be provided automatically and shall be fail safe in design. Brake resistors shall be provided and adequately sized to bleed off excess braking energy should the energy storage subsystem be full or the desired level of regenerative power exceed the level that the energy storage subsystem can accept. The regenerative braking system shall be cut out in the event of a vehicle ABS event.

Hybrid system controls shall be provided by the vehicle controller working on a high speed automotive J1939 multiplexing system. Bus architecture shall be provided by the Controller Area Network or CAN controller. All subcomponent communications will take place on a single CAN network to optimize energy management and provide the overall control of the hybrid system.

An electrically driven hydraulic pump for power steering and air compressor for the braking system shall be provided. These accessories shall operate on 230 VAC. The HVAC system shall also be powered by 230 VAC. High temperature cooling system shall be provided to cool the CNG engine and the braking resistors. The conventional heat exchanger location on the rear street side of the bus shall be used for the hybrid generator CNG engine charge air cooler. The CNG engine cooling radiator and electric fans shall be roof mounted. Air flow for the charge air cooler and the hybrid engine cooling radiator shall be provided by proportionally temperature controlled electric fans.

The low temperature cooling system shall provide cooling for the vehicle electric drive components including: generator, inverters and motors; and shall be roof mounted with electric cooling fans that are proportionally temperature controlled.

Provisions shall be made to permit the introduction of shop power supply to permit routine maintenance of the vehicle. The connection point shall be non-metallic and watertight. Location shall be determined during the pre-production meeting but shall be at least twenty-four (24") inches above the street surface.

Engine compartment shall be equipped with five (5) service lamps Dialight 17081CB, or approved equal. The lamps shall be positioned for optimal lighting throughout the hybrid engine compartment to aid in servicing of engine and generator components.

5.88 STANDARD CNG ENGINE (OPTIONAL) ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #89, #90, #91, #92 #93, #459, #460 & #461 for additional information.

The engine shall be an electronically controlled Cummins ISL-G 8.9 Liter CNG engine with 280 bhp and 900 lb-ft of torque. The engine shall meet or exceed all EPA and/or any other emissions requirements for engines in force at the time of manufacture when operating on fuel equal to CARB Specifications for Compressed Natural Gas #2292.5.

The engine and transmission shall be designed to mount into the bus aligned in a "T" drive configuration.

Specifications for engine electronic controls shall include a full-load idle speed of 600 RPM, a fast-idle speed of 1000 RPM, and a maximum engine speed governed at 2200 RPM. The engine shall incorporate electronic controls capable of transmitting and receiving electronic inputs and data from other drive train components and broadcasting that data to other vehicle systems. Communication between electronic drive train components and other vehicle systems shall communicate data using a combination of SAE Communication Protocols J1939 and/or J1708/J1587. Electronic controls shall be compatible with either 12 or 24 volt power distribution and compensate for changing conditions such as variations in vehicle weight and engine power. The electronically controlled engine shall have on-board diagnostic capabilities, be able to monitor functions, store and time stamp out-of-parameter conditions in memory, and communicate faults and vital conditions to service personnel. The engine shall contain built-in protection software to guard against severe damage. A diagnostic reader device and/or laptop computer connector port, suitably protected against dirt and moisture, shall be provided in the operator's area. The on-board diagnostic system shall trigger a visual alarm to the operator when the electronic control unit detects a malfunction.

Accelerator system shall be Williams consistent with transmission/engine, or approved equal. The throttle pedal shall be mounted so that it is equal to or higher than brake pedal height.

A Morse speed control, or approved equal, shall be provided in the engine compartment for operation of the engine from the engine compartment from idle to maximum no load speed. The Morse speed control shall only operate with the transmission in neutral and the rear run switch in the rear run position.

Throttle controls shall be disabled while the bus brake interlock is activated. Use of the fast-idle function shall activate the bus brake interlock system. The fast-idle shall interface with the bus brake interlock system in such a way as not to allow the fast-idle or brake interlock to activate while the transmission is in any drive range.

The engine shall incorporate an engine coolant temperature sensor, separate from electronic controls, set at two hundred fifteen (215°) degrees Fahrenheit connected to an "ENG TEMP" or "COOLANT TEMP" warning indicator lamp located on the dash.

The engine shall incorporate an oil pressure sensor separate from electronic controls, linked to a "LOW OIL PRESS" warning indicator lamp located on the dash.

All engine accessories, including air compressor, alternator, hydraulic pump, power steering pump, fan motor, air conditioning compressor, and engine oil cooler, are to be readily accessible and able to be serviced without removal of engine mounts or supports.

Provision shall be made for easy access to the engine spark plugs. The flywheel end of the engine shall be accessible from the interior of the bus through a large opening behind and under the rear seat.

The engine and transmission shall have the ability to be installed and removed as a complete unit or as individual components. Engine and transmission mounts shall be made from a combination of steel and rubber material and be arranged to provide convenient accessibility for service.

All fluid and air lines shall have connectors at the engine compartment bulkhead so as to provide for efficient service or replacement.

Engine compartment electronic control wire harnesses shall be made using heat resistant wire and shall be protected in high temperature sheathing or split loom. All wire harness connectors shall be moisture and corrosion resistant Packard Weather Pac, or approved equal.

All wire harness connectors and splices that interface engine and/or transmission electronic controls with bus wiring shall be engine and/or transmission manufacturer specified or approved. A diagnostic connector for Cummins Engine and ZF Transmission shall be provided in driver's compartment and engine compartment.

All engine exhaust piping from turbocharger outlet up to the bottom of muffler shall incorporate rigid metal composite insulation shielding as manufactured by InsulTech, LLC, or approved equal, to reduce engine compartment temperatures.

The starter shall be a Delco Remy MT39 electric starter or approved equal.

A dry type air cleaner, Nelson with restriction indicator, or approved equal shall be used. The air intake duct shall be so shaped as to eliminate water entrance into the air induction system. A passage shall be provided so that any water finding entry will drain prior to induction into the engine. The air cleaner shall be mounted to permit easy access for filter maintenance. An easily visible glass air filter service indicator shall be provided in the engine compartment.

All engine accessories shall be driven directly from the engine without the use of drive belts except for the air conditioning compressor and generator. Water pump may also be belt driven.

Belts shall be serpentine type belts, with the exception of air conditioning compressor belt, which may be installed in power band set as manufactured by Gates or Goodyear, or approved equal. In addition an idler pulley or belt tensioner will be installed to reduce vibration on belts if necessary whether a Thermo King or Carrier unit is used.

All hoses (air, coolant, fuel, engine oil, transmission fluid and hydraulic fluid) in the engine compartment, excluding high pressure hoses, shall be Aeroquip FC300, FC350, FC510 or 2807 hose, or approved equal, with stainless steel crimped fittings, where pressures and/or temperatures permit, and shall have standard JIC stainless steel, swivel end fittings. They shall be routed or shielded so that failure of a hose shall not allow hydraulic fluid or oil to spray or drain onto any component operable above the auto ignition temperature of the fluid. Hoses shall be individually supported and shall not touch one another or any part of the bus.

Engine coolant hoses not utilizing threaded end fittings shall be of a silicone type. All hose clamps shall be stainless steel, sleeved and a constant torque type, Breeze or approved equal. All power steering and hydraulic pump discharge hoses shall be "hi-impulse" hose with crimped stainless steel fittings.

Engine shall be equipped with Probalizer, or approved equal, oil sample fittings. Oil sample fitting shall be installed in a location that is conveniently accessible to service personnel.

Engine compartment shall be equipped with five (5) service lamps Dialight 17081CB, or approved equal. The lamps shall be positioned for optimal lighting throughout engine compartment to aid in servicing of engine components.

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #94 & #95 for additional information.

5.89 TRANSMISSION (FOR STANDARD CNG OPTION) ←

The transmission shall be a ZF 6HP594, 6-speed with integral input retarder, or approved equal. Gross input power, gross input torque, and rated input speed shall be compatible with the engine. Transmission shall be mounted in a way to allow easy removal without having to remove or move the engine. A mechanic, with optional assistance, shall be able to remove and replace the transmission assembly for service in less than sixteen (16) total combined man-hours. The transmission shall be designed to operate for not less than 300,000 miles without replacement or major service.

The transmission shall incorporate electronic controls capable of transmitting and receiving electronic inputs and data from other drive train components and broadcasting that data to other vehicle systems. Communication between electronic drive train components and other vehicle systems shall communicate data using SAE Communication Protocols J1939. Electronic controls shall be compatible with either 12 or 24 volt power distribution, provide consistent shift quality, and compensate for changing conditions such as variations in vehicle weight and engine power. The electronically controlled transmission shall have on-board diagnostic capabilities, be able to monitor functions, store and time stamp out-of-parameter conditions in memory, and communicate faults and vital conditions to service personnel. The transmission shall contain built-in protection software to guard against severe damage. A diagnostic reader device and/or laptop computer connector port, suitably protected against dirt and moisture, shall be provided in the operator's area. The on-board diagnostic system shall trigger a visual alarm to the operator when the electronic control unit detects a malfunction.

The transmission shall be equipped with an integral input hydraulic retarder designed to extend brake lining service life. Hydraulic fluid should flow continuously from the retarder directly to the oil cooler during the retarder cycle. The application of the retarder shall become partially engaged (⅓ of its total application) when the throttle is completely released (zero throttle). Maximum retarder shall be achieved when brake pedal is depressed (⅔ of total at 1 psi brake application pressure and full retarder engagement at 5 psi brake application). Brake lights shall illuminate when the retarder is activated.

The transmission shall have an auto neutral feature that shall cause it to automatically and immediately shift to "Neutral" whenever the transmission is left in gear and the parking brake is applied. This system shall also automatically shift the transmission to "Neutral," after a 5-minute delay, whenever the exit door brake interlock is applied.

A brake pedal application of 15 to 20 per square inch (psi) shall be required by the operator to engage forward or reverse range from the neutral position to prevent sudden acceleration of the bus from a parked position.

5.90 SERVICE COMPONENTS

The engine oil filler tube and dipstick shall be mounted in the engine compartment and be accessible through the engine compartment door. Engine oil dipstick shall have measurements with engine running and stopped.

The transmission (if equipped) filler tube and dipstick shall be located in the engine compartment and be accessible through the engine compartment door.

The engine oil pan drain plug and the transmission (if equipped) oil pan drain plug shall be a magnetic type, located in such a way as to provide for easy service access.

5.91 EXHAUST SYSTEM

The exhaust system and tailpipe assembly shall be routed upward through the engine compartment and out at the roof-line on the street-side of the bus. Exhaust stack (tailpipe) will be pointed straight back and be of sufficient height to prevent exhaust gases and waste heat from discoloring or causing heat deformation to the bus. There shall be at least a two (2") inch gap between the roof fiberglass and exhaust tailpipe to prevent possible fires. The exhaust system shall be adequately shielded to prevent heat damage to any bus component. All exhaust piping from the turbocharger outlet up to the bottom of muffler shall incorporate rigid metal composite insulation shielding as manufactured by InsulTech, LLC, or approved equal, to reduce engine compartment temperatures.

The muffler shall be manufactured by Nelson, or approved equal. Exhaust tubing and tailpipe shall be heavy gauge corrosion resistant steel.

The use of vertical exhaust shall not increase the overall length or height of the vehicle. The engine compartment, including the exhaust duct plenum shall be completely sealed to prevent smoke or fumes from entering the bus interior.

⑥ → 5.92 COOLING SYSTEM (FOR STANDARD CNG OPTION) ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #96 for additional information.

Temperature of operating fluids on the bus shall be controlled by a cooling system. The cooling system shall be sized to maintain the engine and/or the top radiator tank temperature at less than two hundred five (205°) degrees F during the most severe operations possible with the bus loaded to GVWR and with ambient temperatures up to one hundred twenty (120°) degrees F.

The Contractor shall demonstrate compliance with this requirement on the first bus prior to shipment to MTS.

A thermostatically controlled hydraulically driven fan shall be provided and be effectively power driven only at engine temperatures in excess of one hundred eighty-five (185°) degrees. The fan shall be of the variable speed design incrementally increasing fan speed as engine temperature increases. Fan shall reach maximum speed when engine coolant temperature reaches one hundred ninety-five (195°) degrees F.

The hydraulic system reservoir sight glass and fill cap shall be accessible from engine compartment door. Reservoir shall be equipped with a low fluid sensor, which shall activate an indicator light on the operator's instrument panel if reservoir is low on fluid. Hydraulic system shall also incorporate a filtering system with differential pressure gauge.

The radiator shall be located to the left rear of the bus. It shall have stainless steel top and bottom tanks with welded inlet and outlet necks.

All cooling system pipes, necks and stems where cooling system hoses are attached shall have a raised lip to keep the hose and clamp from slipping off under pressure.

Electric controls for cooling fan operation shall be designed so that any electrical failure will result in the fan running at maximum rpm.

The radiator surge tank shall be mounted above the radiator. The surge tank shall be made from stainless steel and equipped with a safety type filler cap, and an AC 861127 automatic pressure relief cap, or approved equal. Surge tank shall have only one (1) sight glass at the full mark, visible from the filler cap service door.

Access to the surge tank filler cap shall be through a spring loaded service door. Door size is to be determined at the pre-production meeting and located on the left side near the rear of the bus.

An engine coolant filtering system shall be included. The filter shall contain a time released coolant conditioner. The filter may be remote chassis mounted for easy service access.

CNG FUEL SYSTEM

5.93 GENERAL CNG FUEL SYSTEM

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #462, #463 & #464 for additional information.

The fuel system provided shall be a CNG system capable of providing a minimum of 450 miles between refueling. The fueling system shall be capable of providing a maximum cylinder pressure of 3,600 psi @ seventy (70°) degrees F, at a delivery rate from 750 cubic feet per minute (CFM) to 950 CFM.

The fuel system shall be designed to the minimum regulations and/or standards for safety, quality, reliability and longevity of FMVSS, DOT, Title 13, National Fire Protection Agency (NFPA) 52, American Society of Mechanical Engineers (ASME), ASTM, SAE, Compress Gas Association (CGA), American Gas Association (AGA), Code of Federal Regulations (C.F.R.) and Underwriters Laboratories (UL). Where a conflict exists, statute, code or regulation shall take precedence over guidelines or recommended practice. In the absence of a statute, code or regulation, the documented guidelines or recommended practice shall apply.

For the purpose of this section, fuel system includes fuel cylinders, their mounting, lines, tubing, regulators, valves, controls, methane gas detection systems, fire suppression systems, ventilation and any electrical directly or indirectly affected by the CNG installation.

Prior to and after production the Contractor shall demonstrate compliance with all of the above referenced statutes, codes, guidelines or recommended practices.

5.94 FUEL CYLINDERS

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #97, #98, #99 & #465 for additional information.

Fuel supply shall provide approximately four hundred fifty (450) miles driving range at the agencies operating profiles between refueling at 3,600 PSI.

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 System 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 bus or in the compartment above the engine of the vehicle.

Fuel cylinders shall be a composite of carbon and glass fibers as manufactured by Lincoln Composites, or approved equal. The cylinders shall be certified for a minimum useful life of fifteen to twenty (15 to 20) years and shall not require re-certification for the full fifteen to twenty (15 to 20) year period. Fuel cylinders shall be certified to NGV's most current standards.

Fuel cylinders shall be constructed and inspected in accordance with the above referenced statues, codes, regulations, guidelines and recommended practices. Cylinders, valves and relief device lines shall be properly marked or labeled as required.

Fuel cylinders shall be roof mounted. The cylinders shall be hidden from view in an aero-dynamic enclosure. Design and style of roof enclosure is subject to approval by MTS.

Buses with roof mounted cylinders shall be required to demonstrate, before and after production, utilizing the procedures for testing, handling and stability included in the SAE Technical Paper Series 861950, First Article Bus Testing, handling and stability, which includes steady rate cornering and over-steer, transient cornering and obstacle avoidance. Standards shall be comparable to buses with non-roof mounted cylinders, or corrected to acceptable safe standards.

Buses with roof-mounted cylinders and hybrid roof mounted components require a non-skid walkway in front, behind, and on top of the cylinder enclosure and the hybrid roof mounted components. The non-skid material shall be edge sealed. Front and rear ends of enclosure shall incorporate a step fabricated into enclosure end caps.

5.95 MANUAL SHUT-OFF VALVE ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #100 for additional information.

A UL listed manual shut-off valve shall be provided and installed and identified on the exterior of the bus with a decal indicating: "MANUAL SHUT-OFF VALVE." It is preferred that the shut-off valve be located near the CNG fuel fill valve. Valve shall be located within a person's reach at ground level.

5.96 AUTOMATIC SHUT-OFF VALVE ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #101 for additional information.

A UL listed automatic shut-off valve shall be provided and installed. The automatic shut-off valve shall be identified with a decal mounted on the bus exterior labeled "AUTOMATIC SHUT-OFF VALVE." The automatic shut-off valve shall be normally closed and held open by electrical power. The valve shall be wired so it shuts off when the run switch is in the off or accessory positions, when engine vacuum is not present, or a methane gas or fire fault is detected. Location shall be adjacent to the manual shut-off valve.

5.97 FUEL FILLER FITTING

The fuel filler receptacle fittings shall be located at the curbside rear of the bus aft of the rear door. Contractor shall provide and install both Sherex Series 3600 and 5000 type fuel receivers, or approved equal, at the fueling location. Receptacles shall be compatible with Series 1000 and 5000 Sherex Series nozzles and be equipped with dust caps. The access door for fuel receivers shall be interlocked to the hybrid generator engine to prevent the engine from being operated or started while fuel door is not latched. If fuel fill access door is opened while the hybrid generator engine is running,

the hybrid generator engine shall shutdown after a fifteen (:15) second delay. The exterior of the filler door shall be labeled in one (1") inch high letters, "FOR CNG ONLY." Exact location shall be approved by MTS.

5.98 FUEL LINES ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #102 & #103 for additional information.

Buses manufactured under this contract shall be manufactured in compliance with NFPA-52 for United States manufactured buses and Canadian Compressed Gas Association (CAN/CGA)-B149.4-M91 for Canadian manufactured buses. All tubing shall be a minimum of seamless Type 304 stainless steel (ASTMA269 or equivalent). Fuel lines and fittings shall not be fabricated from cast iron, galvanized pipe, aluminum, plastic, or copper alloy. 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 securely mounted, braced and supported every twenty-four (24") inches, or as designed by the bus manufacturer to minimize vibration, and shall be protected against damage, corrosion, or breakage due to strain or wear.

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

Fuel hose and hose connections, where permitted, shall be less than forty-eight (48") inches in length, made from materials resistant to corrosion and action of natural gas, and protected from fretting and high heat.

High pressure CNG lines shall be pressure tested to a minimum of one hundred twenty-five (125%) percent of system working pressure prior to fueling. Nitrogen shall be used to pressure test the fuel lines/assembly. The bus manufacturer shall have a documented procedure of testing the high pressure line assembly. Fuel lines from Sherex valves to cylinders shall be one (1") inch inside dimension (ID), minimum.

5.99 FUEL UNLOADING ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #104 for additional information.

A provision shall be provided to unload all of the fuel from the storage cylinders to a facility based low pressure gas line or storage facility. Connection shall be accessible at the fueling fitting area and be properly protected and labeled. It shall be possible to unload a full load of fuel in thirty (30) minutes or less.

5.100 FIRE SUPPRESSION AND GAS DETECTION SYSTEM ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #106 for additional information.

Automatic Fire Sensing and Suppression (AFSS)

General Requirements: An Automatic Fire Sensing and Suppression System (AFSS) complete with optical infrared fire sensors, control panel, vehicle interface, and extinguishing system shall be provided for the engine compartment.

AC Compartment: A separate detection only system consisting of two (2) Optical Infrared Detectors shall be provided for the AC Compartment.

AFSS Operation: Upon detection of a fire the protection panel shall alert the operator with visual and audible signals and then initiate automatic engine shutdown, extinguisher discharge, and related sequences.

Supervision Monitoring: Upon loss of continuity of the detection or suppression circuits, the protection panel shall provide a visual and unique audible alarm.

Control Panel: The control panel shall be located within view of the driver/operator, but shall not impede his view of the road. A single connection interface shall be provided to interface to the AFSS harness.

The protection panel shall incorporate the following driver/operator controls:

A) Alarm Silence
B) Visual and audible alarm TEST switch
C) Delay engine stop/extinguisher discharge
D) Reset

The protection panel shall provide fifteen (:15) second time delay prior to discharging the extinguisher and sending signal to shut the hybrid propulsion engine down.

Manual Discharge Switch: A Manual Discharge switch shall be provided within easy reach of the operator. The switch shall be protected against inadvertent activation by means of a protective guard held in place by a tamper seal. The control panel shall indicate a Manual Discharge event with a unique visual display that cannot be reset by the operator. Activation of the manual discharge switch shall immediately discharge the extinguisher(s) and send a signal for hybrid propulsion engine shutdown.

Fire Detection: Two (2) Optical Infrared Fire Detectors shall be located in the hybrid engine/generator compartment and two (2) in the A/C compartment to view major fire sources. The system shall also incorporate two spot sensors in the hybrid engine/generator compartment, one of which shall be located near the base of the muffler. The bus manufacturer and the AFSS manufacturer shall determine location and temperature of sensors. The detection system shall be compatible with infrared optical detection, linear thermal detection or spot thermal detection used independently or in any combination.

The optical flame sensor shall be dual spectrum infrared with at least a ninety (90°) degree conical field-of-view. The optical sensor shall respond to an explosive fuel fire in less than one-half (½) of one (:01) second. The sensors shall be immune to typical false alarm sources found on transit buses. Each sensor shall be equipped with a status LED to indicate power on and alarm conditions.

Fire Suppression: The pre-engineered fire extinguishing system shall consist of extinguisher(s), nozzle(s) (minimum of four nozzles) and a distribution system designed for vehicle applications that shall be installed in accordance with the AFSS manufacturer installation manual.

Extinguisher: The extinguisher shall be of the stored pressure type and consist of a valve and DOT approved cylinder. The extinguisher shall be charged with a minimum of twenty-five (25) pounds of BC rated Purple K pressurized to a minimum of 350 psi. The valve shall incorporate a pressure gauge and shall not require the attachment of other devices such as a control head for operation. Provisions shall be provided on the extinguisher bracket or other suitable location to stow the anti-recoil cap and/or other devices used to ensure safe transportation of the extinguisher when removed from the bus.

Electrical Requirements - Input Voltage: The system shall operate with a 12 VDC or 24 VDC supply. The system shall be compatible with SAE Recommended Practice J1455. The AFSS shall not require more than 2.4 W (0.1 A @ 24 VDC, 0.2A @ 12 VDC) of electrical power to operate.

Harness: The harness shall be easily maintained and repaired by a 3M mechanic using standard hand tools. Only commonly available wires and connectors shall be required.

Acceptance Tests: The completed system shall be tested and certified by the AFSS system supplier. The test shall determine that the system has been properly installed and shall function as intended. A Certification Report shall be provided that includes a detail of the tests performed. A service representative shall be on MTS property for the inspection of the systems as soon as the first bus arrives.

Combustible Gas Leak Detection System - General Requirements

General Requirements: A Combustible Gas Leak Detection system shall be provided to monitor the hybrid engine/generator compartment, A/C compartment and each separate fuel storage area(s), and shall automatically activate audible and visual alarms in the operator's area for two (2) levels, trace and significant of the lower explosive limit (LEL) of natural gas (methane). The system shall be compatible with the control panel for the AFSS and shall not require separate interfaces or control panels.

The bus shall have a total of five (5) gas detectors. These will detect a gas leak and have a sensitivity of fifteen to twenty (15% - 20%) percent of the LEL for methane (natural gas). The LEL for methane is five (5%) and the upper explosive limit is fifteen (15%) by volume of air. The vapor density is .06 and therefore lighter than air. The ignition temperature is nine hundred ninety-nine (999°) degrees F. (630 degrees C). The detectors are located as follows:

- Two (2) ea. in the roof mounted fuel storage bay.
- One (1) ea. in the A/C compartment.
- Two (2) ea. in the hybrid engine/generator compartment.

The detectors shall have an LED on them to indicate the status of the unit, a green light indicates the detectors are functioning and no gas is detected and a red light indicates that gas has been detected or it is not functioning correctly. If this happens a red light labeled "gas detection system warning" shall light and a buzzer shall sound. If the ignition system is in the "Off" position, the operator's horns shall also cycle to alert maintenance personnel. There shall also be a green light on the operator's dash panel labeled "gas detection system on", to indicate that power is provided to the gas detection system.

Combustible Gas Sensor: The CGS sensor shall be the metal oxide type and shall not require calibration. The sensor element shall be enclosed in a chamber specifically designed to minimize typical contaminants such as oil mist, water, cleaning fluids and other contaminants that may poison or shorten the life of the sensor. The sensor element shall be field replaceable without special tools. Each sensor shall incorporate a bi-color status LED to indicate Power, Trace Alarm, Significant Alarm and Element Failure.

Trace Gas: Upon detection of a trace gas (20% LEL), the effected sensor LED and protection panel "Gas Leak" LED shall flash red.

Significant Gas: Upon detection of a significant gas (50% LEL) the affected sensor and protection panel "Gas Leak" LED shall remain on steady red and the protection panel audible (silenceable) alarm shall sound. The sensor LED shall latch to enable easy location of leaks by maintenance crews.

Upon loss of continuity or sensor element failure the sensor LED will alternate red/green and the protection panel "Gas Trouble" lamp will illuminate.

AUDIBLE WARNING: The circuit monitor shall also be equipped with a continuous tone audible alarm. This alarm shall sound in GAS, FIRE and FAULT conditions. Once the audible alarm begins to sound it shall be capable of being silenced by depressing a labeled ALARM SILENCE button, provided on the circuit monitor front panel. Indication of a silenced alarm shall be provided via a labeled SILENCED ENGAGED LED.

5.101 AIR SYSTEM (AS APPLICABLE FOR PROPULSION SYSTEM) ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #107 & #466 for additional information.

The bus air system shall operate all accessories and the braking system with reserve capacity. The system shall have the ability to charge the air system from 40 psi to the governor cut-off pressure of 125 psi in less than three minutes. Bus air system shall not leak down more than 5 psi as indicated on the instrument panel mounted air gauges, within fifteen (15) minutes from the point of governor cut-off.

The air compressor shall have a capacity of not less than 15.5 CFM at 1250 RPM and shall be a Wabco air compressor, or approved equal. The compressor shall be engine mounted and be gear driven. Air for the compressor shall be filtered through the main engine air cleaner system.

The air pressure governor shall be a Bendix-Westinghouse D-2 type, or approved equal, and adjusted at 125 psi cut-out pressure. The air governor shall be remote mounted for ease of access.

The pressure relief valve and the muffler tank will be mounted relative to the air compressor discharge port. Muffler tank drain valve will be remote mounted to discharge below the engine cradle level and be accessible from curbside lower skirt.

The main air supply line from the air compressor to the bus shall be Teflon® lined flexible steel braided line. Air lines except necessary flexible lines will conform to the installation and material requirements of SAE J844-type 3B for nylon if not subject to temperatures over two hundred (200°) degrees F. Nylon tubing shall be installed in accordance with the following color-coding standards:

- Green Line: Primary Brakes and Supply
- Red Line: Secondary Brakes
- Brown Line: Parking Brake
- Yellow Line: Compressor Governor Signal
- Black Line: Accessories
- Blue Line: Suspension

Nylon lines may be grouped and shall be continuously supported in an approved conduit.

All air lines shall be sloped toward a reservoir and routed to prevent water traps.

Air system reservoirs shall be centrally located. This system shall consist of:

- One (1) Supply Tank: Minimum 1800 cu. in.
- One (1) Accessory Tank: Minimum 1800 cu. in.
- One (1) Primary Tank: Minimum 1800 cu. in.
- One (1) Secondary Tank: Minimum 1800 cu. in.

Total air tank capacity shall be a minimum of: 7,200 cu. in.

All tanks shall be clearly marked as to what function they supply.

All tank drain valves shall have means to drain moisture below engine cradle level.

A Bendix AD-9, or approved equal, with muffler shall be provided to prevent the accumulation of moisture in the air system. The air dryer shall be vertically mounted with an easily replaceable desiccant cartridge. The air dryer shall have a purge and drain cycle and be changeable through the bottom of the dryer. The main air line check valve located between the air compressor and the first reservoir shall be accessible for maintenance. Means shall be provided to verify the check valve to be in working order. A towing and shop air line connector shall be installed on the front end of the bus to provide an air supply from external sources. A shop air line connector shall also be provided in the engine compartment and shall be labeled "BUS AIR." The air tap shall be of the quick disconnect type mounted in a ¼" inch pipe fitting.

5.102 BRAKE COMPONENTS ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests. Request #108 for additional information.

The air brake application valve shall be a Bendix-Westinghouse E-10 treadle type. The rear brake relay valves shall be Bendix-Westinghouse R-14's and the front brake relay valve shall be a Bendix-Westinghouse R-12. The bus manufacturer shall specify details of the brake controls.

Brake actuator chambers shall be piston type MGM with E-Stroke brake monitoring system, or approved equal. The front actuator size shall be twenty (20") sq. inches. The rear service brake actuator size shall be a minimum thirty (30") sq. inches. The spring brake chambers shall also be a minimum of thirty (30") sq. inches. Slack adjusters shall be Haldex, or approved equal, automatic adjusting slack adjusters.

Brake stroke of each brake actuator shall be monitored electronically inside the actuator. Excessive stroke or failure to fully retract of any brake actuator shall cause a "Brake Fault" light on the diagnostic indicator lamp panel to illuminate.

Setting of the parking brake shall be signaled by illumination of the "Brake" light on the diagnostic indicator lamp panel. Illumination of the light shall confirm proper movement of both brake actuators, not just movement of the control. Similarly the lamp shall remain illuminated until the parking brake actuators are fully retracted after the control to release the parking brake is actuated.

5.103 SUSPENSION ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #109, #468, #469, #470 for additional information.

The bus shall be equipped with an air-suspension system. Air suspension system shall consist of four (4) rear and two (2) front air springs and three (3) leveling valves as manufactured by Barksdale, or approved equal, by which the air pressure is automatically regulated in proportion to the bus loading.

The air springs or bellows shall have a nominal working height of eleven and one-half (11½") inches. Air bellows shall be Firestone, or approved equal, twelve and one-half (12½") inch diameter and are to be fabricated from two-ply weather resistant natural rubber reinforced with nylon tire-grade fabric. Metal parts of the bellows shall be cadmium plated with zinc chromate sealer to prevent corrosion. Bellows shall be mounted to provide easy replacement under the bus.

The suspension system shall include one (1) front and two (2) rear height control valves by which air pressure is automatically regulated to the bellows in proportion to bus load.

The shock absorbers shall be dual action, telescoping type, heavy duty KONI shocks, or approved equal.

Radius and lateral rods shall be used to control torsional, lateral and pitching movements. Radius and lateral rod bushings shall be rubber and be of the replaceable type.

The bus manufacturer shall provide a description of the major suspension components and source of manufacture.

No parts may be used which are not in conformance with Federal and applicable State Safety Standards.

5.104 FRONT AXLE ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #471 & #485 for additional information.

The front axle shall be a MAN V8-65L with GAWR of 14,770 lbs. (one piece) type that is adequate for the bus loaded GVWR, or approved equal. The front axle shall be hub mounting type equipped with grease type front wheel bearings and seals.

Adjustable stop screws at each axle center end shall be provided to adjust bus minimum turn angle and prevent tire interference with adjacent parts.

5.105 REAR AXLE ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #110 & #472 for additional information.

The rear axle shall be a MAN 5.33:1, HP-1352-B with GAWR of 28,660 lbs., or approved equal. The rear axle shall be hub mounting type equipped with oil type wheel bearings and seals.

The differential gear ratio combined with the Flenders combining gearbox and the hybrid propulsion motors shall provide for a maximum highway speed of 65 MPH and a minimum highway speed of 60 MPH on level ground, and a minimum of 10 MPH on a twenty-two (22%) percent grade.

Acceleration shall meet the requirements below and shall be sufficiently gradual and smooth to prevent throwing standing passengers off balance. Acceleration measurement shall commence when accelerator pedal is depressed from an idle start.

SPEED (MPH)	TIME (SEC)
10	5.6
20	11.0
30	20.0
40	31.0

The differential assembly, drive pinion and pinion cage shall be mounted in a differential carrier which can be removed as a complete unit from the axle housing. The rear axle spindle tubes shall be pressed into the housing.

Shot-peened differential ring and pinion gears compatible with the use of a hybrid propulsion system shall be installed.

A drive shaft loop shall be provided to guard bus components and passengers from injury in the event of drive shaft failure.

Drive axles shall be full floating externally splined. Axles shall be compatible with the drive hub.

Rear wheel drive hubs shall ride on two (2) opposing tapered roller bearings mounted in the drive hubs.

⑥ → **5.106 HUBOMETER TRIP RECORDERS**

Each bus shall be equipped with a Stemco, or approved equal, hub mounted trip recorder suitable for mounting on a transit bus. Hubometer shall be manual type mounted on curbside rear wheel and shall record miles to 1/10th of a mile.

5.107 POWER STEERING (AS APPLICABLE FOR PROPULSION SYSTEM) ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #106, #473, #474, #476, #477, & #478 for additional information.

Fatigue life of all steering components will exceed 250,000 miles. No element of the steering system will fail before suspension system components when one of the tires strikes a severe road hazard. Inadvertent alterations of steering as a result of striking road hazards are steering failures.

The turning radius shall not exceed forty-hour (44') feet at seated load weight.

The tilt steering wheel will not be less than twenty (20") inches in diameter and will be shaped for firm grip with comfort for long periods of time and be non-padded. The steering column will be equipped with a telescopic adjustment of three (3") inches to allow the operator to adjust the location of steering for maximum comfort. The steering column shall tilt forward and backward six (6") inches for operator's comfort.

Hydraulically-assisted power steering shall be provided. The steering system shall be an integral type of American manufacture with rigid stainless steel lines. Steering gear shall be Sheppard M110 gear ratio 23:1, or approved equal, and shall be frame mounted and provide easy access for all adjustments.

An engine mounted, vane type hydraulic fluid pump, Luk or approved equal shall supply hydraulic pressure for the power steering system. A separate gear driven hydraulic pump shall be used to run the cooling system fan motor. This system is to use a one hundred eighty-five (185°) degrees F fan switch to control the operation of the fan motor "soft start" (switching) valve. The system is to be designed so that the lack of electrical power shall cause the fan to run at full speed, except in the case of fire.

The hydraulic system shall use Dexron III type hydraulic fluid. A hydraulic reservoir shall be provided with a filter, one sightglass and a dipstick. The reservoir shall be mounted in such a way as to provide easy service access and shall be accessible from the engine compartment door.

A stacked hydraulic system oil cooler shall also be provided, mounted outboard of the main engine radiator or be an integral part of the radiator/cooling system package.

5.108 WHEELS

Wheels shall be tubeless, Alcoa, part number 885553DB, or approved equal, aluminum forged disc, hub-piloted 10-stud type, with a Dura-Bright® polished finish on both sides. Wheel size shall be 22.5" x 8.25". One (1) spare wheel shall be furnished for each bus.

5.109 TIRES ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests. Request #479 for additional information.

Tires shall be Michelin, or approved equal, 305 - 70R x 22.5". One (1) spare tire shall be furnished for each bus.

ELECTRICAL

5.110 GENERAL ELECTRICAL ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #4, #5, #111, #480, #481 & #482 for additional information.

The bus electrical system shall incorporate a Vansco, or approved equal, Programmable Logic Controller (PLC) processor, a multiplex wiring system suitable for controlling most vehicle functions with the exception of the engine, generator, propulsion motors, transmission (if equipped), destination signs, seating and air conditioning. Limited numbers of high circuits or special circuits may be controlled directly but these shall be subject to approval by MTS. This system design should significantly reduce electrical components such as wiring, circuit breakers, relays, rectifiers and terminal blocks.

All electrical parts shall be accessible from the interior of the bus only and shall be protected to avoid splash from floor washing, etc.

Troubleshooting shall be accomplished by use of input/output lights permanently mounted at the PLC components. Examination of the ladder logic shall be done with a standard IBM compatible laptop computer and shall be password protected to prevent unauthorized tampering. To prevent unauthorized modifications to the system, the use of electrically programmable EPROM's shall not be allowed. Forcing of electronic functions shall be possible but the bus shall not be shifted out of neutral if force is enabled or on.

PLC support shall be available within a fifty (50) mile radius of the Procuring Agency providing exchange parts, new parts and technical support.

Necessary software and interface connection shall be provided for onboard trouble shooting. Two (2) sets shall be required for this order.

The type of Logic Controller, devices and system shall be submitted for approval prior to submission of bid.

5.111 WIRING ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #112 for additional information.

All general purpose wiring to be cross linked polyethylene insulated, color coded over its entire length, numbered for positive identification and meet the SAE Recommended Practice #J1128, Type SXL. Grommets or other approved material shall be provided where wiring penetrates a metal structure.

Engine compartment wiring shall be stranded copper wire hi-temperature insulation covered with single layer cross-linked polyethylene insulation (SCL), and shall be contained within high-temp corrugated plastic looms.

All electrical/electronic hardware and its mounting shall comply with the shock and vibration requirements of SAE J1455.

5.112 BATTERY CABLES

Battery cables shall be a minimum of 4/0 A.W.G. and meet SAE Recommended Practice J1127, Type SGR. Cable terminals at batteries shall be 3/8" & 3/8". Battery cables shall be supported in a way that does not allow cables to rest on tops of batteries while in the stowed position.

5.113 JUNCTION PANELS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #113 for additional information.

The main wiring harness(es) shall be installed in sections terminating at appropriate junction panels. Junction panels are to be constructed of Bakelite type material, terminal posts to be numbered and easily accessible from the interior or exterior of the bus. A minimum twenty (10%) percent of spare wires shall be provided per harness. All main wiring harness(es) shall be insulated and concealed within the body structure.

5.114 TERMINALS

All terminals shall be of the closed barrel type, insulated and crimped to the manufacturer's specifications. In addition, all power cable terminals shall be soldered. The use of "T-TAP" connectors is unacceptable.

5.115 CIRCUIT BREAKERS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #114 for additional information.

Manually resetable circuit breakers shall be provided. The use of in-line fuses shall be kept to a minimum. A circuit protector, fusible link or other suitable device shall be installed to protect 4/0 cable from a short to ground between batteries, starter, and alternator.

5.116 ELECTRICAL PANELS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #115 for additional information.

Two (2) main electrical panels shall be provided and conform to the following:

- A wiring diagram shall be located on the doors of each electrical panel.

5.117 MAIN ELECTRICAL PANEL

The main electrical panels shall be located near the operator's compartment and the rear interior of the bus and shall be accessible from either the interior or exterior of bus. The panels shall be constructed to allow easy access and be as water and dust proof as possible.

A power inverter shall be installed in each vehicle which is capable of supplying a 110 VAC 60 Hz circuit protected power supply at 20 amps. The 110 VAC outlet shall be located within the side console and shall be energized anytime ignition is in the on position, whether the hybrid engine is running or not.

5.118 REAR ENGINE CONTROL PANEL

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #116 for additional information.

A rear run control panel shall be provided in the hybrid engine compartment and shall be constructed to be as water and dust proof as possible. In addition, the following shall be provided:

- Rear start switch labeled - "Start," "Front - Off - Rear."
- Hybrid engine compartment light switch labeled - "Lights," "On – Off."
- Hybrid engine run switch labeled - "Run," "Front - Off – Rear."

Hybrid engine compartment gauges: A hybrid engine oil pressure and hybrid engine water temperature gauge shall be mounted in the hybrid engine compartment so that they are easily viewed when the rear compartment door is open. The oil pressure gauge shall indicate oil pressure at a main pressure oil galley. The water temperature shall indicate engine block water temperature on the engine side of the thermostats. Gauges shall be of the mechanical type with minimum two (2") inch face and shall not utilize sending units. Oil pressure gauge shall be clearly marked in 5 psi increments. Water temperature gauge shall utilize a tell-tale indicator. Rear switches and gauges shall be mounted in an enclosed water proof/dust proof box. Location of all gauges shall be approved by MTS. The hybrid engine compartment lights shall be capable of being turned on/off regardless of the front master switch position.

5.119 CAPACITY

All switches, relays, circuit breakers or other load carrying devices shall be of sufficient capacity to carry the required current load imposed with an ample margin of safety, and shall be labeled and located within electrical panels.

INTERIOR AND EXTERIOR LIGHTING

5.120 GENERAL EXTERIOR LIGHTING

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #117 for additional information.

Exterior lighting and reflectors shall meet all applicable state and federal requirements. (stick-on reflectors are not acceptable). All lamps shall be replaceable in five (5) minutes or less and shall be equipped with water tight sealed connectors.

5.121 HEADLAMPS

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #483 for additional information.

Two (2) dual head lamps shall be provided. Head lamps are to be activated from the Master Control Switch and a sealed foot operated switch shall be provided to control high and low beam operation. A high beam indicator shall be provided on the operator's dash panel.

5.122 STOP/TAIL/TURN LAMPS ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #118 for additional information.

Tail lamps shall be mounted on the engine closure door or rear end panels so as not to be affected by hybrid engine exhaust heat. Each side shall include two (2) combination red stop/tail light assemblies, an amber turn signal assembly and a white back-up light assembly in a red, red, amber, white configuration from top to bottom. A third centered pair of high mounted stop lights shall be provided and installed. All rear directional, stop/tail, and back-up lights shall be flush mounted four (4") inch diameter Dialight LED lamp assemblies, or approved equal.

Lamp lens shall not protrude from body more than one-half (½") inch. Final layout is subject to review and approval by MTS.

Side amber turn signals with guards, two (2) per side Dialight LED, or approved equal, shall be provided. Lamps shall be forward of all wheelhouses except curbside front, which shall be aft.

All lamps shall be L.E.D. type light.

If stop and tail lamps will not be visible from the rear when the rear engine door is in it's up position, two (2) stop, turn, tail and hazard lights, Dialight model 46121RB, or approved equal, shall be installed, one (1) on each side of engine compartment.

Heavy-duty, sealed type, foot operated turn signal switches shall be furnished. They shall be mounted on a pedestal and angled toward the operator in a configuration approved by the MTS.

No audible reminder shall be provided to alert the driver that the flasher is activated.

5.123 BACK-UP LIGHTS AND ALARM

Two (2) back-up lights, Dialight model 46121CB, or approved equal, one mounted on each side of engine closure door or rear end panels shall be provided. One (1) intermittent audible alarm (ECCOSA950), or approved equal, shall be provided at the rear of the bus.

⑥ → **5.124 CURB LIGHTS** ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #485 for additional information.

The vehicle doorways, including doorways with lifts, shall have outside raised Luminator LED lights, or approved equal, which when the door is open, provide at least one (1') foot-candle of illumination on the street surface for a distance of three (3') feet perpendicular to all points on the bottom steptread outer edge. Such light(s) shall be located below window level and shall be shielded to protect the eyes of entering and exiting passengers from glare.

⑥ → **5.125 INTERIOR LIGHTING** ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #486 & #487 for additional information.

The interior lighting system shall be Transmatic L20, with Advance Design Ballasts (ADB), or approved equal, and shall conform to the following requirements:

a. The lighting system shall run the entire length of bus, starting behind standee line to rear seat area.

b. Each fluorescent tube shall be supplied with an individual ADB unit.

c. The forward-most lamp, one (1) each per side, will extinguish with the front doors closed and shall be Dialight VSL-CC-48C55, or approved equal, LED Strip Lighting in lieu of fluorescent tubes. The second and third fluorescent lamps on each side shall be encased in a re-usable blue poly-carbonate sleeve.

d. An interior light switch shall be provided to allow illumination when the "MASTER CONTROL SWITCH" is in the "OFF" position and allow the interior lights to be extinguished when the "MASTER CONTROL SWITCH" is in the "NIGHT" position.

e. A PLC adjustable timer shall allow fifteen (15) minutes of illumination after the bus is shutdown (Master switch in Off or Park position).

f. Light fixtures shall be constructed to allow for easy tube or ballast replacement and accommodate eleven (11") inch advertising signs.

g. Destination sign light (if equipped) shall come on with the Master Switch.

h. Interior lights shall extinguish when the hybrid propulsion system is placed in reverse. This will aid the operator in backing the bus.

i. The floor surface in the aisles shall have a minimum of ten (10') foot-candles of illumination, vestibule area a minimum of four (4') foot-candles when the front door is open and a minimum of two (2') foot-candles with door closed, measured on the step tread or ramp platform.

j. Rear exit area and doorway shall have at least four (4') foot-candles of illumination with rear doors open and at least two (2') foot-candles of illumination measured on the step tread with doors closed.

k. Door header lights shall be Dialight 17081CB, or approved equal, two (2) per doorway.

l. Step lighting for the intermediate platform between lower and upper floor levels shall be provided and shall illuminate in all hybrid engine run positions. All step well lights shall be low-profile LED and shall be shielded as necessary to protect passengers' eyes from glare.

m. The front entrance area and curb lights shall illuminate with front door open and master run switch in night run or park position. Circuit shall be activated by the use of an air pressure switch and shall not incorporate the use of position sensing micro switches. The rear step well lights shall be on when the master switch is in the night run or park position. Rear exit area and curb lights shall illuminate when rear door is unlocked/open.

5.126 "STOP REQUESTED" PASSENGER SIGNAL

A "Stop Requested" passenger signal system shall be provided. A "Stop Request" indicator shall be provided on dash panel in plain view for operator visibility at all times. A ceiling mounted "Stop Requested" sign shall be installed directly above the standee line. When a passenger pulls the cord, a chime shall sound, the ceiling mounted "Stop Request" sign and dash indicator shall illuminate. The chime shall sound once and the sign and dash lights shall remain illuminated until after the front or rear doors open or a cancel switch is activated. Vertical pull cords shall be provided for the handicapped area located by the front forward facing seats. Tape switches are acceptable for handicap location under longitudinal flip-up seats. A separate dash indicator light shall be activated when a mobility aid user wishes to disembark and the chime shall sound twice. All pull-cords and tape switches shall be bright yellow in color.

5.127 HORNS

Dual electric horns with splash shields shall be provided with horns turned facing down to preclude the collection of water.

5.128 DRIVER'S CONTROL AND INSTRUMENT PANEL ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #119, #120, #121 & #488 for additional information.

The Operator's Control and Instrument Panel shall include, but not be limited to, the following requirements:

1. Four (4) position Master Control Switch OFF, Day-Run, Night-Run, Night Park.
2. Engine start button with dust cover.
3. Instrument and dash-lights (rheostat controlled).
4. Interior light switch.
5. 3-position defroster switch, Hi-Lo-Off.
6. HVAC control switch, Auto-Off-Vent.
7. Emergency parking brake release, properly marked with a metal label riveted by the park brake control valve.
8. Emergency flasher switch.
9. Test switch for dash indicator lights.
10. Dual air pressure gauge(s) with light.
11. Voltmeter (2") with light.
12. Engine temperature gauge (2") with light.
13. Electronic speedometer, with odometer and light.
14. Passenger signal On-Off switch.
15. Stop request cancel switch.
16. Wheelchair ramp control.
17. Kneel switch.
18. Fast idle switch.

19. Hybrid engine and generator test socket.
20. Bulb outage test switch for exterior lighting (i.e. Head Lamps, Marker, Clearance, Turn signals, Stop lamp, Tail lamp, Back-up lamps & Alarm.
21. Parking brake application valve, properly marked with a metal label riveted by the control valve "Pull to set, Push to release".
22. Floor mounted headlight, high/low beam foot switch.
23. Floor mounted turn signal foot switches.
24. Electronic throttle foot pedal.
25. Floor mounted P.A. microphone switch.
26. Brake pedal.
27. Hybrid propulsion system gear selector.
28. Emergency radio alarm switches (silent alarm). Allen Bradley with two sets of contacts, one normally open and one normally closed.
29. Waste basket (floor).
30. Eight (8) pocket Plexiglas Schedule Rack. (integrated into driver barrier)
31. Dash route/fare card holder.
32. Driver shall be provided with a reading lamp with toggle switch on side console.
33. Low fuel indicator light.
34. SpeakEasy II controls.

5.129 OPERATOR AUDIBLE WARNING ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #122, #123 & #124 for additional information.

An audible warning and light system will be provided for the operator that conforms to the following requirements:

	Indication	Buzzer	Dash Indicator	
a)	Low air (below 80psi)	(Yes)	Red	(Yes)
b)	Low oil pressure	(Yes)	Red	(Yes)
c)	Engine temperature	(Yes)	Red	(Yes)
d)	Generator/transmission	(Yes)	Red	(Yes)
e)	A/C off	(No)	Red	(Yes)
f)	Directional signals	(No)	Green w/arrow	(Yes)
g)	Stop light	(No)	Red	(Yes)
h)	Next stop	(Yes)	Red	(Yes)
i)	E/H next stop	(Yes)	Red	(Yes)
j)	High beam	(No)	Blue	(Yes)
k)	No charge	(Yes)	Red	(Yes)
l)	Rear door	(No)	Red	(Yes)
m)	Kneel	(No)	Red	(Yes)
n)	Low fuel light	(Yes)	Red	(Yes)

A test switch shall be provided which allows all indicator lights to be tested at once. Visibility of all dash indicators shall not be obscured by steering wheel.

⑦ → **5.130 GENERATOR** ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #125, #489 & #490 for additional information.

A Leece-Neville model VLF3278-002, or approved equal, 28 volt belt driven, 300 ampere (maximum rated output) brushless DC generator shall be provided. The generator to be driven at 2.75 times engine speed. Solid state rectifiers shall be used to convert AC to DC. A circuit protector, fusible link or other suitable device shall be installed to protect 4/0 cable from a short to ground between batteries and alternator.

5.131 VOLTAGE REGULATOR ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #491 for additional information.

A solid state Leece-Neville voltage regulator will be installed in a location and manner to minimize adverse effects of temperature extremes. The regulator shall be an adjustable variable setting-type.

5.132 BATTERIES ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #126 & #492 for additional information.

Two (2) Ramcar C-A8D12T, or approved equal, heavy duty 8D end mount batteries with permanent factory burned bus type terminals shall be provided. A heavy duty battery disconnect switch and a battery cut-out relay shall be provided. A minimum 80amp "Vanner," or approved equal, voltage equalizer shall be installed outside the battery compartment in a location that is as dust proof and water proof as possible and easily accessible. There shall be no switches, circuit breakers or other electrical components mounted in the same compartment as the batteries. The sliding tray assembly shall be made of stainless steel with a removable fiberglass liner. Provisions shall be made so that battery cables do not rest on batteries while battery tray is in the stowed position.

5.133 KNEELING SYSTEM ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #127 for additional information.

A "kneel" system shall be provided on each bus meeting the following requirements:

- With the front doors open, hybrid propulsion system in neutral gear, bus operator will lower the curbside of the bus with activation of a dash mounted momentary "kneel" switch (Lower).
- An audible alarm shall sound, a warning light visible from the front curbside of the bus shall flash, and an operator's indicator shall light during the entire operation of "kneel" functions.
- The brake and accelerator interlocks shall activate during the entire operation of "kneel" functions.
- Normal driving conditions shall be resumed after momentary activation of "kneel" switch (raise) and bus reaches normal driving height.
- The "lower" and "raise" heights shall be preset and be achieved automatically after activation of desired functions and require a maximum of ten (:10) seconds to complete each function.

- A guarded override momentary switch shall be provided, designed so that the brake and accelerator interlocks can be de-activated by the bus operator to allow movement of the bus in case of emergency.

- An indicator visible to the operator shall be illuminated until the bus is raised to a height adequate for safe street travel.

ANCILLARY EQUIPMENT SPECIFICATIONS

5.134 BIKE RACKS ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #493 for additional information.

Contractor shall provide a two (2) position bicycle rack as manufactured by Byk-Rak, or approved equal, stainless steel front mounted transit bike rack with heavy-duty quick disconnect type mounting bracket which is integral with front bumper. Contractor and MTS to mutually agree on location and mounting. (Positioning is not to interfere with the front license plate).

5.135 PUBLIC ADDRESS SYSTEM ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #128, #129 & #130 for additional information.

A Public Address System shall be provided on each bus meeting the following requirements:

a) One (1) amplifier, microphone, control unit combination - Clever Devices, SpeakEasy II, or approved equal.

b) Six (6) speakers-10 watt, 8 ohm rating.

c) Speakeasy II unit shall be located at the roadside "A" post. Control shall be provided by a foot control switch mounted on the floor. Mounting location and arrangement of the microphone and floor switch shall be approved by MTS.

d) One (1) external speaker-REI, or approved equal, to be mounted above front door area shall be provided.

e) Interior/Exterior speaker selection switch shall be mounted on instrument panel. Switch shall be a three (3) position toggle switch to provide interior/exterior/both operation of the speakers. Location shall be approved by MTS.

f) Power switch shall be mounted on instrument panel. Switch shall be a two (2) position toggle switch to provide on-off operation of the amplifier. Location shall be approved by MTS.

g) One (1) auxiliary microphone jack shall be provided on rear side of the operator's barrier. Also, one (1) auxiliary microphone, Shure #507B, or approved equal, with extension cord shall be provided at the rate of one (1) for every ten (10) buses.

⑥ → **5.136 DESTINATION SIGN** ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #495 & #496 for additional information.

A Luminator® Horizon all LED Destination Display System, or approved equal, shall be furnished and installed in the bus. The sign system shall consist of:

DISPLAY SIGNS:

- Front Sign: 24 x 200 Titan GEN 4 **(amber)**
- Side Sign: 14 x 112 **(amber)**
- Rear Sign: 16 x 48 **(amber)**
- Operator Display and Keyboard: (ODK)
- Cables and Accessories

The Front Sign shall be mounted on the front of the bus, near the top edge of the body, behind windshield protection, and in an enclosed but accessible compartment. The destination sign glass, if larger than actual sign, shall be blacked-out around edges eliminating the need for shrouding around sign and thus blocking unsightly wiring within the destination sign compartment from exterior view. Only amber colored LED's shall be used in the front sign.

The Side Sign shall be located on the right side of the bus near the front door either mounted near the top of an existing window or in a separate enclosed but accessible weather-proof compartment.

The Rear Sign shall be mounted on the rear of the bus near the right side of the upper roof line or rear center of the vehicle.

The entire display area of all signs shall utilize high-intensity LED displays that provide clear readability in direct sunlight, at night, and in all lighting conditions between those two lighting extremes, with evenly distributed illumination appearance to the un-aided eye.

The system shall be microprocessor-based utilizing approved bi-directional serial communications between system component compatible with SAE J-1708, RS232 and RS485 protocols.

The system shall be capable of communicating with, and/or controlling additional information devices, such as interior information signs, voice annunciation devices, farebox, etc. The system shall provide for destination and/or public relations (P/R) message entry.

Message memory shall be changeable by the use of a MTU and/or PCMCIA card of not less than one (1) megabyte memory capacity but sized according to the message listing noted herein.

The System shall have the ability to sequentially display multi-line destination messages with the route number portion remaining in a constant "on" mode at all times, if so programmed.

The various signs shall be programmable to display independent messages or the same messages; up to two (2) destination messages and one public relations message shall be pre-selectable. The operator shall be able to quickly change between the pre-selected messages without re-entering a message code. Public relations messages shall be capable of being displayed alternately with the regular text and route messages or displayed separately.

System shall be capable of displaying an emergency message when activated by a push button or toggle switch in a location to be approved by MTS. The emergency message shall be displayed on signs facing outside the vehicle while signs inside the vehicle, including the ODK display, remain unchanged. The emergency message shall be canceled by entering a new destination code, or power cycling (after removal of the emergency signal).

The programming software shall provide means of adjusting the length of time messages that are displayed in one (:01) second increments for up to twenty-five (:25) seconds.

Power to the sign system shall be controlled by the bus Master Run Switch. The signs shall operate in all positions of this switch except "Off." The signs shall be internally protected against voltage transients and RFI interference to ensure proper operation in the local environment.

The characters formed by the system shall meet the requirements of the Americans with Disabilities Act (ADA) of 1990 Reference 49 C.F.R. Section 38.39.

SIGN ENCLOSURES:

All signs shall be enclosed in such a manner to inhibit entry of dirt, dust, water and other contaminants during normal operation or cleaning. Access shall be provided to clean the inside of the bus window(s) associated with the sign and to remove or replace the sign components. Access panels and display boards shall be mounted for ease of maintenance/replacement. Any exterior rear sign enclosure used shall be made of polycarbonate material containing fiberglass reinforcement. The vehicle manufacturer shall comply with the sign manufacturer's recommended mounting, mounting configuration, and installation procedures to assure optimum visibility and service accessibility of the sign system and system components.

ELECTRONIC SYSTEM REQUIREMENTS:

All electronic circuit boards used in the sign system shall be conformal coated to meet the requirements of military specification MIL-I-46058C. All sign system components shall be certified to have been subjected to a "burn-in" test of a minimum of twelve (12) hours operation in a temperature of one hundred fifty (150°) degrees F prior to final inspection.

FRONT SIGN:

The front sign message shall be readable by a person with 20/20 vision from a distance not less than three hundred fifty (350') feet for signs of display height greater than eight (8") inches and from a distance not less than two hundred seventy-five (275') feet for display heights less than eight (8") inches. The front sign shall have a viewing cone of equal readability at sixty-five (65°) degrees on either side of a line perpendicular to the center of the mean plane of the display. The intensity of the illumination of the display LED's shall appear, to the naked eye, to be approximately uniform throughout the full viewing cone.

SIDE SIGN:

The Side Sign message shall be readable by a person with 20/20 vision, from a distance of not less than two hundred seventy-five (275') feet. The side sign shall have a viewing cone of equal readability at sixty-five (65°) degrees on either side of a line perpendicular to the center of the mean plane of the display. The intensity of the illumination of the display LED's shall appear, to the naked eye, to be approximately uniform throughout the full viewing cone.

REAR DESTINATION SIGN:

The Rear Sign shall be capable of independently displaying alpha-numeric characters. It's message shall be readable by a person with 20/20 vision, from a distance of not less than two hundred twenty-five (225') feet. The rear sign shall have a viewing cone of equal readability at sixty-five (65°) degrees on either side of a line perpendicular to the center of the mean plane of the display. The intensity of the illumination of the display LED's shall appear, to the naked eye, to be approximately uniform throughout the full viewing cone.

OPERATOR DISPLAY AND KEYBOARD (ODK):

The ODK unit shall be used to view and update display messages. ODK shall be recess mounted on the bus vehicle front sign compartment access cover or door. The ODK shall utilize a multi-key conductive rubber pad keyboard and be designed for transit operating conditions.

The ODK unit shall contain a display of at least two-lines of 20-character capability. The ODK unit shall contain an audio enunciator that beeps to alert the operator to view the display for a message, or beeps indicating that a key is depressed. The ODK unit shall continuously display the message associated with the selected destination readings (except the emergency message feature as noted above).

PROGRAMMING:

A Windows® based programming software package shall be supplied including laptop, under limited-use license, to generate message lists for the sign system.

The program shall be designed for ease of deleting and adding messages to a destination sign list in a Windows® Operating Environment.

The programming software shall be intuitive, of design to facilitate ease of training, and use context-sensitive help features. On-site training support shall be provided with the software.

This software shall provide capability for custom message writing by selection of preprogrammed standard variable width fonts; by creation of a custom font; by varying spacing between characters, words, or other message elements; by allowing creation of graphic displays, with or without text; by selecting preprogrammed graphic sign images; and by allowing use of multiple fonts within the same message and graphic symbols placed anywhere within the display area.

MESSAGE MEMORY TRANSFER AND UPDATE:

The sign system shall be re-programmable on the bus vehicle with the use of a Personal Computer Memory Card International Association (PCMCIA) card and/or Memory Transfer Unit (MTU). A PCMCIA card slot shall be provided on the ODK face for this purpose. The maximum reprogramming time for a 10,000 line listing shall be one minute. PCMCIA cards, of appropriate memory capacity based on requirements of the message listing noted below (but not less than 1 Megabyte) shall be supplied at the rate of two cards for this procurement. MTU connection shall be accessible from the outside of the front destination sign access door via a connector located on the access door.

MESSAGE LISTING:

Upon receipt of the contract/purchase order the Contractor shall supply to the sign manufacturer, within fourteen (14) days, a list of the message readings or listings such as to allow the Sign System to be preprogrammed with the correct readings for MTS revenue service operations.

④ → **5.137 FAREBOX SYSTEM** ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #131 for additional information.

A forty-one (41") inch GFI Odyssey farebox with Cubic DCU, or approved equal, shall be supplied and installed. A farebox ground strap to bus chassis shall be provided. Fareboxes shall be mounted directly to the floor of the vehicle rather than on a raised pedestal. Mounting shall be reinforced to limit movement of farebox, i.e., vibration, shaking, etc. A raised step assembly shall be constructed to fit around base of the farebox with a rubber shroud assembly designed and installed to fill the gap between step and farebox. Photos of an MTS installation shall be provided to assist in the design of the step assembly.

5.138 RADIOS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #488 for additional information.

A Motorola/Orbital radio/CAD/AVL communication system shall be installed to include radio antenna, GPS receiver, and LAN antenna. Such a system shall include Automatic Passenger Counter (APC). Contractor shall install the radio system as currently installed on MTS fleet. A conditioned 12 volt/30 Amp power supply and chassis ground shall be provided in radio equipment box. Mechanical alarm interface shall also be provided and installed by manufacturer during vehicle assembly. Mechanical alarm interface connector shall terminate at a DB25 connector in radio equipment box. An Allen Bradley silent alarm switch shall also be provided and installed. Details of radio provisions shall be provided at the pre-production meeting.

④ → **5.139 AUTOMATIC PASSENGER COUNTER (APC):** ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #498 for additional information.

Each vehicle shall be equipped with on-board APC equipment which shall be interfaced with the Motorola/Orbital RTMS Radio/CAD/AVL system as currently utilized on MTS buses. The APC equipment shall include all sensors, wiring, cabling, and installation required to enable interfacing with the RTMS system to allow the passenger count to be correctly associated with the GPS-based location, block, bus stops, and date and time. The sensors to detect passenger boarding and de-boarding shall not use step-treadle technology, but shall use infrared or other similar sensors that have a high level of reliability and are easily serviced. The sensors shall have a demonstrated accuracy of ninety-five (95%) percent or better.

Collected data shall be processed prior to permanent storage in order to ensure that the collected data is at least ninety-five (95%) percent accurate and that it is statistically valid. This processing shall include removal of clearly erroneous data, such as may occur from sensor failures. Processing shall also remove data for buses that would otherwise improperly affect statistical results for monitored bus routes due to temporary and unanticipated changes to the operation of buses on those routes. Changes of this type to be detected shall include, but not be limited to, significant off-route operation, significant off-schedule operation, breakdowns, and unscheduled turn-backs. Parameters for determining various filtering thresholds required by the processing shall be definable by system management users.

⑥ → **5.140 WHEELCHAIR RAMP**

A Ricon Corporation Foldover Model FR3048, or approved equal, low floor automatically-controlled, power operated wheelchair ramp system shall be provided. The ramp shall be designed for use to provide ingress and egress quickly, safely and comfortably, both in forward and rearward directions, for a passenger in a wheelchair from a level street, curb, or raised platform stops. The wheelchair ramp shall be able to be manually deployed in thirty (:30) seconds or less in the event the hydraulic drive system should fail. Ramp shall be compliant to requirements defined in 49 C.F.R. Part 38, Subpart B 38.23c.

The wheelchair loading system shall be located at the front door. The ramp shall be of a simple fold over type design, rotary actuated and hydraulically-powered. The wheelchair ramp assembly shall be mounted to the bus structure separate from the front bumper to eliminate damage to the ramp assembly when the bumper may sustain minor damages in a low speed collision. The ramp shall be fully self-contained and shall not be operated from an external pump, actuator or cam mechanism.

When the system is not in use, the passageway shall appear normal. In the stored position of the ramp, no tripping hazards shall be present and any resulting gaps shall be minimized. The controls shall be simple to operate with no complex phasing operations required and the loading system shall be under surveillance by and complete control of the operator. The bus shall be prevented from moving during the loading or unloading cycle by a throttle and brake interlock system. The wheelchair loading system shall not present a hazard, nor inconvenience any passenger. The loading system shall be inhibited from retracting or folding when a passenger is on the ramp/platform. A passenger departing or boarding via the ramp shall be able to easily obtain support by grasping the passenger assist located on the doors or other assists provided for this

purpose. The platform shall be designed to protect the ramp from damage and persons on the sidewalk from injury during the extension/retraction or lowering/raising phases of operation. The loading platform shall be covered with replaceable or renewable, nonskid material and shall be fitted with devices to prevent the wheelchair from rolling off the sides during loading or unloading. Deployment or storage of the ramp shall require no more than fifteen (:15) seconds. The device shall function without failure or adjustment for 500 cycles or 5,000 miles in all weather conditions on the design operating profile when activated once during the idle phase. A manual override system shall permit unloading a wheelchair and storing the device in the event of a primary power failure. The ramp assembly shall be replaceable within thirty (30) minutes by a 3M mechanic.

5.141 WHEELCHAIR RESTRAINT

The wheelchair restraint system shall be ADA approved and accommodate a range of wheelchairs commonly available to handicapped persons and shall not require any manual adjustments to meet this requirement. The restraint system shall be an Advanced Restraint Module (the A.R.M. telescoping arm model) from American Seating, or approved equal. The automatic locking mechanism of the restraint shall not be capable of being engaged unless the wheelchair is properly aligned in the restraint. The locking mechanism of restraint when being engaged or disengaged shall not be capable of harming the disabled person. When secured by the restraint, the wheelchair shall be prevented from side slipping, pivotal rotation, forward and backward motion, and overturning due to the motion and maneuvering of the bus. The restraint system shall be designed and manufactured so as to minimize pilferage and/or vandalism. The restraint system for wheelchairs shall be manufactured by American Seating Q-Straint, or approved equal. Wheelchair restraint shall be constructed from aluminum and/or rust-resistant steel.

The wheelchair restraint system shall be warranted against operational problems resulting from manufacturing and/or design defects. Each restraint unit shall be serialized for warranty tracking purpose.

⑥ → **5.142 DIGITAL RECORDING EQUIPMENT (Security Cameras)**

Buses shall be equipped with an On Board Video Surveillance System (OBVSS). The system shall be a digital system that records to a removable hard drive. Each system shall be comprised of seven (7) color cameras, a digital video recorder, and all necessary cable and hardware to permanently secure all the components. The OBVSS shall have a warranty (non-prorated) on the entire system for a period of not less than 1 year. All systems must be "state of the art" new equipment. The recording equipment shall be durable and designed specifically for transit bus installation. Video shall be recorded to an adequately sized removable hard drive unit(s). The removable unit shall be of modular design with no access to the recording media or internal components and shall be tamper proof. The removable cartridge shall be securely retained in the recording device and shall be locked in place by means of tamper proof lock and key arrangement. Recording unit shall also be enclosed inside of a locked box type container, and securely mounted. All recording unit cartridges and locks shall be interchangeable and "keyed alike" To match current keys in use at MTS. An operator's status indicator light, which shows whether system is functional or not, shall be installed in each vehicle. The status indicator shall be red for any malfunction or green indicating all system functions are operating properly. The system shall include an event-marking feature readily available to the operator, as well as an event marking feature integrated

with the vehicle's silent alarm function (Note: the normally open contacts on silent alarm switch are available for this feature). An X, Y, & Z axis impact sensor shall also be utilized as an event marking trigger. All recorded data shall be identified with visible on frame information including, but not limited to, date, time, location and bus number. Continuous loop, uninterrupted recording time shall be not less than three hundred thirty-six (336) hours – fourteen (14) days before recording is overwritten. Such recording time shall be minimum 640 x 240 resolution at a minimum 15 fps/camera and shall have the ability to be upgraded to up to ninety (90) days of storage. The system shall be capable of wireless downloading of video and shall have the ability to be viewed in real-time from a remote location up to two hundred (200) yards away.

5.143 CAMERAS

Each bus shall be fitted with a seven (7) color camera system capable of monitoring the entire interior of the bus, exterior front view, exterior rear view, and exterior curbside view. Interior areas of special consideration are the front and rear door and step areas, and the area rear of the rear door. Cameras shall be adjustable on both vertical and horizontal planes, designed to operate in both normal daylight and nighttime lighting conditions, and protected by a tamper proof enclosure. Property shall provide a basic diagram for camera location and direction of view.

5.144 MICROPHONE

Audio shall be required for operator's entrance area. Microphone shall be connected to camera that has view of driver, farebox, and entrance door.

The quality of the audio shall be such that a normal voice conversation between the operator and a passenger in the front entrance area of the bus can be understood with all accessories operating.

5.145 SIGNAGE

Four (4) signs shall be provided and installed on the inside of each bus, two (2) in English and two (2) in Spanish that read:

"NOTICE: THIS VEHICLE IS EQUIPPED WITH A DIGITAL SURVEILLANCE SYSTEM. PASSENGER ACTIVITY MAY BE RECORDED BUT NOT MONITORED"

-And-

"AVISO: ESTE VEHICULO ESTA EQUIPADO CON UN SISTEMA DE VIGILANCIA DIGITAL. LAS ACTIVIDADES DE LOS PASAJEROS PODRIAN SER GRABADAS, PERO NO MONITOREADAS".

One (1) of each of the signs (one English and one Spanish) shall be placed in a conspicuous location in the front portion of the bus, and one (1) of each in a conspicuous location in the rear portion of the bus. The signs shall be approximately four (4") inches high by six (6") inches wide with a glossy finish.

5.146 TRAINING/MANUALS/DOCUMENTATION

Technical and maintenance training twenty-four (24) hours shall be provided for all supervising staff and mechanical staff. Maintenance training shall include basic routine maintenance checks and troubleshooting to include camera adjustment, software reconfiguration, recorder replacement, and replacement of any internal batteries if equipped. Manuals as listed below shall be provided in the following quantities:

- Four (4) operation instruction manuals
- Four (4) parts & service manuals
- Four (4) software manuals

The Contractor shall be one hundred (100%) percent responsible for technical support for the entire system.

5.147 PLAYBACK STATIONS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #501 for additional information.

Two (2) separate stations and software shall be provided. At least one (1) of the playback stations shall be of mobile type (i.e., laptop).

A specific product shall be proposed, including complete specifications, as well as all other options available.

5.148 SPARES ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #502 for additional information.

The Contractor shall supply one (1) complete spare system and four (4) spare removable hard drives, and four (4) spare cameras.

5.149 SERVICE

The Contractor shall identify the local service provider who will address warranty, post-warranty service and technical support. The qualifications of that local service provider shall be included as part of the proposal.

5.150 HEATING AND AIR-CONDITIONING (HVAC) ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #503 for additional information.

A combined heating and air conditioning Thermo King, or approved equal, All-Electric T-Series one-piece self-contained rear mount unit shall be provided. The all-electric unit shall be charged, sealed and tested at the Thermo King factory and shipped ready for connection to specified power requirements. The scroll compressors, evaporator and condenser motors shall operate on 230VAC 3-phase 60hz power. The IntelligAire II microprocessor shall operate on 27VDC power. The microprocessor shall control and monitor all unit modes and functions, including safety shutdown protection. The two scroll compressors shall have the ability to operate simultaneously or independently as power demands and cooling requirements vary. The air conditioning/heating system shall be a self-contained unit mounted in rear of bus. Materials and mounting shall be of sufficient quality and construction to withstand road shock and vibration.

UNIT OPERATION:

- AUTO, COOL, HEAT, VENT modes shall be selected through driver's display panel.
- The dual scroll compressors shall be thermostatically controlled for 2-stage capacity control in the cool and/or auto mode.
- The 2-speed evaporator and condenser motors shall be thermostatically controlled based on operating conditions.

The system shall meet the following minimum requirements:

A) MINIMUM CAPACITY

1. Main heating system-90,000 BTU's/HR and 1,550 CFM of air flow (Low Speed).
2. Air Conditioning shall utilize R-407C Refrigerant – minimum cooling capacity of 81,000 BTU/HR and 2,250 CFM of air flow (High Speed).

B) COMPONENTS

1. Condenser motors shall be 230VAC/3PH/60HZ minimum 1.0 horsepower.
2. Evaporator motor shall be 230VAC/3PH/60HZ minimum 1.7 horsepower.
3. Compressors – Scroll 230VAC/3PH/60HZ.
4. Condenser Core-Copper tubing with aluminum fins.
5. Evaporator Core-Copper tubing with aluminum fins.
6. Refrigerant - R-407C.
7. IntelligAire II microprocessor control system.
8. IntelligAire II Smart-Pac diagnostics.
9. Standard operator display/control panel for IntelligAire II.
10. Heater boost pump with minimum capacity of 15 G.P.M. shall be an EG&G Rotron brushless seal-less magnetic drive, or approved equal.

5.151 HVAC SYSTEM OPTION WITH STANDARD CNG PROPULSION SYSTEM ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #504 for additional information.

A combined heating and air-conditioning system, Carrier, or approved equal, RM Series with the 05G compressor and clutch assembly shall be provided on each bus. System shall include MicroMax microprocessor for climate controls and Micromate Control Panel high visibility display. The bus heating and ventilating systems shall be designed to provide passenger comfort by heating or cooling, dehumidifying and filtering the air which is force circulated within the bus. The system shall be designed to maintain bus interior temperature to a minimum of sixty-five (65°) degrees F with a relative humidity of fifty (50%) percent or less at all locations in the bus under all operating conditions during all climatic conditions. This system shall meet the following minimum requirements:

A. CAPACITY

1. Main heating system-90,000 to 100,000 BTU's/HR and 1,300 CFM's of air (Low Speed).
2. Driver's Heating System-40,000 BTU's/HR and 500 to 600 CFM's of air.
3. Air Conditioning-120,000 BTU/HR and 2,800 CFM of air or nominal 10 tons.

B. COMPONENTS

1. Condenser Motors-General Electrical brushless field wound motors/or equivalent.
2. Evaporator Motor-General Electric Brushless motor/or equivalent.
3. Compressor- Carrier O5G belt driven with electro magnetic clutch.
4. Condenser Radiator-Copper tubing with aluminum fins.
5. Evaporator Radiator-Copper tubing with aluminum fins.
6. Expansion Valve-External equalization type.
7. Refrigerant-R134a.
8. Micromate Control Panel (MCP) high-visibility display.
9. Return air thermostat-Electronic, adjustable from sixty (60°) degrees to ninety (90°) degrees F (return air temperature).
10. Heater Boost Pump-Minimum capacity of 15 G.P.M. to be an EG&G Rotron brushless seal-less magnetic drive, or approved equal.

C. CONSTRUCTION AND MOUNTING

1. The air conditioning/heating system shall be an integrated unit mounted in the rear of bus. Materials and mounting shall be of sufficient quality and construction to withstand road shock and vibration.
2. Push pull cable shall not exceed twenty-four (24") inches in length or mounted as close as possible to any water valves or baffles.

D. SAFETY CONTROLS

1. Resetable circuit breakers on all electrical motors and power cables.
2. Low Freon pressure cut-out.
3. High Freon pressure cut-out.
4. Low compressor oil pump pressure.
5. Power relay to disable HVAC unit if bus charging system fails.

5.152 OPERATOR'S HEATER AND DEFROSTER ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #132, #505 & #506 for additional information.

A. The operator's heater and defroster system shall be independently controlled with easily moveable cable or electronic control.
B. The defroster shall meet all State and Federal requirements.
C. The system shall be located under the dash to provide heat or fresh air for the operator.
D. The system shall also heat the front step well and operator's foot area.

E. This system shall be equipped with an auxiliary water pump capable of pumping fifteen (15) gallons of water per minute, so as to force hot water to the heater/defroster core. Such a pump shall be located in an easily accessible area and away from road debris and inclement weather. This system shall also provide shut-off/isolation valves and manual bleed valves at the pump and core.

F. Such a system shall be able to entirely clear the windshields, operator side window and front door glass regardless of weather conditions.

G. The defrost motor shall provide no less than three (3) blower speeds.

5.153 PIPES AND HOSES

All heater and water lines shall be of heavy-duty copper or brass except where shock absorbing or flex-type lines are required. All joints shall be of the slip-fit soldered type. All lines not enclosed within the body or passenger areas shall be heavily insulated.

5.154 HEATER CORES

All heater cores shall be constructed of copper and brass.

Metal used in the tanks shall be of adequate thickness with drawn reinforcements. All tanks shall be of sufficient size to preclude fatigue failure.

Heater cores, motors and fans must be readily accessible and installed to permit easy removal.

SAFETY REQUIREMENTS

5.155 GENERAL SAFETY REQUIREMENTS

All structural and load bearing members of the restraint systems shall be made of aluminum and/or rust-resistant steel. The wheelchair restraint system shall restrain the wheelchair in a forward facing direction in the bus. All retention components which attach the restraint to the bus, as well as all parts of the restraint, shall be capable of withstanding any load developed by a one thousand (1,000) pound horizontal deceleration force as might be created by the combined weight of restraint and wheelchair in an emergency situation. The wheelchair restraint system shall be of proven quality and shall function without failure or re-adjustment for 500 cycles. (Restraining a wheelchair and releasing restraints defined as one cycle). This is the case for all operating conditions. Any switches, sensing devices and/or electrical components shall be sealed to prevent contamination by water, humidity, dust or dirt. Also they shall be of proven quality and shall not require adjustment or replacement under normal usage.

5.156 REAR WHEEL OBJECT DEFLECTOR

Each bus shall be equipped with a heavy duty DANGER ZONE OBJECT DEFLECTOR to be installed on the curbside forward of the bus rear wheels. The danger zone object deflector shall be the S-1 Gard, as manufactured and distributed by the Public Transportation Safety Corp., or approved equal, and is intended to deflect or push objects away from the track of the curbside rear wheels. The deflector's physical configuration and installation on the bus shall be such that objects or passengers that fall while exiting from the bus rear door, or persons that trip and fall in the path of the right rear wheels are pushed aside and away from the rear wheel track.

The deflector shall be constructed of the highest quality material capable of resisting material degradation due to common chemical and environmental debris. Workmanship shall be professional. All screws, bolts, nuts, washers and other fasteners used in the deflector installation shall be zinc or cadmium plated to prevent corrosion. Bolts and nuts shall be a minimum of SAE Grade 8. flat and lock washers shall be used when fastening component assemblies together or attaching same to the under structure. The deflector structural mounting brackets installation/attachment shall not have a negative effect on the strength and structural integrity of the bus under structure. The deflector shall be installed so that the outside vertical surface of the polyurethane boot and guard protector does not extend beyond the side of the tire that would create snagging or premature curb-induced wear.

The mounting location of the deflector for each bus shall be such that it would clear and prevent deflector damage when buses are lifted with any one of the following four types of bus hoists:

- Portable type wheel contact/engagement bus hoist.
- In ground axle engagement bus hoist.
- In ground platform drive-on bus hoist.
- Above ground parallelogram drive-on bus hoist.

Both the deflector boot and guard protector assembly shall be black in color.

⑥ → 5.157 SAFETY TRIANGLE REFLECTOR KIT & FIRE EXTINGUISHER

A set of three (3) safety reflecting triangles (Reflector Kit) shall be provided. Storage location of Reflector Kit shall be in a dedicated compartment within the operator's barrier assembly.

A fire extinguisher (5 pound rechargeable 1-A:10-BC rated) shall be provided and mounted on the top of the curbside front wheelhousing in every bus.

SPARE PARTS, TOOLS, AND MANUALS

5.158 SPARE ENGINE ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests. Requests #38 & #507 for additional information.

One (1) complete B5.9 Liter CNG engine power module excluding hybrid generator.

5.159 BRAKE AND SUSPENSION TOOLS, ETC.

One (1) complete set of MAN axle and brake system tools.

One (1) King Pin Press.

5.160 PORTABLE COMPUTER ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #508 for additional information.

Two (2) laptop computer, Panasonic Toughbook CF-51, or approved equal, suitable for diagnosing and troubleshooting the various onboard systems.

SYSTEM TROUBLESHOOTING TOOLS, MANUALS & SOFTWARE

④ → **5.161 ELECTRICAL/PLC SYSTEM** ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #4, #6, #38 & #509 for additional information.

Provide one (1) set of Programming and Troubleshooting Software for PLC System to include interfacing cables and any subscription fees for first year. Also provide one (1) set of manufacturer's troubleshooting manuals.

5.162 HVAC SYSTEM

Provide one (1) HVAC system diagnostic tool including interfacing cables. Also provide two (2) sets of manufacturer's parts and service manuals.

5.163 HYBRID ENGINE ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #510 for additional information.

Provide one (1) set of diagnostic and troubleshooting software subscriptions to include interfacing cables and adapters (i.e., 9-pin Deutsch connectors and Inline "4" Adapters). Also provide two (2) sets of manufacturer's parts, service and troubleshooting manuals.

5.164 HYBRID GENERATOR

Provide one (1) set of diagnostic and troubleshooting tools, interfacing cables and software Provide two (2) sets of manufacturer's parts, service and troubleshooting manuals.

5.165 PROPULSION MOTORS

Provide one (1) set of diagnostic and troubleshooting tools, interfacing cables and software Provide two (2) sets of manufacturer's parts, service and troubleshooting manuals.

5.166 TRANSMISSION (IF SO EQUIPPED)

Provide one (1) ZF Transmission diagnostic and troubleshooting kit (Testman Pro kit). Kit includes software, interfacing cables, and interfacing adapters. Also provide two (2) sets of manufacturer's parts, service and troubleshooting manuals.

5.167 ANTILOCK BRAKE SYSTEM (ABS)

Provide one (1) set of ABS System diagnostic and troubleshooting software, or PCMCIA diagnostic and troubleshooting card for Pro-link® if PC software is not available. Also provide two (2) sets of manufacturer's troubleshooting manuals.

5.168 OPERATOR'S MANUALS

Provide twenty (20) bus operator's manuals.

5.169 MANUFACTURER'S SERVICE MANUALS

Provide four (4) bus service manuals.

5.170 MANUFACTURER'S PARTS MANUALS

Provide four (4) bus parts manuals.

5.171 MANUFACTURER'S ELECTRONIC FORMAT MANUALS

Provide one (1) Electronic Format (CD/ROM) bus manual, which include drawings, schematics, OEM manuals for major components such as hybrid engine, transmission (if so equipped), HVAC, PLC system, destination signs, etc.

SECTION 6

40' LOW FLOOR CNG TRANSIT BUS TECHNICAL SPECIFICATION

⑥ →

6.0 GENERAL ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #7, #39, #43, #249 #250 for additional information.

The following technical specifications represent MTS's minimum core requirements for 40' transit buses. Buses submitted for acceptance shall conform to the following core requirements. Deviations from this specification or substitutions from specified materials, parts and equipment shall not be undertaken without prior written approval from the MTS. (See Section 1.4 and 1.5 "Proposers Communications and Requests" and "MTS Responses to Communications and Requests" for details on this process). Any exceptions, conditions, reservations, understandings or deviations must be explicitly and fully separately stated in your proposal. All exceptions, conditions, reservations, understandings or deviations will be evaluated by comparing it to the core requirements. If it is found to less than the minimum core requirements, MTS may view the proposal negatively and rate it accordingly.

The description of any proposed bus must follow the same format as these technical specifications. Your response to this specification must address each categorical requirement in the same proceeding order.

DELIVERY

This 40' low floor Compressed Natural Gas CNG bus specification covers a Contract for a five (5) year period with anticipated deliveries at the following rate:

- Year one (1) of the contract, MTS will purchase a minimum of twenty (20) or up to fifty (50) each 40' low floor transit buses as funding permits.
- Year two (2) of the contract, MTS will purchase a minimum of twenty (20) or up to fifty (50) each 40' low floor transit buses as funding permits.
- Year three (3) of the contract, MTS will purchase a minimum of twenty (20) or up to fifty (50) each 40' low floor transit buses as funding permits.
- Year four (4) of the contract MTS will purchase up to one hundred (100) each 40' low floor transit buses as funding permits.
- Year five (5) of the contract MTS will purchase up to one hundred (100) each 40' low floor transit buses as funding permits.

MTS anticipates confirming the initial order quantity immediately after the acceptance of an offer is issued, approximately September 2007. MTS expects delivery of the first article bus to take place in the month of July 2008. Any deviation from the delivery of the first article bus must be submitted for approval by MTS as described in Section 1.4. Year one (1) of the Contract will be for a minimum of twenty (20) or up to fifty (50) each 40' heavy duty transit buses The base order shall include a first article (pilot bus), which shall be completed and delivered, with production beginning after a lapse of at least

thirty (30) days after delivery of first article. First article requirement shall apply for each year of the base order. See attachment one (1) for further details.

For Contract years two (2) through five (5) MTS would determine by January 30th, the quantity of buses to be produced that year. MTS would require a firm production schedule. Your proposal must include a delivery plan. Your plan must describe all of the order processing and timing constraints MTS must follow when ordering buses.

6.1 TECHNICAL REQUIREMENTS FOR THE BASIC BODY

These technical specifications define requirements for a heavy duty, 40' low floor Compressed Natural Gas (CNG) powered transit bus, which shall be used for service on urban arterial streets. It shall have a minimum expected life of twelve (12) years or 500,000 miles which ever comes first and is intended for the widest possible spectrum of passengers, including children, adults, the elderly, and persons with disabilities. These 40' buses shall have two (2) doors, one (1) ahead of the first axle, and one (1) ahead of the drive axle.

The bus shall be fully compliant with the applicable requirements of the Americans with Disabilities Act (ADA) and any revisions published by the Architectural and Transportation Barriers Compliance Board or the Federal Transportation Administration for fixed route operations. Where these specifications exceed the requirements of ADA, the specification requirement shall apply.

6.2 WEIGHT OF BUS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #2 & #251 for additional information.

Total vehicle weight including a minimum of thirty-seven (37) seated passengers plus allowing for fifty (50%) percent standees shall not exceed California State Law regulations regarding rated load carrying capacity of axles. Buses must comply with 23 C.F.R. part 658 of the Federal Department of Transportation Regulations and California Vehicle Code Weight Sections 35550 - 35558. Buses not meeting these criteria will not be accepted.

During final inspection, the buses will be weighed. Buses exceeding the gross vehicle weight as stated on the bus specifications sheet, submitted with your proposal, will be assessed a penalty of $2.00 per pound for each pound over the stated weight. Buses exceeding California Weight limit may not be accepted.

⑤ → 6.3 PROPULSION UNIT

⑦ →

The propulsion unit will be located in the rear of the bus in a T-drive configuration.

6.4 EXTERIOR PANELS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #133, #134, #252 & #429 for additional

Roof and crown panels shall be aluminum or fiberglass. Crown panel over entrance door shall be steel with steel inner reinforcement. Body side panels shall be of .080 inch thick aluminum or steel. Exit door shall be reinforced with heavy structural steel.

6.5 ALL SKIRT PANELS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #135, #136, #137, #254, #255, #256, #257, #258, #429, #430 & #431 for additional information.

Skirt panels below rub-rail can be of Kevlar, aluminum or fiberglass construction. Rear structure above the floor line shall consist of an aluminum/steel bulkhead which separates the passenger compartment from a rear upper component compartment. The inside of this bulkhead shall be covered with black carpet or fabric that is graffiti resistant. Edges of carpet material shall have trim or moldings to prevent passengers from peeling it off.

The engine compartment door shall be .063 inch aluminum hinged at the top with a stainless steel piano type hinge across the entire length of door. Two (2) gas (pneumatic) cylinder door props shall be provided on all service compartment doors and the air conditioner compartment door. Side closure door shall be hinged at top with stainless steel piano type hinge. All access doors will be secured with square key locks. All service compartments shall provide service lights to aid the mechanics when servicing bus on the road. All fasteners shall be treated to prevent corrosion.

The front and rear license plate bracket shall be flush mounted. Front license plate, which cannot be obstructed by bike rack, shall be mounted on the front of bus over curbside turn signal lamp.

In no case will aluminum exterior body panels less than .063 inch be acceptable.

6.6 METAL PROTECTION ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #138 & #259 for additional information.

All metal panels and structural members shall be protected from rust and corrosion by thorough pretreatment prior to assembly operations. All frame tubing below the window line shall be sprayed internally with an anticorrosion compound. This may include chemical treatment and prime painting as required to insure this protection.

Caulking compound shall be used to seal interior body seams, joints and overlapping panels against water, dust, moisture and foreign matter. The sealant shall also be suitable for protection against electrolysis between dissimilar metals. A sealant containing a chromate inhibitor is to be used.

Prior to final painting and detailing of the surface, the body shall be cleaned and spot-primed to protect bare spots, and a surface sealant shall be applied to insure paint adhesion.

The bus flooring, sides, roof, understructure, axle suspension components shall resist corrosion or deterioration from atmospheric conditions and road salts for a period of twelve (12) years or 500,000 miles which ever comes first. It shall maintain structural integrity and nearly maintain original appearance throughout its service life, provided that it is maintained by the Procuring Agency in accordance with the procedures specified in the Contractor's service manual. With the exception of periodically inspecting the visible coatings applied to prevent corrosion and reapplying these coatings in limited spots, the Contractor shall not require the complete reapplication of corrosion compounds over the life of the bus.

6.7 NOISE LEVELS - INTERIOR NOISE LEVEL ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #139 for additional information.

The combination of inner and outer panels and any material used between them shall provide sufficient sound insulation so that an exterior sound source having up to an 80 dB sound level measured at the outside skin of the bus shall have a sound level of 65 dB or less at any point in the interior of bus. These conditions shall prevail with all openings, including doors and windows, closed and with the engine and all accessories switched off. The vehicle-generated noise level experienced by a passenger at any seat location in the bus shall not exceed 83 dB and the operator shall not experience a noise level of more than 75 dB under the following test conditions. The bus shall be empty except for test personnel, not to exceed four (4) persons, and the test equipment. All openings shall be closed and all accessories shall be operating during the test. The bus shall accelerate at full throttle from a standstill to 35 mph on a level, smooth, urban arterial road or highway in an area free of large reflecting surfaces within fifty (50') feet of the bus path. During the test, the ambient noise level in the test area shall be at least 10 dB lower than the bus under test. Instrumentation and other general requirements shall conform to SAE Standard J366.

6.8 EXTERIOR NOISE LEVEL

Airborne noise generated by the bus and measured from either side shall not exceed 83 dB under full power acceleration when operated at or below 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 dB. The bus-generated noise at curb idle shall not exceed 65 dB. All noise readings shall be measured at a distance of fifty (50') feet from and perpendicular to the center of the lane of travel with all accessories operating. Instrumentation, test sites, and other general requirements shall conform to SAE Standard J366. The pull-away test shall begin with the front bumper even with the microphone. The curb idle test shall be conducted with the rear bumper even with the microphone.

6.9 MISCELLANEOUS FASTENERS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #140 & #434 for additional information.

All bolts, nuts, washers, clamps, clips and like parts installed by Contractor shall be stainless steel, zinc cadmium plated, or phosphate coated to prevent corrosion. Manufacturer shall be located in the USA or Canada.

DOORS

6.10 DOORS - PASSENGER DOORS TYPE

Front door shall be double-stream, slide-glide type. Rear door shall be power open, power close slide-glide type.

6.11 EMERGENCY DOORS OPERATION

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #141 & #260 for additional information.

In the event of an emergency, it shall be possible to open the front and rear passenger doors manually from inside the bus using a force of no more than twenty-five (25) pounds after actuating an unlocking device at each door. The unlocking devices shall be clearly marked as "Door Emergency Release." The unlocking devices shall be clearly marked as an emergency only device and shall require two (2) distinct actions to actuate. The emergency door unlocking devices shall be accessible from the stepwell areas.

When these emergency devices are actuated, the door brake interlock system shall apply to stop the bus, regardless of the position of the door master switch.

Locked doors shall require a force greater than one hundred fifty (150) pounds to open manually. When the locked doors are manually forced to open, damage shall be limited to the bending of minor door linkage with no resulting damage to the doors, engines or complex mechanism.

6.12 REAR DOOR OPENING FORCE

An opening rear door shall impose no more than a fifteen (15) pound force on a one square (1") inch area of any passenger struck by it. A maximum force of thirty-five (35) pounds shall be required for passengers to free themselves after having either door open on them.

6.13 CLOSING DOOR FORCE

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

6.14 DOOR MASTER SWITCH

A door master switch shall be located in a compartment at the front of the bus which must be able to be opened without tools. This switch shall shut off the electrical circuits to the rear door, and the rear door interlocks in the event of a malfunction of the door or interlock controls. With this master switch in the "OFF" position, the rear door remains locked and the interlocks do not function. The switch does not affect non-door interlocks from functioning. The switch does not affect the operation of the front door or rear door emergency exit operation.

6.15 DOOR DIMENSIONS

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #142 for additional information.

When open, the doors shall leave an opening no less than seventy-six and one-half (76½") inches in height. Front door shall have a minimum clear opening width of thirty-two (32") inches for the entire vertical height of the door.

6.16 DOOR GLAZING ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #143, #144 & #261 for additional information.

The upper section of rear doors shall be glazed for no less than forty-four (44%) percent of the respective door opening area of each section. The front door shall be glazed with a full length single glass section from top of door to bottom. The edge of a six (6") inch high curb shall be visible to the seated driver through the closed front door when the bus is more than twelve (12") inches from the curb. Front and rear door windows shall be glazed with "Heat Guard" product as manufactured by Transit Products and Services of Banning, CA, or approved equal. Glazing shall be ¼" inch tempered safety glass conforming to FMVSS 205 and applicable requirements of ANSI Z26.1-1997 and the Recommended Practices defined in SAE J673. The total visible light transmittance must not be below seventy-six (76%) percent as measured by ASTM E-424. The LSG (light to solar gain ratio) must be a minimum of 1.28. The reflective heat gain must meet a minimum requirement of 150 BTU/hr/sq.ft.

Rear door glazing tint shall match that of side passenger windows.

6.17 DOOR HEIGHT ABOVE PAVEMENT

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

6.18 FRONT DOOR ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #145, #262, #263, #264 & #439 for additional information.

Front door on the curbside ahead of the front wheelhouse shall be anodized aluminum, two (2) section slide-glide type. Door hinges shall be stainless steel, joints shall be covered with rubber waterproofing seals.

Door shall be operated from a door control actuator at roadside of driver, which controls a Vapor, or approved equal, pneumatic differential door engine mounted in compartment over door. A light with switch shall be provided in the door compartment to assist mechanics. Access door to compartment shall be hinged at the top and fastened with two (2) rotating knob-type latches.

6.19 FRONT DOOR AIR DUMP VALVE ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #265 for additional information.

An air dump valve so connected as to supply and/or exhaust all air from the front door engine, shall be provided. With valve in "OFF" position, front door can be opened and closed manually. Air dump valve shall be installed at the left of the operator's position and shall display the following operating instructions:

TURN HANDLE TO "OFF" FOR OPENING FRONT DOORS MANUALLY.

6.20 REAR EXIT DOORS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #146 & #262 for additional information.

The rear exit door shall be an aluminum two (2) section "power open, power close" slide-glide type door. A light with switch shall be provided in the door compartment to assist mechanics. The exit door of the vehicle shall be equipped with an acoustic sensing system to secure passenger and other objects in the door way and between the fully opened or partially closed door panels. The Acoustic Sensing System shall be the "CLASS SYSTEM" manufactured by Vapor Bus International, or approved equal.

6.21 DOOR PROJECTION

Exterior projection of the doors shall be minimized and shall not exceed six and one-half (6½") inches during the opening or closing cycles or when doors are fully opened. Projection inside the bus shall not exceed twenty (20") inches. The closing edge of each door panel shall have no less than two (2") inches of soft weather stripping. The doors when closed shall be effectively sealed and the hard edges of the doors shall be at least four (4") inches apart.

6.22 FRONT AND REAR DOOR CONTROL ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #147 for additional information.

The door control actuator shall operate the front and rear doors separately or simultaneously. A Vapor five (5) position door control, or approved equal, shall be mounted to the left of the driver positioned forward from center of the steering column. The control lever positions shall be as follows:

LEVER POSITION	FRONT DOOR	REAR DOORS
Extreme Forward:	Open	Open
1st Position Forward:	Open	Closed
Center Position:	Closed	Closed
1st Position Rear:	Closed	Open
Extreme Rear:	Open	Open

Operator shall have full control of rear exit doors opening and/or closing function.

The door control actuator, dump valve, and adjacent parts shall be accessible through the front exterior electrical panel and/or interior side console.

6.23 EXTERIOR SERVICE COMPARTMENTS AND ACCESS DOORS

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #148, #149, #150, #256, #266, #267, #268, #269 & #430 for additional information.

Conventional hinged doors with stainless steel piano type hinges 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 and the windshield washer reservoir. Windshield washer reservoir fill door shall be in the front of the bus. Access to all other compartments shall be from the outside rear of the bus. Coolant shall be added through the same access doors as the quantity is checked. The surge tank access door shall be adequately sized for ease of accessibility.

No separate access doors shall be provided on the engine compartment door for the engine oil and transmission fluid dipsticks.

These shall be serviced through the main engine compartment door. Access openings shall be sized for easy performance of tasks within the compartment including tool operating space. Access doors shall be of rugged construction and shall be capable of withstanding severe abuse throughout the life of the bus. They shall close flush with the body surface. All access doors 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 and closed position by counterbalancing with over-center or gas filled struts. Springs and hinges shall be corrosion resistant and shall last over the bus's service life. The utilization of 5/16" inch square key latches where necessary are permitted. Access doors shall hinge up and out of the way or fold flat against the bus body and shall be easily operable by one person. These doors, when opened, shall not restrict access for servicing other components or systems and must provide service lights.

Rear engine door shall be latched closed by use of flush mounted square key latch mechanisms. The street-side gas support strut shall have a locking mechanism that locks in the open position. Rear engine door shall incorporate an exterior handle mounted to lower center of door, as well as, an interior handle mounted off center on street-side. A hinged and removable belt guard shall be provided, with a latching device, for easy access to engine belts, pulleys and accessories.

Undercarriage steering box access doors must be hinged for easy access and shall be latched closed by use of flush mounted square key latch mechanisms.

Curbside battery compartment door shall have a minimum of six hundred (600") square inches of expanded steel, screen and other opening to aid in heat removal from the engine compartment.

Any hinged skirt panel is considered to be an access door for the purposes of this section.

6.24 UNDERBODY

Any underbody inspection covers shall be hinged and utilize square key latches. Inspection covers using screws is not acceptable.

6.25 INTERIOR ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #270 & #440 for additional information.

Rear bulkhead shall have access panels on curbside and street-side. Access panels shall be minimum 18"x18" in size.

6.26 WINDSHIELD WIPERS AND WASHERS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #151 & #271 for additional information.

The bus shall be equipped with an electric operated Sprague, or approved equal, variable speed windshield wiper for each half of the windshield. Separate controls for each side shall be supplied. A variable intermittent feature shall be provided to allow adjustment of wiper speed between approximately 5 to 25 cycles per minute.

Wiper motors and arms shall be of the type to provide maximum visibility for the operator and shall not obstruct operators view when wipers are parked. No part of the windshield wiper mechanism shall be damaged by manual manipulation of the arms. At 60 mph, no more than ten (10%) percent of the wiped area shall be lost due to windshield wiper lift. Windshield wiper motors and mechanisms shall be easily accessible for repairs or service and shall be removable as complete units. Exposed hardware such as bolts and bushings shall be stainless steel or otherwise corrosion resistant.

Windshield washer system, when used with the wipers, shall deposit washing fluid evenly and completely wet the entire wiped area. The windshield washer shall incorporate an electric type pump. The windshield washer reservoir shall be mounted at the front of the bus with provision for exterior fill through a small swing-open door at the front of the bus. Reservoir shall be a translucent plastic for easy determination of fluid level with a minimum capacity of two (2) U.S. gallons.

Windshield washer spray nozzles shall be located separately from the windshield wiper arms.

WINDOWS

6.27 WINDSHIELD

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 fifteen (15°) degrees, measured above the horizontal and excluding any shaded band. The vertically downward view shall permit detection of an object three and one-half (3½') feet high no more than two (2') feet in front of the bus. The horizontal view shall be a minimum of ninety (90°) degrees above the line of sight. Any binocular obscuration due to a center divider may be ignored when determining the ninety (90°) degree requirement, provided that the divider does not exceed a three (3°) degree angle in the operator's field of view. Windshield pillars shall not exceed ten (10°) degrees 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 windshield shall not be used. The windshield glazing material shall have a ¼" inch or 6 mm nominal thickness laminated safety glass conforming to the requirements of ANSI Z26.1 Test Grouping 1A and the Recommended Practices defined in SAE J673. The glazing material shall have single density tint. The upper portion of the windshield above the operator's field of view shall have a dark, shaded band with a minimum luminous transmittance of six (6%) percent when tested in accordance to ASTM D-1003.

6.28 OPERATOR'S WINDOW ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #3, #152, #273 & #274 for additional information. MTS has modified the specifications. Refer to MTS Request for BAFO Letter – See Item #4.

The operator's side window shall be a full slider "3-Minute Window" without "Glass Guard" as manufactured by Riconcorp of Panorama City, CA, or approved equal. The operator's side window shall be glazed with "Heat Guard" product as manufactured by Transit Products and Services of Banning, CA, or approved equal. Glazing shall be ¼" inch laminated safety glass conforming to FMVSS 205 and applicable requirements of ANSI Z26.1-1997 and the Recommended Practices defined in SAE J673. The total visible light transmittance must not be below seventy-six (76%) percent as measured by ASTM E-424. The LSG (light to solar gain ratio) must be a minimum of 1.28. The reflective heat gain must meet a minimum requirement of 150 BTU/hr/sq. ft. The slider sections shall slide in tracks or channels designed to last the service life of the bus. The operator's side window shall open sufficiently to permit the seated operator to easily adjust the street-side rearview mirror. The seated operator shall have an unobstructed view of the street-side rearview mirror with window in the fully open or closed position. When in open position, the window shall not rattle or close during braking. The sliders shall be equipped with a pinch handle and catch located mid point on the riser of each slider. The operator's side window assembly shall not be bonded in place and shall be easily replaceable. The window design shall be similar to the passenger windows.

6.29 PASSENGER SIDE WINDOWS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #3, #276, #279 & #511 for additional information. MTS has modified the specifications. Refer to MTS Request for BAFO Letter – See Item #4.

All passenger side windows shall be the "3-Minute Window" without "Glass Guard" as manufactured by Riconcorp, or approved equal. Passenger side windows in front portion of bus shall be bottom slider, top fixed, with the exception of the two (2) forward windows on each side, which shall be split fixed. Passenger side windows in rear portion of bus shall be full sliders. All aluminum and steel material shall be black anodized to help prevent corrosion.

A minimum of four (4) of the passenger widows in the front section of bus shall provide for emergency egress. Emergency egress and window operation instructions must be a metal plate permanently fixed to the bus sidewall. The instruction must be mounted within six (6") inches of the emergency handle. Operation instructions must be printed in both English and Spanish.

Windows shall be constructed to enable a maintenance worker to replace the glazing in three (3) minutes or less. Glazing in the assembly shall be replaced without removing the window from its installed position on the bus or manipulation of any rubber molding surrounding the glazing. The glazing shall be held in place by four (4) mechanical brackets. The mechanical brackets shall act as part of the structure of the window. All windows rear of exit door shall be equipped with "Scotchgard" 1004 Multi-Layer Protective Film for Glass with stepped edge as manufactured by 3M Industrial, or

approved equal. This optically transparent, pressure sensitive polyester film tape shall be designed to protect the interior of windows from intentional mutilation, scratching, and etching. A defaced layer shall have the ability to be quickly and easily removed, exposing a fresh protective sheet.

All passenger windows glazing shall be glazed with "Heat Guard" product as manufactured by Transit Products and Services of Banning, CA, or approved equal. Glazing shall be ¼" inch tempered safety glass conforming to FMVSS 205 and applicable requirements of ANSI Z26.1-1997 and the Recommended Practices defined in SAE J673. The LSG (light to solar gain ratio) must be a minimum of 1.28. The reflective heat gain must meet a minimum requirement of 150 BTU/hr/sq. ft. Windows on the bus sides and in the rear doors shall be equally tinted with a forty-four (44%) percent luminous transmittance grey color tint. Side destination sign window top section shall be clear.

MIRRORS

6.30 GENERAL MIRRORS

The bus shall be equipped with a corrosion-resistant, outside rearview mirror on each side of the bus. The mirrors shall permit the operator to view the highway along both sides of the bus, including the rear wheels. The mirrors are to be designed in such a way that allows for firm attachment to the bus to prevent vibration and loss of adjustment, but not so firmly attached that the bus or its structure is damaged when the mirror is struck in an accident. Mirrors shall retract or fold sufficiently to allow bus washing operations.

6.31 CURBSIDE MIRRORS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #524 for additional information.

The curbside mirror shall be a remotely adjustable 10"W x 11"H mirror as manufactured by Hadley-Elkhart (formally B&R Mfg.), or approved equal. The mirror is to be constructed of high impact Acrylonitrile Butadiene Styrene (ABS) plastic with a black finish. Mirror head shall be attached using a nitro-carbonizing ball and clamps onto a steel arm powder coated flat black. The mirror design is a friction mount construction that allows for the mirror assembly to be folded during bus washing or when incidental contact occurs. The operator shall be able to adjust flat or convex portion remotely while seated in the driving position. The control for the remote positioning of the mirror shall be a single or dual switch, or devise. The flat and convex mirror shall be electrically heated with heater being energized whenever the operator's heater and/or the defroster is activated. An LED turn signal shall be incorporated into the outside portion of the mirror to allow visibility from the rear of the vehicle. The mirror is to be top mounted on the side of the bus and shall be mounted so that its lower edge is no less than eighty (80") inches above the street surface with clear operator visibility through the wiper area of the windshield.

6.32 STREET-SIDE MIRRORS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #280, #446 & #524 for additional information.

The street-side mirror shall be a remotely adjustable 10"W x 11"H mirror as manufactured by Hadley-Elkhart (formally B&R Mfg.), or approved equal. The mirror is to be constructed of high impact ABS plastic with a black finish. Mirror head shall be attached using a nitro-carbonizing ball and clamps onto a steel arm powder coated flat black. The mirror design is a friction mount construction that allows for the mirror

assembly to be folded during bus washing or when incidental contact occurs. The operator shall be able to adjust flat or convex portion remotely while seated in the driving position. The control for the remote positioning of the mirror shall be a single or dual switch, or devise. The flat and convex mirror shall be electrically heated with heater being energized whenever the operator's heater and/or the defroster is activated. An LED turn signal shall be incorporated into the outside portion of the mirror to allow visibility from the rear of the vehicle. The mirror is to be mounted on the side of the bus and shall be mounted so that its lower edge is no less than sixty-six (66") inches above the street surface with clear operator visibility through the side driver's window with the window closed or fully open.

6.33 INTERIOR MIRROR ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests. Requests #281 & #282 for additional information.

A fully adjustable Lucerix, or approved equal, 8" x 15" inch convex operator's rear view mirror with an approved type safety rim (black), shall be mounted just above the windshield to left of centerline.

Two (2) separate adjustable Lucerix, or approved equal, six (6") inch round flat mirrors with an approved type safety rim (black), shall be installed in combination (at right front of bus) to provide operator view of rear (exit) door and front mounted bike rack.

One (1) adjustable Lucerix, or approved equal, twelve (12") inch round convex mirror with an approved type safety rim (black), shall be installed at rear exit door.

6.34 WHEELHOUSES ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #153, #283 & #447 for additional information.

Wheel housings shall be minimum 14-gauge stainless steel. Front wheel housings covers shall be fiberglass "Gel-coated" glossy antique white to color match the ceiling. Scuff guards constructed of .050" thick stainless steel rising sixteen to eighteen (16'" to 18") inches from floor level up around the base of front wheel house covers shall be provided. Scuff guards shall be secured with screws.

BUMPERS

6.35 GENERAL BUMPERS ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #513 for additional information.

Front and rear bumpers shall be Romeo Rim, or approved equal, three (3) piece, black energy absorbing bumpers. Rear Bumper shall be of the anti-ride type. Bumper height shall be such that when one bus is parked behind another, a majority portion of the bumper faces will contact each other. The front and/or rear bumper systems shall utilize the following materials and construction:

Energy absorbing modules are to be self-restoring, integral urethane. The back structure is to be fabricated with aluminum and provide a single full length, structural support for modules. The bumper construction shall provide for the disassembly and service of modules and structural components independently of one another.

6.36 FRONT BUMPER

No part of the bus, including the bumper shall be damaged as a result of any 5 mph impacts with a fixed, flat barrier perpendicular to the bus' longitudinal centerline of the vehicle. The bumper shall return to its original shape within ten minutes of the impact. The bumper shall protect the bus from damage as a result of 6.5 mph impacts at any point by the Common Carriage with Contoured Impact Surface defined in Figure 2 of FMVSS 301 loaded to 4,000 pounds parallel to the longitudinal centerline of the bus and 5.5 mph impacts into the corners at a thirty (30°) degree 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 by no more than seven (7") inches.

6.37 REAR BUMPER

No part of the bus, including the bumper shall be damaged as a result of any 2 mph impacts with a fixed, flat barrier perpendicular to the bus' longitudinal centerline of the vehicle. The bumper shall return to its original shape within ten minutes of the impact. When using a yard tug with a smooth, flat plate bumper 2 feet wide contracting the horizontal centerline of the rear bumper, the bumper shall provide protection at speeds up to 5 mph, over pavement discontinuities up to 1 inch high, and at accelerations up to 2 mph/second. The bumper shall protect the bus from damage as a result of 4 mph impacts at any point by the Common Carriage with Contoured Impact Surface defined in Figure 2 of FMVSS 301 loaded to 4,000 pounds parallel to the longitudinal centerline of the bus or impacts into the corners at a thirty (30°) degree 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 by no more than seven (7") inches. The bumper shall also provide an integral "Anti-Ride" geometry to preclude the possibility of standing on the bumper.

6.38 TOW EYES ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #154 for additional information.

Two (2) tow eyes shall be installed at the front of the bus and at least one (1) at rear.

6.39 UNDERCOATING ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #155, #285 & #450 for additional information.

The entire understructure, including wheelhouses and step wells, but excluding the air dryer, air lines, air valves and axles, shall be spray coated with a heavy duty Tectyl #185, or approved equal, aluminum pigmented, non-flammable, corrosion preventive compound. Particular attention should be directed to areas of water, salt and foreign matter collection and compaction on the underside of the bus.

6.40 SPLASH APRONS AND FENDERS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #156 & #286 for additional information.

Exterior front and rear wheelwell splash aprons (mud flaps) shall be fabricated of rubber and/or rubber and fiber composition. Splash aprons shall be minimum ¼" inch thick and shall be installed behind front and rears wheels and extend to within two and one-half (2½") inches of ground. Rear axle splash aprons shall be of three (3) piece construction and extend full width of bus with a large center section protecting the open transmission bay. Molded rubber fenders shall be installed at front and rear wheelhouses.

INTERIOR BODY SPECIFICATIONS

6.41 FLOOR ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #157, #158, #159, #287, #288, #289, #290 & #514 for additional information.

The floor design shall consist of two (2) levels (bi-level construction). Aft of the rear door extending to the rear settee riser, the floor height may be raised to a height approximately eighteen (18") inches above the lower level. An increase slope shall be allowed on the upper level not to exceed three point five (3.5°) degrees off the horizontal. Where the floor meets any vertical surfaces, such as, platform risers, the surface edges shall be blended with a circular section of radius not less than one (1") inch. Similarly, a molding or cove shall prevent debris accumulation between the floor and the wheel housings. The vehicle floor in the area of the entrance and exit doors shall have a lateral slope not exceeding two (2°) degrees to allow for drainage.

The floor material shall be ¾" inch, pressure-treated 7-ply plywood with a preservative chemical that prevents decay and damage by insects. Preservative chemicals shall contain no EPA listed hazardous chemicals. Plywood shall be installed with the highest grade veneer up. Pressure treated plywood shall have a moisture content at or below fifteen (15%) percent. A barrier shall be installed to prevent contact by road salt with the plywood panels. Shaped and cut edges shall be sealed with linseed oil and titanium dioxide.

Floor may be integral with the basic structure or mounted on the structure securely, using corrosion resistant fasteners, 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. The use of adhesives to secure the floor to the structure shall be allowed only in combination with the use of bolt or screw fasteners and its effectiveness shall last throughout the life of the bus. 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 inches from the normal plane. The floor shall withstand the application of two point five (2.5) times gross load weight without permanent detrimental deformation. Floor with coverings applied, shall withstand a static load of at least one hundred fifty (150) pounds applied through the flat end of a ½" inch diameter rod, with 1/32" inch radius, without permanent visible deformation. Any gaps and fastener heads shall be caulked and sanded prior to application of adhesive for floor covering.

6.42 FLOOR COVERING ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #291, #292, #451 & #515 for additional information.

All floor covering shall be 2.7 mm transit grade flooring material, TFCR27MTS Grey, as manufactured by Altro Transflor, or approved equal. Floor covering shall be installed to all floor areas up to bottom of seat rail including driver platform and riser, rear deck riser, rear settee riser, rear wheel housings, and tops of front wheel housings. A trim railing shall be installed that overlaps top edge of floor covering along seat rails from front wheel housings to rear door on curbside and to rear deck riser on street-side. A stainless steel trim ring shall also be installed around floor covering material on top of front wheel housings and around any inspection openings, such as on driver's platform riser.

A two (2") inch wide by 2.7 mm thick yellow standee line shall be provided to separate passenger boarding entrance area from bus proper and a twenty-one to twenty-nine (21" to 29") inch wide by 2.7 mm thick yellow step area shall be provided at the rear door using Altro Transflor TFM2729 Yellow, or approved equal. Nosings at outside edge of entrance and exit door, and at rear steps to upper deck, shall utilize Altro Transflor, yellow vinyl nosings, or approved equal. Entire plywood area shall be thoroughly sanded and cleaned prior to application of adhesive. Double faced bond technique shall be employed, i.e. adhesive shall be applied to back side of floor covering and wood floor so as to provide a permanent bond that will remain bonded for the service life of the bus.

The floor covering shall be seamless or seams shall be permanently sealed so as to eliminate the permeation of water to the wood flooring. Any seams shall be butted and bevel cut in preparation for welding of seams. Trim moldings shall be utilized on any exposed edges of floor covering material and shall be fabricated from stainless steel or anodized aluminum.

6.43 INTERIOR PANELS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #160, #161, #292 & #296 for additional information.

Interior panels for the headlining and the areas between the windows from window line up to the ducting/lighting fixtures shall be 1/10" inch thick, hard-faced Melamine panels. Pattern/color for ceiling (headlining) panels shall be antique white S-463 gloss finish one (1) side, pier panel mullions shall be antique white S-463 gloss finish one (1) side. Sidewall panels from window line down to seat rail shall be leather grained aluminum.

Panels shall be heat and scratch resistant with hard board back. Panel joints shall be trimmed with stainless steel strips. Other trim strip materials shall be treated to resist rust, corrosion and other weathering and aging effects.

The front crown panel, driver's area and doors shall be painted non-glare black acrylic enamel. Dashboard upper section shall be smooth black metal or fiberglass construction. Lower area of the dash shall be painted non-glare black acrylic enamel. Rear wall above seat back shall be a black Holdsworth, or approved equal, vandal resistant material and shall require trim or molding on edges to prevent passengers from peeling it off.

6.44 MODESTY PANELS

Modesty panels shall be provided along front edge of rear upper level on both the curbside and street-side. Panel material shall be 0.060 inch leather grain finish aluminum. Panels shall utilize a metal edge trim on top, bottom, and inboard edges. Inboard edge of panels shall be attached to vertical aisle stanchions, outboard edge of panels shall be attached to bulkheads, and top/bottom edges of panels shall be attached to horizontal grab rails, which shall themselves be attached to bulkheads and aisle stanchions. The inboard edge of panels shall be attached to vertical stanchions in the same manner as are the top and bottom edges. Panels shall extend to within two and one-half and three (2½ " to 3") inches of floor to facilitate cleaning.

Sturdy barrier panels as manufactured by Transit Products and Services, or approved equal, shall be provided on curbside forward and aft of exit door to protect passengers on adjacent seats. Barriers shall be approximately sixteen to eighteen (16" to 18") inches in width and shall extend high enough to prohibit passengers from getting an arm or hand caught by the door during opening and/or closing function. The panel frame shall be constructed of durable 6063 T5 aluminum and shall be finished with a corrosion-resistant safety yellow powdercoating that will compliment the interior trim. The glazing installed in barrier panels shall be ¼" inch thick tempered safety glass and shall be easily replaced in under four (4) minutes. Glazing must be replaceable without removing the panel from its mounting or disturbing the mounting hardware. Exit door barrier panels shall be of quick change design enabling a maintenance worker to replace glazing by removing one piece of aluminum frame that is held in place by only two (2) stainless steel fasteners. Glazing shall be protected on both sides with "Scotchgard" 1004 Multi-Layer Protective Film for Glass with stepped edge as manufactured by 3M Industrial, or approved equal. This optically transparent, pressure sensitive polyester film tape shall be designed to protect the glazing from intentional mutilation, scratching, and etching. A defaced layer shall have the ability to be quickly and easily removed, exposing a fresh protective sheet.

6.45 ROOF ESCAPE/VENTILATION HATCH ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #517 for additional information.

Two (2) low profile combination roof escape and ventilation hatches as manufactured by Transpec Worldwide, or approved equal, shall be provided. The hatches shall be located approximately over front and rear axles. The hatch opening shall be not less than twenty-three by twenty (23" x 20") inches and shall have four (4) positions for ventilation. When open with the bus in motion, this ventilator shall provide fresh air inside the bus and be capable of being positioned as a scoop with either the leading or trailing edge open no less than four (4") inches, or with all four edges raised simultaneously to a height of no less than three and one-half (3½") inches. Roof hatches shall be sealed to prevent entry of water when closed and shall incorporate a lever type handle for emergency exit release. Hatches shall be labeled as emergency exits with operating instructions, which shall be clearly visible in English and Spanish.

6.46 PASSENGER SEATING AND CAPACITY ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #162, #163, #164, #299, #300 & #453 for additional information.

All seats shall be "Insight" model with vandal resistant VR-50 upholstered inserts throughout, as manufactured by American Seating Company, or approved equal. The seating arrangement shall provide the maximum number of seats possible using a

minimum twenty-eight (28") inch hip to knee room spacing. There shall be no less than thirty-seven (37) total seats including the two (2) wheelchair tie down area seats. All seats in the front lower section of bus shall be forward facing two (2) seat transverse type cantilever mounted, with the exception of two (2) longitudinal type seats for elderly/handicap passengers in extreme forward positions. All elderly/handicap and wheelchair seats shall fold up and lock in the up position only. All forward facing seats shall have integral stainless steel grab rails at top of seat back and stainless steel back panels. Rear settee is to be separated in a 1-3-1 configuration and hinged separately for access to the engine compartment. All seats must meet or exceed FMVSS requirements and must conform to the same for installation requirements.

Perimeter seating is required on upper deck from the rear door to the back of the bus.

Seat plastic trim shall be 980 Gray in color and VR-50 inserts shall have Holdsworth BFNR 28724 red color material. Two (2) wheelchair tie-downs equipped with **Advanced Restraint Module (A.R.M.)** from American Seating with QRT deluxe retractor by Q-Straint, or approved equal. All wheelchair seating/layouts must meet or exceed ADA requirements.

6.47 OPERATOR'S SEAT ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #301 & #302 for additional information.

The operator's seat shall be a premium quality Recaro Ergometro Model AM80, or USSC Q91 Series (w/o side bolsters), or approved equal. The driver's seat shall be comfortable and adjustable so that persons ranging in size from the 95th percentile male to the 5th percentile female may operate the bus. While seated, the operator 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. The angle formed between the seat back and the seat cushion shall be adjustable from a minimum of no more than ninety (90°) degrees (upright) to at least one hundred five (105°) degrees (reclined), with infinite adjustment in between. Height of the seat shall be adjustable so that the distance between the top of the uncompressed seat cushion and the floor may vary between a minimum of fourteen (14") inches to a maximum of twenty (20") inches, with a minimum of a six (6") inch range of adjustment. It shall have a minimum of nine (9") inches of adjustment in the fore and aft direction without contacting any bus part. The seat cushion shall also be adjustable. The seat pan cushion shall adjust in its slope from no less than plus twelve (12°) degrees (rearward "bucket seat" incline), to no less than minus five (5°) degrees (forward slope). The seat shall be installed in the same location in all buses. The operator's seat shall be appropriately dampened to support a minimum weight of three hundred eighty (380) pounds and incorporate a dynamic load damper to augment the springing and padding in the cushions. Rubber bumpers shall be provided to prevent metal-to-metal contact if the seat "bottoms out." Any electrical and/or air connections to the seat shall have quick disconnect provisions to allow easy removal and replacement of the seat. Seat back and seat cushion shall be black upholstery fabric on center portion of seat face, with black vinyl on sides and edges, and no welt cord shall be used. Foam shall be molded polyurethane with pneumatic lumbar support and pneumatic suspension system. Seat cushions shall be of long-lasting, polyurethane non-fire resistant foam. Particular attention shall be given to providing a seat which is comfortable in warm, humid weather and which give full consideration to long periods of occupancy. Operator's seat shall be mounted so that it can be removed by the maintenance personnel, by one (1) mechanic, in one-half (½) hour for service or repair.

This may include the use of captive fasteners to preclude the necessity for two (2) mechanics to perform the procedure.

The operator's seat shall be equipped with a fully retractable seat belt and separate shoulder harness restraint system. The shoulder harness and seat belt shall provide full adjustment of each strap. The belts shall be fastened to the seat so that the operator can adjust the seat without resetting the seat belt. Seat belts shall be stored in automatic retractors. This system shall not incorporate inertia type retractors. The seat belt shall extend from left to right and shall have a usable travel of at least sixty (60") inches measured from the open end of the protective boot to the end of the buckle or latch plate.

6.48 OPERATOR AREA/DASH PANEL

The operator's work area shall be designed to minimize glare to the extent possible. Objects within and adjacent to this area shall be matte black 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 operator's area shall be avoided. Such objects include dash panels, switches and controls, cowlings, barriers, access panels, window frames, visors, etc. Any interior lighting forward of standee line shall be controlled by the operator. A dash route/fare card holder, operator's storage compartment, an 8-pocket acrylic Plexiglas® route map holder (see Operator Barrier section below), radio/GPS antenna access, and waste baskets shall be furnished and installed by manufacturer. Additional provisions for operator's area are included below

6.49 OPERATOR BARRIER ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #303 for additional information.

The operator's barrier shall be a smooth, esthetically pleasing design, providing the appearance of an integral unit as opposed to a conglomeration of different constructive elements. The operator's barrier shall be constructed so that radio/camera equipment box, driver's storage box, schedule holder, and associated equipment are one integral unit. The design and construction of the operator barrier shall require MTS approval.

6.50 DOCUMENT HOLDER ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #304 for additional information.

An acrylic Plexiglas® holder designed to hold vehicle registration and/or insurance documents shall be provided. Holder shall be approximately 10" x 10" inches in size and be mounted in driver's area.

6.51 OPERATOR'S COAT HOOK ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #165 for additional information.

A stainless steel coat hook, with ball and separate strap, shall be provided and mounted in operator's area such that when in use does not interfere with driving operation or obstruct the driver's view.

6.52 OPERATOR'S STORAGE LOCKER

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #166, #303 & #518 for additional information.

An operator's storage locker shall be provided. Storage locker shall be designed and integrated into the operator's barrier. Storage locker for the operator shall be approximately 18" x 18" x 18" in size and shall include a door with a latch. Design of locker will require MTS approval.

6.53 VISOR

One (1) padded sun visor shall be provided for the driver's side of the windshield. Visor shall be shaped and sized adequately to minimize light leakage between the visor and windshield pillars. Visor shall store out of the way and shall not obstruct air flow from climate control system or interfere with other equipment such as the radio handset or destination sign control. Sun visor construction and materials shall be strong enough to resist breakage during adjustments.

One (1) padded sun visor shall be provided for the driver's side window. Visor shall be shaped and sized adequately to minimize light leakage between the visor and operator's window. Visor shall store out of the way and shall not obstruct air flow from climate control system or interfere with other equipment such as the radio handset or destination sign control. Sun visor construction and materials shall be strong enough to resist breakage during adjustments.

PASSENGER ASSISTS

6.54 GENERAL PASSENGER ASSIST

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 at the exit door, a vertical assist shall be provided either as the vertical portion of seat back assist or as a separate item so that a 5th percentile female passenger may easily move from one assist to another using one hand and the other without losing support. All passenger assists in the front door and vestibule shall be powder coated bright yellow to aid visually impaired passengers.

Interior handrails and stanchions shall permit sufficient turning and maneuvering space for wheelchairs and other mobility aids to reach a securement location from the ramp.

Handrails and stanchions shall be provided in the entrance to the vehicle in a configuration which allows person with disabilities to grasp such assists from outside the vehicle while starting to board, and to continue using such assists throughout the boarding and fare collection process. Handrails shall have a cross-sectional diameter between one and one-quarter and one and one-half (1¼" and 1½") inches or shall provide an equivalent grasping surface, and have eased edges with corner radii of not less than ¼" inch. Handrails shall be placed to provide a minimum one and one-half (1½") inches knuckle clearance from the nearest adjacent surface. Without restricting the vestibule space, the assist shall provide support for a boarding passenger from the front door through the boarding procedure. Passengers shall be able to lean against the assist for security while paying fare.

6.55 REAR DOORWAY

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #167 & #305 for additional information.

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. Rear doors shall be fitted with assists at modesty panel to aid in the exiting of passengers. A 5th percentile female shall be provided assists that are functionally continuous during the entire exiting process and the assists shall be no more than four (4") inches from the outside edge of the lower step tread.

A full-size vertical assist that is functionally continuous with the overhead assist shall be provided on the aisle side of the modesty panels at the step wells. A full-size assist no less than thirty-six (36") inches above the average step tread surface shall be provided in the middle of the rear door step well extending from the aisle to the outside edge of the lower step.

6.56 VESTIBULE

The aisle side of the operator's barrier, the wheel housings and when applicable the modesty panels shall be fitted with vertical passenger assists panels that are functionally continuous with the overhead assist and that extend to within thirty-six (36") inches of the floor. These assists shall have sufficient clearance from the barrier to prevent inadvertent wedging of a passenger's arm or hand. A horizontal passenger assist shall be located across the front of the bus and shall prevent passengers from sustaining injuries on the 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 front door assist shall be no less than thirty-six (36") inches above the floor or the average step tread surface. 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 operator's barrier, wheel housings, or front modesty panel.

6.57 OVERHEAD

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #168 for additional information.

Except forward of the standee line and at the rear door, a continuous, full grip overhead assist shall be provided. This assist shall be convenient to standees anywhere in the bus and shall be located over the center of the aisle seating position of the transverse seats. The assist shall be no less than seventy-two (72") inches above the floor. Overhead assists shall simultaneously support one hundred fifty (150) pounds on any twelve (12") inch length. No more than five (5%) percent of the full grip feature shall be lost due to assist supports.

Overhead handrails shall be provided which shall be continuous except for a gap at the rear doorway.

Handrails and stanchions shall be sufficient to permit safe boarding, on-board circulation, seating and standing assistance and alighting by persons with disabilities.

The vertical stanchion immediately behind the driver shall either terminate at the lower edge of the aisle-facing seats, if applicable, or be "dog-legged" so that the floor attachment does not impede or interfere with wheelchair footrests. If the driver seat platform must be passed by a wheelchair or mobility aid user entering the vehicle, the platform, to the maximum extent practicable, shall not extend into the aisle or vestibule beyond the wheel housing.

The minimum interior height along the path from the lift to the securement location shall be seventy-two (72") inches.

A crash resulting in a one (1') foot intrusion shall not produce sharp edges, loose rails, or other potentially dangerous conditions associated with a lack of structural integrity of the assist. Any joints in the assist structure shall be underneath supporting brackets and securely clamped to prevent passengers from moving or twisting the assists. All components of the passenger assists including functional components shall be of anodized aluminum or stainless steel. Assists shall withstand a force of three hundred (300) pounds applied over a twelve (12") inch lineal dimension in any direction normal to the assist without permanent visible deformation. Brackets, clamps, screw heads and other fasteners used on the passenger assists shall be flush with the surface and free of rough edges.

6.58 FRONT DOORWAY

Front doors, or the passenger entry area, shall be fitted with ADA compliant assists. Assists shall be as far outward as practicable, but shall be no further than four (4") inches from the outside edge of lower step tread, shall provide a near vertical hand grip at the outer edge of the door, 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 assists and the assists on the wheel housing or on the front modesty panel.

6.59 LONGITUDINAL SEATS

Longitudinal seats shall have vertical assists located between every other designated seating position. 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 fifty-two (52") inches apart or be functionally continuous for a 5th percentile female passenger. (Configuration of assists shall be reviewed/determined at the pre-production meeting with final configuration approval by MTS).

6.60 ADDITIONAL VERTICAL ASSISTS

Up to eight (8) vertical passenger assists shall be installed at the aisle side of forward facing seats from the seat grab handle to the overhead passenger assist. (Configuration of assists to be reviewed/determined at the pre-production meeting with final configuration approval by MTS).

PAINTING AND LETTERING

6.61 GENERAL PAINTING AND LETTERING ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #455 for additional information.

Color numbers, color chips, locations, typeface, logo grid, drawings and specifications for all interior and exterior requirements will be furnished to the bus manufacturer at pre-production meeting.

6.62 EXTERIOR PAINT

The exterior of the bus shall be painted with up to two (2) colors and be of polyurethane paint which is baked dry (actual colors to be provided at pre-production meeting). The bus manufacturer will provide line drawings of the front, rear, driver's side and passenger side to MTS. MTS will illustrate the colors and their locations for the manufacturer's name and number of the paints.

6.63 ROOFTOP NUMBERS

1. There will be a four (4) digit rooftop number on each bus. Numbering shall be determined at pre-production meeting.
2. All numbers shall be black decals; edge sealed and shall be block style.
3. Numbers shall be located on rooftop to rear of canopy and shall read from street-side to curbside centered across bus.
4. Numbers shall be minimum:

A)	Height:	30"
B)	Width:	16"
C)	Width of Print:	3"
D)	Space between numbers:	6"

6.64 LETTERING AND SIGNING-EXTERIOR ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #306 for additional information.

All exterior markings shall be manufactured from 3M 'Scotchlite' 580 series material, red over white paint and white over red. All exterior decals, lettering, logos, and numbers shall be edge sealed.

6.65 LOGOS

Two (2) "Metropolitan Transit System" decals approximately six (6") inches tall by ninety-six (96") inches long shall be applied, one (1) to each side of the bus on forward portion of roof panel. The street-side decal shall be located on side of roof panel and shall begin aligned with forward edge of the #1 window frame. The curbside decal shall be located on side of roof panel and shall end aligned with forward edge of the #1 window frame.

6.66 NUMBERING

Four (4) sets of four (4) numbers each, six (6") inches high shall be affixed to the exterior of the bus, one (1) set to each of four (4) locations as follows: On front of bus at top front curbside corner, over front door, over driver's window, and on rear of bus at upper street-side corner. Actual vehicle numbers to be provided at pre-production meeting.

6.67 DISABLED SIGN

Three (3) international symbols indicating wheelchair accessibility will be applied, one (1) to the front, one (1) to the curbside and one (1) to the rear.

6.68 DECAL – FRONT

One (1) "MTS" Logo decal approximately fourteen (14") inches tall by twenty-six (26") inches long and pre-marked shall be applied to the front of the bus below and centered on the windshield.

6.69 DECAL – REAR

One (1) Metropolitan Transit System decal with MTS Logo approximately twenty-two (22") inches tall by seventy-two (72") inches long and pre-marked shall be applied to the rear of the bus on engine door.

6.70 KNEELING AND LIFT DESIGNATION

The word "Kneeling" with an arrow pointed down, and "Lift" shall be applied just rear of the front entrance door. If bus design utilizes rear axle kneeling, the word "Kneeling" with an arrow pointed down shall also be applied just rear of exit door. Lettering shall be one (1") inch tall. Exact location will be specified by MTS.

6.71 CALIFORNIA NUMBER DESIGNATION

California Operator Identification numbers shall be applied to both sides toward the rear of the bus. Lettering shall be approximately two (2") inches tall by fourteen (14") inches long. Location shall be on lower skirt aft of rear axle. Actual number is operator distinctive and shall be furnished at pre-production meeting.

6.72 BATTERY DISCONNECT DECAL

Decal shall be on exterior of battery access door and shall read "BATTERY DISCONNECT."

6.73 AIR TANK DRAIN DECAL

Decals indicating the location of all air tank drain valves shall be provided.

6.74 INTERIOR PAINT

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #169 & #296 for additional information.

The painted surfaces of the ceiling above the driver's compartment shall be painted with black acrylic enamel, matt finish and applied over a cleaned, primed surface.

The lower dash, inside of entrance and exit doors, windshield frame area, and instrument case shall be painted with semi-gloss black acrylic enamel applied over a cleaned and primed surface.

6.75 LETTERING AND SIGNING - INTERIOR

Markings shall be "Scotchcal" only, elastomeric, pigmented file, die-cut, and pre-spaced, with pressure-sensitive adhesive. All marking materials shall be applied in strict conformance with the film manufacturer's recommendations as to surface preparation and application procedure. No hand lettering or stenciling will be permitted.

Decals are to be furnished and installed by manufacturer and must be in English and Spanish.

6.76 VEHICLE NUMBER

One (1) each, four (4) digit set of six (6") inch numbers on destination sign door.

6.77 NO SMOKING

No Smoking - No eating - No Radio Playing on destination sign door.

6.78 WHEELCHAIR RAMP OPERATING INSTRUCTIONS

Wheelchair Ramp Operating Instructions shall be provided in driver's area pertaining to dash control buttons and switches. Wheelchair Ramp Operating Instructions shall also be provided in the manual control operation compartment if bus is equipped with manual controls.

6.79 PRIORITY SEATING SIGNS

Contractor shall provide and install sign(s) which indicate that seats in the front of the vehicle are priority seats for persons with disabilities, and that other passengers should make such seats available to those who wish to use them. At least one (1) set of forward-facing seats shall be so designated.

Each wheelchair or mobility aid securement location shall have a sign designating it as such.

Characters on signs required by this section shall have a width-to-height ratio between 3:5 and 1:1 and a stroke width-to-height ratio between 1:5 and 1:10, with a minimum character height (using an upper case "x") of ⅝" inch, with "wide" spacing (generally, the space between letters shall be 1/16 the height of upper case letters), and shall contrast with the background either light-on-dark or dark-on-light.

6.80 INTERNATIONAL SYMBOL

One (1) International Wheelchair Lift symbol immediately below the bottom of the window adjacent to each wheelchair tie down location.

6.81 REAR DOOR OPERATION

Passenger rear door operating instructions shall be in English and Spanish to read as follows: (Caution! Stand clear door controlled by driver). Spanish to read as (Cuidado! mantenga distancia la puerta esta controlada por el conductor).

6.82 VANDALISM/NO SMOKING

Two (2) Vandalism is a Crime and No Smoking signs over rear wheel housings and in the standee windows on both the curbside and roadside.

6.83 NO RADIOS/NO EATING

Two (2) international symbols, No Smoking/No Radios/No Eating signs over rear longitudinal passenger seats (curbside and roadside).

6.84 EMERGENCY ESCAPE HATCH INSTRUCTION

Emergency escape hatch identification and operating instructions to be provided in Spanish and English.

6.85 RADIATOR FILL CAUTION

Radiator fill door "caution" on inside of door shall be provided.

6.86 EMERGENCY EXIT INSTRUCTIONS

Emergency Exit and Window Release Lever operations instructions - MUST BE METAL and riveted to window frame rail within six (6") inches and adjacent to each release lever.

6.87 WATCH YOUR STEP SIGN (PISE CON CUIDADO)

"Watch Your Step" signs shall be installed at entrance door area, at exit door area, and at the steps to the rear deck area. The exact locations will be specified by MTS.

All bilingual signs are to be pre-approved before installation.

6.88 CHASSIS SPECIFICATIONS

This section, broadly titled "Chassis" details the requirements for primary and secondary (accessory) mechanical equipment of the transit bus.

6.89 ENGINE ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #170, #171, #172, #173, #174, #308, #309, #310, #311, #312, #313, #459, #460 & #461 for additional information.

The engine shall be an electronically controlled Cummins ISL-G 8.9 Liter CNG Engine with 280 bhp and 900 lb.-ft. of torque. The engine shall meet or exceed all EPA and/or any other emissions requirements for engines in force at the time of manufacture when operating on fuel equal to CARB Specifications for Compressed Natural Gas #2292.5.

The engine and transmission shall be designed to mount into the bus aligned in a "T" Drive configuration.

Specifications for engine electronic controls shall include a full-load idle speed of 600 RPM, a fast-idle speed of 1000 RPM, and a maximum engine speed governed at 2200 RPM. The engine shall incorporate electronic controls capable of transmitting and receiving electronic inputs and data from other drive train components and broadcasting that data to other vehicle systems. Communication between electronic drive train components and other vehicle systems shall communicate data using a combination of SAE Communication Protocols J1939 and/or J1708/J1587. Electronic controls shall be compatible with either 12 or 24 volt power distribution and compensate for changing conditions such as variations in vehicle weight and engine power. The electronically controlled engine shall have on-board diagnostic capabilities, be able to monitor functions, store and time stamp out-of-parameter conditions in memory, and communicate faults and vital conditions to service personnel. The engine shall contain built-in protection software to guard against severe damage. A diagnostic reader device and/or laptop computer connector port, suitably protected against dirt and moisture, shall be provided in the operator's area. The on-board diagnostic system shall trigger a visual alarm to the operator when the electronic control unit detects a malfunction.

Accelerator system shall be Williams consistent with Transmission/Engine, or approved equal. The throttle pedal shall be mounted so that it is equal to or higher than brake pedal height.

A Morse speed control, or approved equal, shall be provided in the engine compartment for operation of the engine from the engine compartment from idle to maximum no load speed. The Morse speed control shall only operate with the transmission in neutral and the rear run switch in the rear run position.

Throttle controls shall be disabled while the bus brake interlock is activated. Use of the fast-idle function shall activate the bus brake interlock system. The fast-idle shall interface with the bus brake interlock system in such a way as not to allow the fast-idle or brake interlock to activate while the transmission is in any drive range.

The engine shall incorporate an engine coolant temperature sensor, separate from electronic controls, set at two hundred fifteen (215°) degrees Fahrenheit connected to an "ENG TEMP" or "COOLANT TEMP" warning indicator lamp located on the dash.

The engine shall incorporate an oil pressure sensor separate from electronic controls, linked to a "LOW OIL PRESS" warning indicator lamp located on the dash.

All engine accessories, including air compressor, alternator, hydraulic pump, power steering pump, fan motor, air conditioning compressor, and engine oil cooler, are to be readily accessible and able to be serviced without removal of engine mounts or supports.

Provision shall be made for easy access to the engine Spark plugs. The flywheel end of the engine shall be accessible from the interior of the bus through a large opening behind and under the rear seat.

The engine and transmission shall be mounted and de-mountable as a unit or individually. Engine and transmission mounts shall be made from a combination of steel and rubber material and be arranged to provide convenient accessibility for service.

All fluid and air lines shall have connectors at the engine compartment bulkhead so as to provide for efficient service or replacement.

Engine compartment electronic controls wire harnesses shall be made using heat resistant wire and shall be protected in high temperature sheathing or split loom. All wire harness connectors shall be moisture and corrosion resistant Packard Weather Pac, or approved equal, connectors.

All wire harness connectors and splices that interface engine and/or transmission electronic controls with bus wiring shall be engine and/or transmission manufacturer specified or approved. A diagnostic connector for Cummins Engine and ZF Transmission shall be provided in driver's compartment and engine compartment.

All engine exhaust piping from turbocharger outlet up to the bottom of muffler shall incorporate rigid metal composite insulation shielding as manufactured by InsulTech, LLC, or approved equal, to reduce engine compartment temperatures.

The starter shall be a Delco Remy MT39 electrical starter, or approved equal.

A dry type air cleaner, Nelson with restriction indicator, or approved equal shall be used. The air intake duct shall be so shaped as to eliminate water entrance into the air induction system. A passage shall be provided so that any water finding entry will drain prior to induction into the engine. The air cleaner shall be mounted to permit easy access for filter maintenance. An easily visible filter service indicator shall be provided in the engine compartment.

All engine accessories shall be driven directly from the engine without the use of drive belts, except for the air conditioning compressor and generator. Water pump may also be belt driven.

Belts shall be serpentine type belts, with the exception of air conditioning compressor belt, which may be installed in power band set as manufactured by Gates or Goodyear, or approved equal. In addition an Idler pulley or belt tensioner shall be installed to reduce vibration on belts if necessary whether a Thermo King or Carrier unit is used.

All hoses (air, coolant, fuel, engine oil, transmission fluid and hydraulic fluid) in the engine compartment, excluding high pressure hoses, shall be Aeroquip FC300, FC350, FC510 or 2807 hose, or approved equal, with stainless steel crimped fittings, where pressures and/or temperatures permit, and shall have standard JIC stainless steel, swivel end fittings. They shall be routed or shielded so that failure of a hose shall not allow hydraulic fluid or oil to spray or drain onto any component operable above the auto ignition temperature of the fluid. Hoses shall be individually supported and shall not touch one another or any part of the bus.

Engine coolant hoses not utilizing threaded end fittings shall be of a silicone type. All hose clamps shall be stainless steel, sleeved and a constant torque type, Breeze or approved equal. All power steering and hydraulic pump discharge hoses shall be "hi-impulse" hose with crimped stainless steel fittings.

Engine shall be equipped with Probalizer, or approved equal, oil sample fittings. Oil sample fittings shall be installed in a location that is conveniently accessible to service personnel.

Engine compartment shall be equipped with five (5) service lamps Dialight 17081CB, or approved equal. The lamps shall be positioned for optimal lighting throughout engine compartment to aid in servicing of engine components.

6.90 SERVICE COMPONENTS

The engine oil filler tube and dipstick shall be mounted in the engine compartment and be accessible through engine compartment door. Engine oil dipstick shall have measurements with engine running and stopped.

The transmission filler tube and dipstick shall be located in the engine compartment and be accessible through the engine compartment door.

The engine oil pan drain plug and the transmission oil pan drain plug shall be a magnetic type, located in such a way as to provide for easy service access.

6.91 EXHAUST SYSTEM

← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #315 for additional information.

The exhaust system and tailpipe assembly shall be routed upward through the engine compartment and out at the roof-line on the street-side of the bus. Exhaust stack (tailpipe) will be pointed straight back and be of sufficient height to prevent exhaust gases and waste heat from discoloring or causing heat deformation to the bus. There shall be at least a two (2") inch gap between roof fiberglass and exhaust tailpipe to prevent possible fires. The exhaust system shall be adequately shielded to prevent heat damage to any bus component. All exhaust piping from the turbocharger outlet up to the bottom of muffler shall incorporate rigid metal composite insulation shielding as manufactured by InsulTech, LLC, or approved equal, to reduce engine compartment temperatures.

The muffler shall be manufactured by Nelson, or approved equal. Exhaust tubing and tailpipe shall be heavy gauge corrosion resistant steel.

The use of vertical exhaust shall not increase the overall length or height of the vehicle. The engine compartment, including the exhaust duct plenum shall be completely sealed to prevent smoke or fumes from entering the bus interior.

⑥ → **6.92 COOLING SYSTEM** ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #175, #316, #317 #318, #319 & #343 for additional information.

Temperature of operating fluids on the bus shall be controlled by a cooling system. The cooling system shall be sized to maintain the engine out, or top radiator tank temperature at less than two hundred five (205°) degrees F, during the most severe operations possible with the bus loaded to GVWR and with ambient temperatures up to one hundred twenty (120°) degrees F.

The Contractor shall demonstrate compliance with this requirement on the first bus prior to shipment to MTS.

A thermostatically controlled hydraulically driven fan shall be provided and be effectively power driven only at engine temperatures in excess of one hundred eighty-five (185°) degrees F. The fan shall be of the variable speed design incrementally increasing fan speed as engine temperature increases. Fan shall reach maximum speed when engine coolant temperature reaches one hundred ninety-five (195°) degrees F.

The hydraulic system reservoir sight glass and fill cap shall be accessible from engine compartment door. Reservoir shall be equipped with a low fluid sensor, which shall activate an indicator light on driver's instrument panel if reservoir is low on fluid. Hydraulic system shall also incorporate a filtering system with differential pressure gauge.

The radiator shall be located to the left rear of the bus. It shall have stainless steel top and bottom tanks with welded inlet and outlet necks.

All cooling system pipes, necks and stems where cooling system hoses are attached shall have a raised lip to keep the hose and clamp from slipping off under pressure.

Electrical controls for cooling fan operation shall be designed so that any electrical failure will result in the fan running at maximum rpm.

The radiator surge tank shall be mounted above the radiator. It is to be made from stainless steel and equipped with a safety type filler cap, and an AC 861127 automatic pressure relief valve, or approved equal. Surge tank shall have only one (1) sight glass at the full mark, visible from the filler cap service door.

Access to the surge tank filler cap shall be through a spring loaded service door size to be determined at pre-production meeting located on the left side near the rear of the bus.

An engine coolant filtering system shall be included. The filter shall contain a time release coolant conditioner. The filter may be remote chassis mounted for easy service access.

CNG FUEL SYSTEM

6.93 CNG FUEL SYSTEM – GENERAL ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #176 for additional information.

The fuel system provided shall be a CNG system capable of providing approx. 400 miles between refueling. The fueling system shall be capable of providing a maximum cylinder pressure of 3,600 psi @ seventy (70°) degrees F. at a delivery rate from 750 CFM to 950 CFM.

The fuel system shall be designed to the minimum regulations and/or standards for safety, quality, reliability and longevity of FMVSS, DOT, Title 13, NFPA 52, ASME, ASTM, SAE, CGA, AGA, CFR and UL. Where a conflict exists, statute, code or regulation shall take precedence over guidelines or recommended practice. In the absence of a statute, code or regulation, the documented guidelines or recommended practice shall apply.

For the purpose of this section, Fuel System includes fuel cylinders, their mounting, lines, tubing, regulators, valves, controls, methane gas detection systems, fire suppression systems, ventilation and any electrical directly or indirectly affected by the CNG installation.

Prior to and after production, Contractor shall demonstrate compliance with all of the above referenced statutes, codes, guidelines or recommended practices.

6.94 FUEL CYLINDERS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #97, #177, #178, #320, #321, #322, #323, #324 & #465 for additional information.

Fuel supply shall provide approximately four hundred (400) miles driving range at the agencies operating profiles between refueling at 3600 psi. Seven (7) 16.1" OD x 120" L CNG cylinders with 3298 scf @ 3600 psi capacity each, as manufactured by Lincoln Composite, or approved equal, shall be provided for a total system capacity of 23086 scf @ 3600 psi.

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 System 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 shall be a composite of carbon and glass fibers as manufactured by Lincoln Composite, or approved equal. The cylinders shall be certified for a minimum useful life of fifteen to twenty (15 to 20) years and shall not require re-certification for the full fifteen to twenty (15 to 20) year period. Fuel cylinders shall be certified to NGV's most current standards.

Fuel cylinders shall be constructed and inspected in accordance with the above referenced statues, codes, regulations, guidelines and recommended practices. Cylinders, valves and relief device lines shall be properly marked or labeled as required.

Fuel cylinders shall be roof mounted. The cylinders shall be hidden from view in an aero-dynamic enclosure. Design and style of roof enclosure is subject to approval by MTS.

Buses with roof mounted cylinders, if permitted by Title 13, shall be required to demonstrate before and after production in utilizing the procedures for testing, handling and stability included in the SAE Technical Paper Series, 861950, First Article Bus Testing, handling and stability, which includes steady rate cornering and over-steer, transient cornering and obstacle avoidance. Standards shall be comparable to non-roof mounted buses, or corrected to acceptable safe standards.

Buses with roof-mounted cylinders require a non-skid walkway in front, behind, and on top of the cylinder enclosure. The non-skid material shall be edge sealed. Front and rear ends of enclosure shall incorporate a step fabricated into enclosure end caps.

6.95 MANUAL SHUT-OFF VALVE ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #179 & #325 for additional information.

A UL listed manual shut-off valve shall be provided and installed and identified on the exterior of the bus "MANUAL SHUT-OFF VALVE." It is preferred that the shut-off valve be located near the fill valve. Valve shall be located within a person's reach at ground level.

6.96 AUTOMATIC SHUT-OFF VALVE ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #180 for additional information.

A UL listed automatic shut-off valve shall be provided and installed. It shall be identified with a decal mounted on the bus exterior labeled "AUTOMATIC SHUT-OFF VALVE." The automatic shut-off valve shall be normally closed and held open by electrical power. The valve shall be wired so it shuts off when the run switch is in the off or accessory positions, when engine vacuum is not present, or a methane gas or fire fault is detected. Location shall be adjacent to the manual shut-off valve.

6.97 CNG FUEL FILLER FITTING

The fuel filler receptacle fittings shall be located at the curbside rear of the bus aft of the rear door. Contractor shall provide and install Sherex Series 3600 and 5000 type fuel receivers at fueling location, or approved equal. Receptacles shall be compatible with Series 1000 and 5000 Sherex Series nozzles and be equipped with dust caps. The access door for fuel receivers shall be interlocked to the engine to prevent the engine from being operated or started while fuel door is not latched. If fuel fill access door is opened while the engine is running, engine shall shutdown after a 15 second delay. The exterior of the filler door shall be labeled in 1" high letters, "FOR CNG ONLY." Exact location shall be approved by MTS.

6.98 FUEL LINES ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #181 & #182 for additional information.

This section was written to be in compliance with NFPA-52 for US buses and CAN/CGA-B149.4-M91 for Canadian buses. All tubing shall be a minimum of seamless Type 304 stainless steel (ASTMA269 or equivalent). Fuel lines and fittings shall not be fabricated from cast iron, galvanized pipe, aluminum, plastic, or copper alloy with content exceeding seventy (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 securely mounted, braced and supported every twenty-four (24") inches, or as designed by the bus manufacturer to minimize vibration, 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 a protected location(s) to prevent line or manifold damage from unsecured objects or road debris.

Fuel hose and hose connections, where permitted, shall be less than forty-eight (48") inches in length, made from materials resistant to corrosion and action of natural gas, and protected from fretting and high heat.

High pressure CNG lines shall be pressure tested to a minimum of one hundred twenty-five (125%) percent of system working pressure prior to fueling. CNG or Nitrogen shall be used to pressure test the lines/assembly. The bus manufacturer shall have a documented procedure of testing the high pressure line assembly.

Fuel lines from Sherex valves to cylinders shall be one (1") inch ID, minimum.

6.99 FUEL UNLOADING ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #183 & #327 for additional information.

A provision shall be provided to unload all of the fuel from the storage cylinders to a facility based low pressure gas line or storage facility. Connection shall be accessible at the fuel fitting area and be properly protected and labeled. It shall be possible to unload a full load of fuel in thirty (30) minutes or less.

6.100 FIRE SUPPRESSION and GAS DETECTION SYSTEM ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #185 for additional information.

Automatic Fire Sensing and Suppression (AFSS)

1. General Requirements: An Automatic Fire Sensing and Suppression System (AFSS) complete with optical infrared fire sensors, control panel, vehicle interface, and extinguishing system shall be provided for the engine compartment.

2. AC Compartment: A separate detection only system consisting of two Optical Infrared Detectors shall be provided for the AC Compartment.

3. AFSS Operation: Upon detection of a fire the protection panel shall alert the operator with visual and audible signals and then initiate automatic engine shutdown, extinguisher discharge, and related sequences.

4. Supervision Monitoring: Upon loss of continuity of the detection or suppression circuits the protection panel shall provide a visual and unique audible alarm.

5. Control Panel: The Control Panel shall be located within view of the driver/operator but shall not impede his view of the road. A single connection interface shall be provided to interface to the AFSS harness.

   The protection panel shall incorporate the following driver/operator controls:

A) ALARM SILENCE

B) Visual and audible alarm TEST switch

C) DELAY engine stop/extinguisher discharge

D) RESET

The protection panel shall provide fifteen (:15) second time delay prior to discharging the extinguisher and sending signal to shut engine down.

4. Manual Discharge Switch: A Manual Discharge switch shall be provided within easy reach of the driver/operator. The switch shall be protected against inadvertent activation by means of a protective guard held in place by a tamper seal. The control panel shall indicate a Manual Discharge event with a unique visual display that cannot be reset by the driver/operator. Activation of the manual discharge switch shall immediately discharge the extinguisher(s) and send a signal for engine shutdown.

5. Fire Detection: Two Optical Infrared Fire Detectors shall be located in the engine compartment and two (2) in the A/C compartment to view major fire sources. The system shall also incorporate two (2) spot sensors in the engine compartment, one (1) of which shall be located near the base of the muffler. The bus manufacturer and the AFSS manufacturer shall determine location and temperature of sensors. The detection system shall be compatible with infrared optical detection, linear thermal detection or spot thermal detection used independently or in any combination.

   The optical flame sensor shall be dual spectrum infrared with at least a ninety (90°) degree conical field-of-view. The optical sensor shall respond to an explosive fuel fire in less than one half (½) of one (:01) second. The sensors shall be immune to typical false alarm sources found on transit buses. Each sensor shall be equipped with a status LED to indicate power on and alarm conditions.

6. Fire Suppression: The pre-engineered fire extinguishing system shall consist of extinguisher(s), nozzle(s) (minimum of four nozzles) and a distribution system designed for vehicle applications that shall be installed in accordance with the AFSS manufacturer installation manual.

   Extinguisher- the extinguisher shall be of the stored pressure type and consist of a valve and DOT approved cylinder. The extinguisher shall be charged with a minimum of twenty-five (25) pounds of BC rated Purple K pressurized to a minimum of 350 psi. The valve shall incorporate a pressure gauge and shall not require the attachment of other devices such as a control head for operation. Provisions shall be provided on the extinguisher bracket or other suitable location to stow the anti-recoil cap and/or other devices used to ensure safe transportation of the extinguisher when removed from the bus.

7. Electrical Requirements:

Input Voltage: The system shall operate with a 12 VDC or 24 VDC supply. The system shall be compatible with SAE Recommended Practice J1455. The AFSS shall not require more than 2.4 W (0.1 A @ 24 VDC, 0.2A @ 12 VDC) of electrical power to operate Harness. The harness shall be easily maintained and repaired by a 3M mechanic using standard hand tools. Only commonly available wires and connectors shall be required.

Acceptance Tests: The completed system shall be tested and certified by the supplier. The test shall determine that the system has been properly installed and will function as intended. A Certification Report shall be provided that includes a detail of the tests performed. A service representative shall be on MTS property for the inspection of the systems as soon as the first bus arrives.

8. Combustible Gas Leak Detection System General Requirements: A Combustible Gas Leak Detection system shall be provided to monitor the engine compartment, A/C compartment and each separate fuel storage area(s), and shall automatically activate audible and visual alarms in the operator's area for two levels, Trace and Significant of the lower explosive limit (LEL), of natural gas (methane). The system shall be compatible with the control panel for the AFSS and shall not require separate interfaces or control panels.

The bus shall have a total of five (5) gas detectors. These will detect a gas leak and have a sensitivity of fifteen to twenty (15% - 20%) of the lower explosive limit for methane (natural gas). The lower explosive limit for methane is five (5%) and the upper explosive limit is fifteen (15%) by volume of air. The vapor density is .06 and therefore lighter than air. The ignition temperature is nine hundred ninety-nine (999°) degrees F. six hundred thirty (630°) degrees C. The detectors are located as follows:

A) Two (2) ea. in the roof mounted fuel storage bay.

B) One (1) ea. in the A/C compartment.

C) Two (2) ea. in the engine compartment.

The detectors shall have an LED on them to indicate the status of the unit, a green light indicates the detectors are functioning and no gas is detected, and a red light indicates that gas has been detected or it is not functioning correctly. If this happens a red light labeled "gas detection system warning" will light and a buzzer will sound. If the ignition system is in the "Off" position, the driver's horns will also cycle to alert maintenance personnel. There shall be also a green light on the driver's dash panel labeled "gas detection system on", to indicate that power is provided to the gas detection system.

9. Combustible Gas Sensor: The CGS sensor shall be the metal oxide type and shall not require calibration. The sensor element shall be enclosed in a chamber specifically designed to minimize typical contaminants such as oil mist, water, cleaning fluids and other contaminants that may poison or shorten the life of the sensor. The sensor element shall be field replaceable without special tools. Each sensor shall incorporate a bi-color status LED to indicate Power, Trace Alarm, Significant Alarm and Element Failure.

   A) Trace Gas - Upon detection of a trace gas (20%LEL) the effected sensor LED and protection panel "Gas Leak" LED shall flash red.

   B) Significant Gas - Upon detection of a significant gas (50%LEL) the affected sensor and protection panel "Gas Leak" LED shall remain on steady red, and the protection panel audible (silenceable) alarm shall sound. The sensor LED shall latch to enable easy location of leaks by maintenance crews.

   Upon loss of continuity or sensor element failure the sensor LED will alternate red/green and the protection panel "Gas Trouble" lamp will illuminate.

6.101 AUDIBLE WARNING

The circuit monitor shall also be equipped with a continuous tone audible alarm. This alarm shall sound in GAS, FIRE and FAULT conditions. Once the audible alarm begins to sound it shall be capable of being silenced by depressing a labeled ALARM SILENCE button, provided on the circuit monitor front panel. Indication of a silenced alarm shall be provided via a labeled SILENCED ENGAGED LED.

⑥ → **6.102 TRANSMISSION** ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #186, #187 & #330 for additional information.

The transmission for a 40' bus shall be a ZF 6HP594, 6 speed with integral input retarder. Gross input power, gross input torque, and rated input speed shall be compatible with the engine. Transmission shall be mounted in a way to allow easy removal without having to remove or move the engine. A mechanic, with optional assistance, shall be able to remove and replace the transmission assembly for service in less than sixteen (16) total combined man-hours. The transmission shall be designed to operate for not less than 300,000 miles without replacement or major service.

The transmission shall incorporate electronic controls 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 communicate data using SAE Communication Protocols J1939. Electronic controls shall be compatible with either 12 or 24 volt power distribution, provide consistent shift quality, and compensate for changing conditions such as variations in vehicle weight and engine power. The electronically controlled transmission shall have on-board diagnostic capabilities, be able to monitor functions, store and time stamp out-of-parameter conditions in memory, and communicate faults and vital conditions to service personnel. The transmission shall contain built-in protection software to guard against severe damage. A diagnostic reader device and/or laptop computer connector port, suitably protected against dirt and moisture, shall be provided in the operator's area. The on-board diagnostic system shall

trigger a visual alarm to the operator when the electronic control unit detects a malfunction.

The transmission shall be equipped with an integral input hydraulic retarder designed to extend brake lining service life. Hydraulic fluid should flow continuously from the retarder directly to the oil cooler during the retarder cycle. The application of the retarder shall become partially engaged (⅓ of its total application) when the throttle is completely released (zero throttle). Maximum retarder shall be achieved when brake pedal is depressed (⅔ of total at 1 psi brake application pressure and full retarder engagement at 5 psi brake application). Brake lights shall illuminate when the retarder is activated.

The transmission shall have an auto neutral feature that shall cause it to automatically and immediately shift to "Neutral" whenever the transmission is left in gear and the parking brake is applied. This system shall also automatically shift the transmission to "Neutral," after a five (5) minute delay, whenever the exit door brake interlock is applied.

A brake pedal application of 15 to 20 psi shall be required by the operator to engage forward or reverse range from the neutral position to prevent sudden acceleration of the bus from a parked position.

Transmission shall be equipped with Probalizer, or approved equal, oil sample fittings. Oil sample fittings shall be installed in a location that is conveniently accessible to service personnel.

6.103 AIR SYSTEM ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #188, #331, #332, #333, #334, #335, #337 & #466 for additional information.

The bus air system shall operate all accessories and the braking system with reserve capacity. The system shall have the ability to charge the air system from 40 psi to the governor cut-off pressure of 125 psi in less than three (3) minutes. Bus air system shall not leak down more than 5 psi as indicated on the instrument panel mounted air gauges, within fifteen (15) minutes from the point of governor cut-off.

The air compressor shall have a capacity of not less than 15.5 CFM at 1250 RPM and shall be a Wabco air compressor, or approved equal. The compressor shall be engine mounted and be gear driven. Air for the compressor shall be filtered through the main engine air cleaner system.

The air pressure governor shall be a Bendix-Westinghouse D-2 type, or approved equal, and adjusted at 125 psi cut-out pressure. The air governor shall be remote mounted for ease of access.

The pressure relief valve and the muffler tank will be mounted relative to the air compressor discharge port. Muffler tank drain valve will be remote mounted to discharge below the engine cradle level and be accessible from curbside lower skirt.

The main air supply line from the air compressor to the bus shall be Teflon® lined flexible steel braided. Air lines except necessary flexible lines will conform to the installation and material requirements of SAE J844-type 3B for nylon if not subject to temperatures over two hundred (200°) degrees F. Nylon tubing shall be installed in accordance with the following color-coding standards:

- Green: Primary Brakes and Supply
- Red: Secondary Brakes
- Brown: Parking Brake
- Yellow: Compressor and Governor
- Black: Accessories
- Blue: Suspension

Nylon lines may be grouped and shall be continuously supported in an approved conduit.

All air lines shall be sloped toward a reservoir and routed to prevent water traps.

Air system reservoirs shall be centrally located. This system shall consist of:

- ✓ One (1) Supply Tank: Minimum 1800 cu. in.
- ✓ One (1) Accessory Tank: Minimum 1800 cu. in.
- ✓ One (1) Primary Tank: Minimum 1800 cu. in.
- ✓ One (1) Secondary Tank: Minimum 1800 cu. in.

Total air tank capacity shall be a minimum of: 7,200 cu. in.

All tanks shall be ***clearly marked*** as to what function they supply.

All tank drain valves shall have means to drain moisture below engine cradle level.

A Bendix AD-9, or approved equal, with muffler will be provided to prevent the accumulation of moisture in the air system. The air dryer will be vertically mounted with an easily replaceable desiccant cartridge. The air dryer must also have purge and drain cycle and be changeable through the bottom of the dryer. The main air line check valve located between the air compressor and the first reservoir must be accessible for maintenance. Means will be provided to establish the check valve to be in working order.

A tow and shop air line connector shall be installed on the front of the vehicle and shall be labeled "TOW SIGNAL" & "BUS AIR." A shop air line connector shall also be installed at the rear of the bus and shall be labeled "BUS AIR." The air line connectors shall be of the quick disconnect type mounted in a 1/4 inch pipe fitting.

6.104 BRAKE COMPONENTS ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #189 & #338 for additional information.

The air brake application valve shall be a Bendix-Westinghouse E-10 treadle type. The rear brake relay valves shall be Bendix-Westinghouse R-14's and the front brake relay valve shall be a Bendix-Westinghouse R-12. The bus manufacturer shall specify details of the brake controls.

Brake actuator chambers shall be piston type MGM with E-Stroke brake monitoring system, or approved equal. The front actuator size shall be twenty (20") sq. inches. The rear service brake actuator size shall be a minimum thirty (30") sq. inches. The spring brake chambers shall also be a minimum of thirty (30") sq. inches. Slack adjusters shall be Haldex, or approved equal, automatic adjusting slack adjusters.

Brake stroke of each brake actuator shall be monitored electronically inside the actuator. Excessive stroke or failure to fully retract of any brake actuator shall cause a "Brake Fault" light on the diagnostic indicator lamp panel to illuminate.

Setting of the parking brake shall be signaled by illumination of the "Brake" light on the diagnostic indicator lamp panel. Illumination of the light shall confirm proper movement of both brake actuators, not just movement of the control. Similarly the lamp shall remain illuminated until the parking brake actuators are fully retracted after the control to release the parking brake is actuated.

6.105 SUSPENSION ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #190, #339, #340, #468, #469 & #470 for additional information.

Bus shall be equipped with an air-suspension system. Air suspension system shall consist of four (4) rear and two (2) front air springs and three (3) leveling valves as manufactured by Barksdale, or approved equal, by which the air pressure is automatically regulated in proportion to the bus loading.

The air springs or bellows shall have a nominal working height of eleven and one-half (11½") inches. Air bellows shall be Firestone, or approved equal, twelve and one-half (12½") inch diameter and are to be fabricated from two (2) ply weather resistant natural rubber reinforced with nylon tire-grade fabric. Metal parts of the bellows shall be cadmium plated with zinc chromate sealer to prevent corrosion. Bellows shall be mounted to provide easy replacement under the bus.

The suspension system shall include one (1) front and two (2)) rear height control valves by which air pressure is automatically regulated to the bellows in proportion to bus load.

The shock absorbers shall be dual action, telescoping type, heavy duty KONI Shocks, or approved equal.

Radius and lateral rods shall be used to control torsional, lateral and pitching movements.

Radius and lateral rod bushings shall be rubber and be of the replaceable type.

The bus manufacturer shall provide a description of the major suspension components and source of manufacture.

No parts may be used which are not in conformance with Federal and applicable State safety standards.

6.106 FRONT AXLE ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #341, #470, #471, & #472 for additional information.

The front axle shall be a MAN V8-65L with GAWR of 14,770 lbs. (one [1] piece) type that is adequate for the bus loaded G.V.W.R., or approved equal. The front axle shall be hub mounting type equipped with grease type front wheel bearings and seals.

Adjustable stop screws at each axle center end shall be provided to adjust bus minimum turn angle and prevent tire interference with adjacent parts.

6.107 REAR AXLE ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #191, #192 & #341 for additional information.

The rear axle shall be a MAN 5.33:1, HP-1352-B with GAWR of 28,660 lbs., or approved equal. The rear axle shall be hub mounting type equipped with oil type wheel bearings and seals.

The differential gear ratio combined with specified electronic engine controls and transmission shall provide for a maximum highway speed of 65 MPH and a minimum highway speed of 60 MPH on level ground, and a minimum of 10 MPH on a twenty-two (22%) percent grade. Acceleration shall meet the requirements below and shall be sufficiently gradual and smooth to prevent throwing standing passengers off balance. Acceleration measurement shall commence when accelerator pedal is depressed from an idle start:

SPEED (mph)	TIME (sec.)
10 mph:	5.6
20 mph:	11.0
30 mph:	20.0
40 mph:	31.0

The differential assembly, drive pinion and pinion cage shall be mounted in a differential carrier which can be removed as a complete unit from the axle housing. The rear axle spindle tubes shall be pressed into the housing.

Shot-peened differential ring and pinion gears compatible with the retarder equipped transmission.

A drive shaft loop shall be provided to guard bus components and passengers from injury in the event of drive shaft failure.

Drive axles shall be full floating externally splined. Axles are to be compatible with the drive hub.

Rear wheel drive hubs will ride on two (2) opposing tapered roller bearings mounted in the drive hubs.

⑥ → **6.108 ELECTRONIC TRIP RECORDERS**

Each bus shall be equipped with a FLEETWATCH Model JX55 Electronic Data Logger and TX55 Transceiver as manufactured by S & A Systems, Inc., or approved equal. Each JX55 Data Logger shall be suitable for mounting on a transit bus and shall be connected directly to a J1708 communication link and mounted in driver's area. Bus-mounted data recorders shall be programmed to provide the following data:

1. Vehicle Number
2. Vehicle Total Mileage
3. Vehicle Total Engine Hours

Programming software and hardware shall be provided to allow MTS personnel to program, or re-program, the bus-mounted recorder units at any time with bus number and codes for defining the set data to be recorded and reported. Bus-mounted data recorders provided shall include a minimum one (1) year warranty on all parts, including batteries if applicable. Bus-mounted data recorders shall be connected to Transceiver, which shall be programmed to respond to a beacon signal sent from a Wayside Receiver Unit or a portable hand-held unit and upon receipt of such beacon signal shall transmit via radio frequency and transfer data, including but not limited to, vehicle number, vehicle total mileage, and vehicle total engine hours to the Wayside Receiver Unit.

6.109 POWER STEERING ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #316, #341, #342, #343, #344, #346, #474, #476, #477, #478 & #519 for additional information.

Fatigue life of all steering components will exceed 250,000 miles. No element of the steering system will fail before suspension system components when one (1) of the tires strikes a severe road hazard. Inadvertent alterations of steering as a result of striking road hazards are steering failures.

The turning radius will not exceed forty-four (44') feet at seated load weights.

The tilt steering wheel will not be less than twenty (20") inches in diameter and will be shaped for firm grip with comfort for long periods of time and be non-padded. The steering column will be equipped with a telescopic adjustment of three (3") inches to allow the driver to adjust the location of steering for maximum comfort. The steering column will tilt forward and backward six (6") inches for driver's comfort.

Hydraulically-assisted power steering will be provided. The steering gear will be an integral type of American manufacture with rigid stainless steel lines. Steering gear shall be Sheppard M110 gear ratio 23:1, or approved equal, and shall be frame mounted and provide easy access for all adjustments.

An engine mounted, vane type hydraulic fluid pump, Luk or approved equal shall supply hydraulic pressure for the power steering system. A separate gear driven hydraulic pump shall be used to run the cooling system fan motor. This system is to use a one hundred eighty-five (185°) degrees F fan switch to control the operation of the fan motor "soft start" (switching) valve. The system is to be designed so that the lack of electrical power shall cause the fan to run at full speed, except in the case of fire.

The hydraulic system shall use Dexron III type hydraulic fluid. A hydraulic reservoir shall be provided with a filter, one sightglass and a dipstick. The reservoir shall be mounted in such a way as to provide easy service access and shall be accessible from the engine compartment door.

A stacked hydraulic system oil cooler shall also be provided, mounted outboard of the main engine radiator or be an integral part of the radiator/cooling system package.

6.110 WHEELS

Wheels shall be tubeless, Alcoa, part number 885553DB, or approved equal, aluminum forged disc, hub-piloted ten (10) stud type, with a Dura-Bright® polished finish on both sides. Wheel size shall be 22.5" x 8.25". One (1) spare wheel shall be furnished for each bus.

6.111 TIRES ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #479 for additional information.

Tires shall be Michelin, or approved equal, 305 - 70R x 22.5". One (1) spare tire shall be furnished for each bus.

ELECTRICAL

6.112 ELECTRICAL ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #5, #193, #347, #348, #349, #480, #481 & #482 for additional information.

The bus electrical system shall incorporate a Vansco, or approved equal, Programmable Logic Controller (PLC) processor, a multiplex wiring system suitable for controlling most vehicle functions with the exception of the engine, transmission, destination signs, seating and air conditioning. Limited numbers of high circuits or special circuits may be controlled directly but these shall be subject to approval by MTS. This system design should significantly reduce electrical components such as wiring, circuit breakers, relays, rectifiers and terminal blocks.

All electrical parts shall be accessible from the interior of the bus only and shall be protected to avoid splash from floor washing, etc.

Troubleshooting shall be accomplished by use of input/output lights permanently mounted at the PLC components. Examination of the ladder logic shall be done with a standard IBM compatible laptop computer and shall be password protected to prevent unauthorized tampering. To prevent unauthorized modifications to the system, the use of electrically programmable PROM's will not be allowed. Forcing of electronic functions shall be possible but the bus cannot be shifted out of neutral if force is enabled or on.

PLC support shall be available within a fifty (50) mile radius of the Authority providing exchange parts, new parts and technical support.

Necessary software and interface connection shall be provided for onboard trouble shooting. Two (2) sets for every twenty-five (25) buses.

The type of Logic Controller, devices and system shall be submitted for approval prior to the bid.

6.113 WIRING ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #194 for additional information.

All general purpose wiring to be cross linked polyethylene insulated, color coded over its entire length, numbered for positive identification and meet the SAE Recommended Practice #J1128, Type SXL. Grommets or other approved material will be provided where wiring penetrates a metal structure.

Engine compartment wiring shall be stranded copper wire hi-temp insulation covered with single layer cross-linked polyethylene insulation (SCL), and shall be contained within hi- temp corrugated plastic looms.

All electrical/electronic hardware and its mounting shall comply with the shock and vibration requirements of SAE J1455.

6.114 BATTERY CABLES

Battery cables will be a minimum of 4/0 A.W.G. and meet SAE Recommended Practice J1127, Type SGR. Terminals to be ⅜" & ⅝". Battery cables shall be supported in a way that does not allow cables to rest on tops of batteries while in the stowed position.

6.115 JUNCTION PANELS

The main wiring harness(es) will be installed in sections terminating at appropriate junction panels. Junction panels to be constructed of Bakelite type material, terminal posts to be numbered and easily accessible from the interior or exterior of bus. A minimum ten (10%) percent of spare wires will be provided per harness. All main wiring harness(es) will be insulated and concealed within the body structure.

6.116 TERMINALS

All terminals will be of the closed barrel type, insulated and crimped to the manufacturer's specifications. In addition, all power cable terminals will be soldered. The use of "T-TAP" connectors is unacceptable.

6.117 CIRCUIT BREAKERS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #195 for additional information.

Manual reset circuit breakers shall be used. The use of in-line fuses will be kept to a minimum. A circuit protector, fusible link or other suitable device shall be installed to protect 4/0 cable from a short to ground between batteries, starter, and alternator.

6.118 ELECTRICAL PANELS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #196 for additional information.

Two (2) main electrical panels shall be provided and conform to the following:

A wiring diagram shall be located on the doors of each electrical panel.

6.119 MAIN ELECTRICAL PANEL

The main electrical panels shall be located near the driver's compartment and the rear interior of bus and must be accessible from either the interior or exterior of bus. The panels will be constructed to allow easy access and be as water and dust proof as possible.

A power inverter shall be installed in each vehicle, which is capable of supplying a 110 VAC 60 Hz circuit protected power supply at 20 Amps. The 110 VAC outlet shall be located within the side console and shall be energized anytime ignition is in the on position, whether engine is running or not.

6.120 REAR ENGINE CONTROL PANEL ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #197, #350, #351 & #352 for additional information.

A rear run control panel shall be provided in the engine compartment and be constructed to be as water and dust proof as possible. In addition, the following will be provided:

1. Rear start switch labeled: "Start," "Front - Off - Rear"
2. Engine compartment light switch labeled: "Lights," "On - Off"
3. Engine run switch labeled: "Run," "Front - Off - Rear"

Engine Compartment Gauges - An engine oil pressure and engine water temperature gauge shall be mounted in the engine compartment so that they are easily viewed when the rear compartment door is open. The oil pressure gauge shall indicate oil pressure at a main pressure oil galley. The water temperature shall indicate engine block water temperature on the engine side of the thermostats. Gauges shall be of the mechanical type with minimum two (2") inch face and shall not utilize sending units. Oil pressure gauge shall be clearly marked in 5 psi-lb. increments. Water temperature gauge shall utilize a tell-tale indicator. Rear switches and gauges will be mounted in an enclosed water proof/dust proof box. Location to be approved by MTS. The engine compartment lights shall be capable of being turned on/off regardless of the front master switch position.

6.121 CAPACITY

All switches, relays, circuit breakers or other load carrying devices shall be of sufficient capacity to carry the required current load imposed with an ample margin of safety, and shall be labeled and located within electrical panels.

INTERIOR AND EXTERIOR LIGHTING

6.122 EXTERIOR LIGHTING ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #198 for additional information.

Exterior lighting and reflectors will meet all applicable State and Federal Requirements. (stick-on reflectors are not acceptable). All lamps shall be replaceable in five (5) minutes or less and shall be equipped with water tight sealed connectors.

6.123 HEADLAMPS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #354 & #483 for additional information.

Two (2) dual head lamps will be provided. Head lamps to be activated from the Master Control Switch and a sealed foot operated switch shall be provided to control high and low beam operation. A high beam indicator shall be provided on driver's dash panel.

6.124 STOP/TAIL/TURN LAMPS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #199, #355 & #356 for additional information.

Tail lamps shall be mounted on the engine closure door or rear end panels, so as not to be affected by engine exhaust heat. Each side shall include two (2) combination red stop/tail light assemblies, an amber turn signal assembly, and a white back-up light assembly in a red, red, amber, white configuration from top to bottom. A third centered pair of high mounted stop lights shall be provided and installed. All rear directional, stop/tail, and back-up lights shall be flush mounted four (4") inch Dialight LED lamp assemblies, or approved equal.

Lamp lens shall not protrude from body more than one-half (½") inch. Final layout is subject to review and approval by MTS.

Side amber turn signals with guards, two (2) per side Dialight LED, or approved equal, shall be provided. Lamps shall be forward of all wheelhouses except curbside front, which shall be aft.

All lamps shall be L.E.D. type light.

If stop and tail lamps will not be visible from the rear when rear engine door is in it's up position, two stop, turn, tail and hazard lights, Dialight model 46121RB, or approved equal, shall be installed, one (1) on each side of engine compartment.

Heavy-duty, sealed type, foot operated turn signal switches shall be furnished. They shall be mounted on a pedestal and angled toward driver in a configuration approved by the MTS.

No audible reminder shall be provided to alert the driver that the flasher is activated.

6.125 BACK-UP LIGHTS AND ALARM ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #357, #358 & #485 for additional information.

Two (2) back-up lights, Dialight model 46121CB, or approved equal, one (1) mounted on each side of engine closure door or rear end panels shall be provided. One (1) intermittent audible alarm (ECCOSA950), or approved equal, shall be provided at the rear of bus.

⑥ → **6.126 CURB LIGHTS** ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #359 & #485 for additional information.

The vehicle doorways, including doorways with lifts, shall have outside raised Luminator LED lights, or approved equal, which when the door is open, provide at least one (1') foot candle of illumination on the street surface for a distance of three (3') feet perpendicular to all points on the bottom steptread outer edge. Such light(s) shall be located below window level and be shielded to protect the eyes of entering and exiting passengers from glare.

⑥ → **6.127 INTERIOR LIGHTS** ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #359, #361, #486 & #487 for additional information.

The interior lighting system shall be Transmatic L20, with Advance Design Ballasts (ADB), or approved equal, and will conform to the following requirements:

A. The lighting system will run the entire length of bus, starting behind standee line to rear seat area.

B. Each fluorescent tube will be supplied with an individual ADB unit.

C. The forward-most lamp, one (1) each per side, will extinguish with the front doors closed and shall be Dialight VSL-CC-48C55, or approved equal, LED Strip Lighting in lieu of fluorescent tubes. The second and third fluorescent lamps on each side will be encased in a re-usable blue poly-carbonate sleeve.

D. An interior light switch will be provided to allow illumination when the "MASTER CONTROL SWITCH" is in the "OFF" position and allow the interior lights to be extinguished when the "MASTER CONTROL SWITCH" is in the "NIGHT" position.

E. A PLC adjustable timer shall allow fifteen (15) minutes of illumination after the bus is shutdown (Master switch in Off or Park position).

F. Light fixtures will be constructed to allow for easy tube or ballast replacement and accommodate eleven (11") inch advertising signs.

G. Destination sign light (if equipped) will come on with Master Switch.

H. Interior lights shall extinguish when the transmission is placed in reverse. This will aid the driver in backing the bus.

I. The floor surface in the aisles shall have a minimum of ten (10') foot candles of illumination, vestibule area a minimum of four (4') foot candles when the front door is open and a minimum of two (2') foot candles with door closed, measured on the step tread or ramp platform.

J. Rear exit area and doorway shall have at least four (4') foot candles of illumination with rear doors open and at least two (2') foot candles of illumination measured on the step tread with doors closed.

K. Door header lights shall be Dialight 17081CB, or approved equal, two (2) per doorway.

L. Step lighting for the intermediate platform between lower and upper floor levels shall be provided and shall illuminate in all engine run positions. All step well lights shall be low-profile LED and shall be shielded as necessary to protect passengers' eyes from glare.

M. The front entrance area and curb lights shall illuminate with front door open and master run switch in night run or park position. Circuit shall be activated by the use of an air pressure switch and shall not incorporate the use of position sensing micro switches. The rear stepwell lights shall be on when the master switch is in the night run or park position. Rear exit area and curb lights shall illuminate when rear door is unlocked/open.

6.128 "STOP REQUESTED" PASSENGER SIGNAL

A "Stop Requested" passenger signal system shall be provided. A "Stop Request" indicator shall be provided on dash panel in plain view for operator visibility at all times. A ceiling mounted "Stop Requested" sign shall be installed approximately above standee line. When a passenger pulls the cord, a chime will sound, the ceiling mounted "Stop Request" sign and dash indicator will illuminate. The chime will sound once and the sign and dash lights will remain illuminated until after the front or rear doors open or a cancel switch is activated. Vertical pull cords will be provided for the handicapped area located by the front forward facing seats. Tape switches are acceptable for handicap location under longitudinal flip-up seats. A separate dash indicator light will be activated when a mobility aid user wishes to disembark and the chime will sound twice. All pull-cords and tape switches shall be bright yellow in color.

6.129 HORNS

Dual electric horns with splash shields shall be provided with horns turned facing down to preclude the collection of water.

6.130 DRIVER'S CONTROL AND INSTRUMENT PANEL ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #200, #201, #202, #362, #363, #364, #365, #366, #367, #368, #369, #370, #371, #372 & #488 for additional information.

The Driver's Control and Instrument Panel shall include, but not be limited to, the following requirements:

1. Four (4) position Master Control Switch OFF, Day-Run, Night-Run, Night Park.
2. Engine start button with dust cover.
3. Instrument and dash-lights (rheostat controlled).
4. Interior light switch.
5. Three (3) position defroster switch, Hi-Lo-Off.
6. HVAC control switch, Auto-Off-Vent.
7. Emergency Parking brake release, properly marked with a metal label riveted by the control valve.
8. Emergency flasher switch.
9. Test switch for dash indicator lights.
10. Dual air pressure gauge(s) with light.
11. Voltmeter two (2") inches with light.
12. Engine temperature gauge with light.
13. Electronic speedometer, with odometer and light.

14. Passenger signal On-Off switch.

15. Stop Request cancel switch.

16. Wheelchair ramp Control.

17. Kneel Switch.

18. Fast Idle Switch.

19. Engine and Transmission test socket.

20. Bulb outage test switch for exterior lighting (i.e. Head Lamps, Marker, Clearance, Turn signals, Stop lamp, Tail lamp, Back-up lamps & Alarm.

21. Parking brake application valve, properly marked with a metal label riveted by the control valve "Pull to set, Push to release".

22. Floor mounted headlight, high/low beam foot switch.

23. Floor mounted turn signal foot switches.

24. Electronic Throttle Foot Pedal.

25. Floor mounted P.A. mic switch.

26. Brake Pedal.

27. Transmission Shift Selector.

28. Emergency radio alarm switch (silent alarm), Allen Bradley with two sets of contacts, one N/O and one N/C.

29. Waste basket (floor).

30. Eight (8) pocket Plexiglas Schedule Rack. (Integrated into driver barrier)

31. Dash route/fare Card holder.

32. Driver shall be provided with a reading lamp with toggle switch on side console.

33. Low Fuel Indicator Light.

34. SpeakEasy II controls.

6.131 DRIVER AUDIBLE WARNING ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #203, #204, #205, #367, #373 & #374 for additional information.

An audible warning and light system will be provided for the driver that conforms to the following requirements:

		BUZZER	DASH INDICATOR	
a.	Low Air (below 80 psi):	(Yes)	Red	(Yes)
b.	Low Oil Pressure:	(Yes)	Red	(Yes)
c.	Engine Temperature:	(Yes)	Red	(Yes)
d.	Transmission:	(Yes)	Red	(Yes)
e.	A/C Off	(No)	Red	(Yes)
f.	Directional Signals:	(No)	Green with Arrow	(Yes)
g.	Stop Light:	(No)	Red	(Yes)
h.	Next Stop:	(Yes)	Red	(Yes)
i.	E/H Next Stop:	(Yes)	Red	(Yes)
j.	High Beam:	(No)	Blue	(Yes)
k.	No Charge:	(Yes)	Red	(Yes)
l.	Rear Door:	(No)	Red	(Yes)
m.	Kneel:	(No)	Red	(Yes)
n.	Low Fuel Light:	(Yes)	Red	(Yes)

A test switch shall be provided which allows all indicator lights to be tested at once. Visibility of all dash indicators shall not be obscured by steering wheel.

6.132 GENERATOR ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #489, #490 & #491 for additional information.

A Leece-Neville Model VLF3278-002, or approved equal, 28 volt belt driven, 300 ampere (Maximum rated output) brushless DC generator shall be provided. The generator to be driven at 2.75 times engine speed. Solid state rectifiers shall be used to convert AC to DC. A circuit protector, fusible link or other suitable device shall be installed to protect 4/0 cable from a short to ground between batteries and alternator.

6.133 VOLTAGE REGULATOR ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #485 for additional information.

A solid state Leece-Neville voltage regulator shall be installed in a location and manner to minimize adverse effects of temperature extremes. The regulator shall be an adjustable variable setting-type.

6.134 BATTERIES ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #207, #376, #379 & #492 for additional information.

Two (2) Ramcar C-A8D12T, or approved equal, heavy duty 8-D end mount batteries with permanent factory burned bus type terminals shall be provided. A heavy duty battery disconnect switch and a battery cut-out relay shall be provided. A minimum 80amp "Vanner," or approved equal, voltage equalizer will be installed outside the battery compartment in a location that is as dust proof and water proof as possible and easily accessible. There will be no switches, circuit breakers or other electrical components mounted in the same compartment as the batteries. The sliding tray assembly shall be made of stainless steel with a removable fiberglass liner. Provisions shall be made so that battery cables do not rest on batteries while battery tray is in the stowed position.

6.135 KNEEL SYSTEM ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #208 & #380 for additional information.

A "kneel" system will be provided on each bus meeting the following requirements:

- Bus will kneel whenever bus ramp is activated.
- With the front doors open, transmission in neutral gear, bus operator will lower the front of bus with activation of a dash mounted momentary "kneel" switch (Lower).
- An audible alarm will sound, a warning light visible from the front curbside of bus will flash and a driver's indicator will light during the entire operation of "kneel" functions.
- The brake and accelerator interlocks will activate during the entire operation of "kneel" functions.
- Normal driving conditions will be resumed after momentary activation of "kneel" switch (raise) and bus reaches normal driving height.
- The "lower" and "raise" heights will be preset and be achieved automatically after activation of desired functions and require a maximum of ten (:10) seconds to complete each function.
- A guarded override switch momentary switch will be provided, designed so that the brake and accelerator interlocks can be de-activated by the bus operator to allow movement of bus in case of emergency.
- An indicator visible to the driver shall be illuminated until the bus is raised to a height adequate for safe street travel.

ANCILLARY EQUIPMENT SPECIFICATIONS

6.136 BIKE RACKS ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #381& #485 for additional information.

Manufacturer shall provide a two position bicycle rack as manufactured by Byk-Rak, or approved equal, stainless steel front mounted transit bike rack with heavy-duty quick disconnect type mounting bracket, which is integral with front bumper. Contractor and MTS to mutually agree on location and mounting (Positioning is not to interfere with the front license plate).

6.137 ANCILLARY EQUIPMENT SPECIFICATIONS - PUBLIC ADDRESS SYSTEM ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #209, #210, #211, #382, #383, #384 & #385 for additional information.

A Public Address System will be provided on each bus meeting the following requirements:

a. One (1) amplifier, microphone, control unit combination - Clever Devices, SpeakEasy II, or approved equal, mounted to the street-side A-pillar.

b. Six (6) speakers -10 watt, 8 ohm rating.

c. Speakeasy II unit shall be located at the roadside "A" post. Control shall be provided by a foot control switch mounted on the floor. Mounting location and arrangement of the microphone and floor switch shall be approved by MTS.

d. One (1) external speaker-REI, or approved equal, to be mounted above front door area.

e. Interior/Exterior speaker selection switch shall be mounted on instrument panel. Switch shall be a three (3) position toggle switch to provide interior/exterior/both operation of the speakers. Location shall be approved by MTS.

f. Power switch shall be mounted on instrument panel. Switch shall be a two (2) position toggle switch to provide on-off operation of the amplifier. Location shall be approved by MTS.

g. One (1) auxiliary microphone jack shall be provided on rear side of the operator's barrier. Also, one (1) auxiliary microphone, Shure #507B, or approved equal, with six (6') foot extension cord shall be provided at the rate of one for every ten (10) buses.

6.138 DESTINATION SIGN

A Luminator® Horizon all LED Destination Display System, or approved equal, shall be furnished and installed in the Bus. The System shall consist of:

⑥ → **6.139 DISPLAY SIGNS** ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #495 for additional information.

- Front Sign: 24 x 200 Titan GEN 4: Amber
- Side Sign: 14 x 112: Amber
- Rear Sign: 16 x 48: Amber
- Operator Display and Keyboard (ODK)
- Cables and Accessories

The Front Sign shall be mounted on the front of the bus, near the top edge of the body, behind windshield protection, and in an enclosed but accessible compartment provided by the bus manufacturer. The destination sign glass, if larger than actual sign, shall be blacked-out around edges eliminating the need for shrouding around sign and thus blocking unsightly wiring within the destination sign compartment from exterior view only amber color LED's shall be used in the front sign.

The Side Sign shall be located on the right side of the bus near the front door either mounted near the top of an existing window or in a separate enclosed but accessible weather-proof compartment provided by the bus manufacturer.

The Rear Sign shall be mounted on the rear of the bus near the right side of the upper roof line or rear center of the vehicle.

The entire display area of all signs shall utilize high-intensity LED displays that provide clear readability in direct sunlight, at night, and in all lighting conditions between those two (2) lighting extremes, with evenly distributed illumination appearance to the un-aided eye.

The system shall be microprocessor-based utilizing approved bi-directional serial communications between system components compatible with SAE J-1708, RS232 and RS485 protocols.

The system shall be capable of communicating with, and/or controlling additional information devices, such as interior information Signs, Voice Annunciation devices, farebox, etc. The system shall provide for destination and/or Public Relations (P/R) message entry.

Message memory shall be changeable by the use of a MTU and/or PCMCIA Card of not less than one (1) megabyte memory capacity but sized according to the message listing noted herein.

The System shall have the ability to sequentially display multi-line destination messages, with the route number portion remaining in a constant "on" mode at all times, if so programmed.

The various signs shall be programmable to display independent messages or the same messages; up to two (2) destination messages and one public relations message shall be pre-selectable. The operator shall be able to quickly change between the pre-selected messages without re-entering a message code. Public relations messages shall be capable of being displayed alternately with the regular text and route messages or displayed separately.

System shall be capable of displaying an emergency message when activated by a push button or toggle switch in a location to be approved by MTS. The emergency message shall be displayed on signs facing outside the vehicle while signs inside the vehicle, including the ODK display, remain unchanged. The emergency message shall be canceled by entering a new destination code, or power cycling (after removal of the emergency signal).

The programming software shall provide means of adjusting the length of time messages are displayed in point one (:01) second increments up to twenty-five (:25) seconds.

Power to the sign system shall be controlled by the Bus Master Run Switch. The signs shall operate in all positions of this switch except off. The signs shall be internally protected against voltage transients and RFI interference to ensure proper operation in the local environment.

The characters formed by the system shall meet the requirements of the Americans with Disabilities Act (ADA) of 1990 Reference 49 C.F.R. Section 38.39.

6.140 SIGN ENCLOSURES

All signs shall be enclosed in a manner such as to inhibit entry of dirt, dust, water and other contaminants during normal operation or cleaning. Access shall be provided to clean the inside of the bus window(s) associated with the sign and to remove or replace the sign components. Access panels and display boards shall be mounted for ease of maintenance/replacement. Any exterior rear sign enclosure used shall be made of Polycarbonate material containing fiberglass reinforcement. The vehicle manufacturer shall comply with the sign manufacturer's recommended mounting, mounting configuration, and installation procedures to assure optimum visibility and service accessibility of the sign system and system components.

6.141 ELECTRONIC SYSTEMS REQUIREMENTS

All electronic circuit boards used in the Sign System shall be conformal coated to meet the requirements of military specification MIL-I-46058C. All Sign System components shall be certified to have been subjected to a "burn-in" test of a minimum of twelve (12) hours operation in a temperature of one hundred fifty (150°) degrees F prior to final inspection.

6.142 FRONT SIGN

The Front Sign message shall be readable by a person with 20/20 vision from a distance not less than three hundred fifty (350') feet for signs of display height greater than eight (8") inches and from a distance not less than two hundred seventy-five (275') feet for display heights less than eight (8") inches. The Front Sign shall have a viewing cone of equal readability at sixty-five (65°) degrees on either side of a line perpendicular to the center of the mean plane of the display. The intensity of the illumination of the display pixels shall appear, to the naked eye, to be approximately uniform throughout the full viewing cone.

6.143 SIDE SIGN

The Side Sign message shall be readable by a person with 20/20 vision, from a distance of not less than two hundred seventy-five (275') feet. The Side Sign shall have a viewing cone of equal readability at sixty-five (65°) degrees on either side of a line perpendicular to the center of the mean plane of the display. The intensity of the illumination of the display pixels shall appear, to the naked eye, to be approximately uniform throughout the full viewing cone.

6.144 READ DESTINATION SIGN

The Rear Sign shall be capable of independently displaying alpha-numeric characters. The message shall be readable by a person with 20/20 vision, from a distance of not less than two hundred twenty-five (225') feet. The Rear Sign shall have a viewing cone of equal readability at sixty-five (65°) degrees on either side of a line perpendicular to the center of the mean plane of the display. The intensity of the illumination of the display pixels shall appear, to the naked eye, to be approximately uniform throughout the full viewing cone.

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #387 & #485 for additional information.

6.145 OPERATOR DISPLAY AND KEYBOARD (ODK) ←

The ODK Unit shall be used to view and update display messages. It shall be recess mounted on the bus vehicle front sign compartment access cover or door. The ODK shall utilize a multi-key conductive rubber pad keyboard and be designed for transit operating conditions.

The ODK Unit shall contain a display of at least two (2) lines of twenty (20) character capability. The ODK Unit shall contain an audio enunciator that beeps to alert the operator to view the display for a message, or beeps indicating that a key is depressed. The ODK Unit shall continuously display the message associated with the selected destination readings (except the emergency message feature as noted above).

6.146 PROGRAMMING

A Windows® based programming software package shall be supplied including laptop, under limited-use license, to generate message lists for the sign system.

The program shall be designed for ease of deleting and adding messages to a destination sign list in a Windows® Operating Environment.

The programming software shall be intuitive, of design to facilitate ease of training, and use context-sensitive help features. Reasonable on-site training support shall be provided with the software.

This software will provide capability for custom message writing by selection of preprogrammed standard variable width fonts; by creation of a custom font; by varying spacing between characters, words, or other message elements; by allowing creation of graphic displays, with or without text; by selecting preprogrammed graphic sign images; and by allowing use of multiple fonts within the same message and graphic symbols placed anywhere within the display area.

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #496 for additional information.

6.147 MESSAGE MEMORY TRANSFER AND UPDATE ←

The sign system shall be re-programmable on the bus vehicle with the use of a PCMCIA Card and/or MTU. A PCMCIA Card slot shall be provided on the ODK face for this purpose. The maximum reprogramming time for a 10,000 line listing shall be one minute. PCMCIA Cards, of appropriate memory capacity based on requirements of the message listing noted below (but not less than 1 Megabyte) shall be supplied at the rate of four (4) cards for each fifty (50) systems, or fraction thereof, but in any event not less than four (4) such PCMCIA Cards shall be supplied. MTU connection shall be accessible from the outside of the front destination sign access door via a connector on access door.

6.148 MESSAGE LISTING

Upon receipt of the contract/purchase order the vehicle manufacturer shall supply to the sign manufacturer, within fourteen (14) days, a list of the message readings or listings such as to allow the Sign System to be preprogrammed with the correct readings for MTS revenue service operations.

6.149 FAREBOX SYSTEM ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #520 for additional information.

Fareboxes are not required for this order. A Farebox ground strap to bus chassis shall be provided. Provisions shall be made to enable mounting of Fareboxes directly to the floor of the vehicle rather than on a raised pedestal. Mounting shall be reinforced to limit movement of farebox, i.e., vibration, shaking, etc. A raised step assembly shall be constructed to fit around base of Farebox with a rubber shroud designed and installed to fill the gap between step and Farebox. Photos of an MTS installation shall be provided to assist in the design of the step assembly.

6.150 RADIOS ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #371 & #488 for additional information.

Radios will not be required for this order. Manufacturer shall provide and install radio system provisions as follows: conduits and pull wire for radio antenna, GPS receiver, and LAN antenna leading back to radio equipment box. A conditioned 12 volt/30 Amp power supply and chassis ground shall be provided in radio equipment box. Mechanical alarm interface shall also be provided and installed by manufacturer during vehicle assembly. Mechanical alarm interface connector shall terminate at a DB25 connector in radio equipment box. An Allen Bradley silent alarm switch shall also be provided and installed. Details of radio provisions shall be provided at pre-production meeting.

6.151 AUTOMATIC PASSENGER COUNTER (APC) ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #498 for additional information.

Each vehicle shall be equipped with on-board APC equipment which shall ultimately be interfaced with the Orbital/Motorola RTMS Radio/CAD/AVL System currently utilized on MTS buses. The APC equipment shall include all sensors, wiring, cabling, and installation required to enable interfacing with the existing RTMS to allow the passenger count to be correctly associated with the GPS-based location, block, bus stops, and date and time. The sensors to detect passenger boarding and de-boarding shall not use step-treadle technology, but shall use infrared or other similar sensors that have a high level of reliability and are easily serviced. The sensors shall have a demonstrated accuracy of ninety-five (95%) percent or better.

Collected data shall be processed prior to permanent storage in order to ensure that the collected data is at least ninety-five (95%) percent accurate and that it is statistically valid. This processing shall include removal of clearly erroneous data, such as may occur from sensor failures. Processing shall also remove data for buses that would otherwise improperly affect statistical results for monitored bus routes due to temporary and unanticipated changes to the operation of buses on those routes. Changes of this type to be detected shall include, but not be limited to, significant off-route operation, significant off-schedule operation, breakdowns, and unscheduled turn-backs. Parameters for determining various filtering thresholds required by the processing shall be definable by System Management users.

6.152 WHEELCHAIR RAMP ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #391 & #485 for additional information.

⑥ →

A Ricon Corp. Foldover Model FR3048, or approved equal, low floor automatically-controlled, power operated wheelchair ramp system is required. The ramp shall be designed for use to provide ingress and egress quickly, safely and comfortably, both in forward and rearward directions, for a passenger in a wheelchair from a level street, curb, or raised platform stops. The wheelchair ramp must be able to be manually deployed in thirty (:30) seconds or less in the event the automation should fail. Ramp shall be compliant to requirements defined in 49 C.F.R. Part 38, Subpart B 38.23c.

The wheelchair loading system shall be located at the front door. The ramp shall be of a simple fold over type design, rotary actuated and hydraulically-powered. The wheelchair ramp assembly shall be mounted to the bus structure separate from the front bumper to eliminate damages to the ramp assembly when the bumper may sustain minor damages in a low speed collision. The ramp shall be fully self-contained and shall not be operated from an external pump, actuator or cam mechanism.

When the system is not in use, the passageway shall appear normal. In the stored position of the ramp, no tripping hazards shall be present and any resulting gaps shall be minimized. The controls shall be simple to operate with no complex phasing operations required, and the loading system shall be under surveillance and complete control of the operator. The bus shall be prevented from moving during the loading or unloading cycle by a throttle and brake interlock system. The wheelchair loading system shall not present a hazard, nor inconvenience any passenger. The loading system shall be inhibited from retracting or folding when a passenger is on the ramp/platform. A passenger departing or boarding via the ramp shall be able to easily obtain support by grasping the passenger assist located on the doors or other assists provided for this purpose. The platform shall be designed to protect the ramp from damage and persons on the sidewalk from injury during the extension/retraction or lowering/raising phases of operation. The loading platform shall be covered with replaceable or renewable, nonskid material and shall be fitted with devices to prevent the wheelchair from rolling off the sides during loading or unloading. Deployment or storage of the ramp shall require no more than fifteen (:15) seconds. The device shall function without failure or adjustment for 500 cycles or 5,000 miles in all weather conditions on the design operating profile when activated once during the idle phase. A manual override system shall permit unloading a wheelchair and storing the device in the event of a primary power failure. The ramp assembly shall be replaceable within thirty (30) minutes by a 3M mechanic.

6.153 WHEELCHAIR RESTRAINT ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #300 for additional information.

The wheelchair restraint system shall be ADA approved and accommodate a range of wheelchairs commonly available to handicapped persons and shall not require any manual adjustments to meet this requirement. The restraint system shall be an Advanced Restraint Module (the A.R.M. telescoping arm model) from American seating, or approved equal. The automatic locking mechanism of the restraint shall not be capable of being engaged unless the wheelchair is properly aligned in the restraint. The locking mechanism of restraint when being engaged or disengaged shall not be capable of harming the disabled person. When secured by the restraint, the wheelchair shall be prevented from side slipping, pivotal rotation, forward and backward motion, and overturning due to the motion and maneuvering of the bus. The restraint system shall be designed and manufactured so as to minimize pilferage and/or vandalism. The

restraint system for wheelchairs shall be manufactured by American Seating/Q-Straint, or approved equal. Wheelchair restraint shall be constructed from aluminum and/or rust-resistant steel.

The wheelchair restraint system shall be warranted against operational problems resulting from manufacturing and/or design defects. Each restraint unit shall be serialized for warranty tracking purpose.

⑥ → **6.154 DIGITAL RECORDING EQUIPMENT – SECURITY CAMERA SYSTEM**

Buses shall be equipped with an On-Board Video Surveillance System (OBVSS). The system shall be a digital system that records to a removable hard drive. Each system shall be comprised of 7 color cameras, a digital video recorder, and all necessary cable and hardware to permanently secure all the components. The OBVSS shall have a warranty (non-prorated) on the entire system for a period of not less than 1 year. All systems must be "state of the art" new equipment. The recording equipment shall be durable and designed specifically for transit bus installation. Video shall be recorded to an adequately sized removable hard drive unit(s). The removable unit shall be of modular design with no access to the recording media or internal components and shall be tamper proof. The removable cartridge shall be securely retained in the recording device and shall be locked in place by means of tamper proof lock and key arrangement. Recording unit shall also be enclosed inside of a locked box type container, and securely mounted. All recording unit cartridges and locks shall be interchangeable and "keyed alike" To match current keys in use at MTS. An operator's status indicator light, which shows whether system is functional or not, shall be installed in each vehicle. The status indicator shall be red for any malfunction or green indicating all system functions are operating properly. The system shall include an event-marking feature readily available to the operator, as well as an event marking feature integrated with the vehicle's silent alarm function (Note: the normally open contacts on silent alarm switch are available for this feature). An X, Y, & Z axis impact sensor shall also be utilized as an event marking trigger. All recorded data shall be identified with visible on frame information including, but not limited to, date, time, location and bus number. Continuous loop, uninterrupted recording time shall be not less than 336 hours (14 days) before recording is overwritten. Such recording time shall be minimum 640 x 240 resolution at a minimum 15 fps/camera and shall have the ability to be upgraded to up to ninety (90) days of storage. The system shall be capable of wireless downloading of video and shall have the ability to be viewed in real-time from a remote location up to 200 yards away.

6.155 CAMERAS

Each bus shall be fitted with a seven-color camera system capable of monitoring the entire interior of the bus, exterior front view, exterior rear view, and exterior curbside view. Interior areas of special consideration are the front and rear door and step areas, and the area rear of the rear door. Cameras shall be adjustable on both vertical and horizontal planes, designed to operate in both normal daylight and nighttime lighting conditions, and protected by a tamper proof enclosure. Property shall provide a basic diagram for camera location and direction of view.

6.156 MICROPHONE

Audio shall be required for operator's entrance area. Microphone shall be connected to camera that has view of driver, farebox, and entrance door.

The quality of the audio shall be such that a normal voice conversation between the operator and a passenger in the front entrance area of the bus can be understood with all accessories operating.

6.157 SIGNAGE

Four signs shall be provided and installed on the inside of each bus, two in English and two in Spanish that read:

"NOTICE: THIS VEHICLE IS EQUIPPED WITH A DIGITAL SURVEILLANCE SYSTEM. PASSENGER ACTIVITY MAY BE RECORDED BUT NOT MONITORED"

-And-

"AVISO: ESTE VEHICULO ESTA EQUIPADO CON UN SISTEMA DE VIGILANCIA DIGITAL. LAS ACTIVIDADES DE LOS PASAJEROS PODRIAN SER GRABADAS, PERO NO MONITOREADAS".

One of each of the signs (one English and one Spanish) shall be placed in a conspicuous location in the front portion of the bus, and one of each in a conspicuous location in the rear portion of the bus. The signs shall be approximately four inches (4") high by six inches (6") wide with a glossy finish.

6.158 TRAINING/MANUALS/DOCUMENTATION

Technical and maintenance training (24 hours) shall be provided for all supervising staff and mechanical staff. Maintenance training shall include basic routine maintenance checks and troubleshooting to include camera adjustment, software reconfiguration, recorder replacement, and replacement of any internal batteries if equipped. Manuals as listed below shall be provided in the following quantities:

- Four (4) Operation Instruction manuals
- Four (4) Parts & Service manuals
- Four (4) Software manuals

The Contractor shall be 100% responsible for technical support for the entire system.

6.159 PLAYBACK STATIONS

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #501 for additional information.

Two (2) separate stations and software shall be provided. At least one (1) of the playback stations shall be of mobile type (i.e., laptop).

A specific product shall be proposed, including complete specifications, as well as all other options available.

6.160 SPARES ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #502 for additional information.

The Contractor shall supply one (1) complete spare system and four (4) spare removable hard drives, and four (4) spare cameras.

6.161 SERVICE

The Contractor shall identify the local service provider who will address warranty, post-warranty service and technical support. The qualifications of that local service provider shall be included as part of the proposal.

6.162 HEATING AND AIR-CONDITIONING ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #504 & #521 for additional information.

A combined heating and air-conditioning system, Carrier, or approved equal, RM Series with the 05G compressor and clutch assembly shall be provided on each bus. System shall include MicroMax microprocessor for climate controls and Micromate Control Panel high visibility display. The bus heating and ventilating systems shall be designed to provide passenger comfort by heating or cooling, dehumidifying and filtering the air which is force circulated within the bus. The system shall be designed to maintain bus interior temperature to a minimum of sixty-five (65°) degrees F with a relative humidity of fifty (50%) percent or less at all locations in the bus under all operating conditions during all climatic conditions. This system shall meet the following minimum requirements:

A. CAPACITY

1) Main heating system-90,000 to 100,000 BTU's/HR and 1,300 CFM's of air (Low Speed).

2) Driver's Heating System-40,000 BTU's/HR and 500 to 600 CFM's of air.

3) Air Conditioning-120,000 BTU/HR and 2,800 CFM of air or nominal 10 tons.

B. COMPONENTS

1) Condenser Motors-General Electrical Brushless field motors/or equivalent.

2) Evaporator Motor-General Electric Brushless motor/or equivalent.

3) Compressor- Carrier O5G belt driven with electro magnetic clutch.

4) Condenser Radiator-Copper tubing with aluminum fins.

5) Evaporator Radiator-Copper tubing with aluminum fins.

6) Expansion Valve-External equalization type.

7) Refrigerant-R-134A.

8) Micromate Control Panel (MCP) high-visibility display.

9) Return air thermostat-Electronic, adjustable from sixty (60°) degrees to ninety (90°) degrees F (return air temperature).

10) Heater Boost Pump-Minimum capacity of 15 G.P.M. to be an EG&G Rotron brushless seal-less magnetic drive, or approved equal.

C. CONSTRUCTION AND MOUNTING

1) The air conditioning/heating system will be an integrated unit mounted in rear of bus. Materials and mounting will be of sufficient quality and construction to withstand road shock and vibration.

2) Push pull cable shall not exceed twenty-four (24") inches length or mounted as close as possible to any water valves or baffles.

D. SAFETY CONTROLS

1). Re-settable circuit breakers on all electrical motors and power cables.

2) Low Freon pressure cut-out.

3) High Freon pressure cut-out.

4) Low compressor oil pump pressure cut-out.

5) Power relay to disable HVAC unit if bus charging system fails.

6.163 OPERATOR'S HEATER AND DEFROSTER ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #213, #393, #505 & #506 for additional information.

A. The operator's heater and defroster system shall be independently controlled with easily moveable cable or electronic control.

B. The defroster shall meet all state and federal requirements.

C. The system shall be located under the dash to provide heat or fresh air for the operator.

D. The system shall also heat the front stepwell and operator's foot area.

E. This system shall be equipped with an auxiliary water pump capable of pumping fifteen (15) gallons of water per minute so as to force hot water to the heater/defroster core. Such a pump shall be located in an easily accessible area and away from road debris and inclement weather. This system shall also provide shut-off valves and manual bleed valves at the pump and core.

F. Such a system shall be able to entirely clear the windshields, operator side window and front door windshields, operator side window and front door glass regardless of weather conditions.

G. The defrost motor shall provide no less than three (3) blower speeds.

6.164 PIPES AND HOSES

All heater and water lines shall be of heavy-duty copper or brass except where shock absorbing or flex-type lines are required. All joints shall be of the slip-fit soldered type. All lines not enclosed within the body or passenger areas shall be heavily insulated.

6.165 HEATER CORES

ALL HEATER CORES SHALL BE OF COPPER AND BRASS.

Metal used in the tanks shall be of adequate thickness with drawn reinforcements. All tanks shall be of sufficient size to preclude fatigue failure.

Heater cores, motors and fans must be readily accessible and installed to permit easy removal.

SAFETY REQUIREMENTS

6.166 GENERAL SAFETY REQUIREMENTS

All structural/load bearing members of the restraint systems to be made of aluminum and/or rust-resistant steel. The wheelchair restraint system shall restrain the wheelchair in a forward facing direction in the bus. All attachment parts which attach the restraint to the bus, as well as all parts of the restraint, shall be capable of withstanding any load developed by a 1,000 pound horizontal deceleration force as might be created by the combined weight of restraint and wheelchair in an emergency situation. The wheelchair restraint system shall be of proven quality and shall function without failure or re-adjustment for 500 cycles. (Restraining a wheelchair and releasing restraints defined as one cycle). This is the case for all operating conditions. Any switches, sensing devices and/or electrical components shall be sealed to prevent contamination by water, humidity, dust or dirt. Also they shall be of proven quality and shall not require adjustment or replacement under normal usage.

6.167 REAR WHEEL OBJECT DEFLECTOR

Each bus shall be equipped with a heavy duty DANGER ZONE OBJECT DEFLECTOR to be installed on the curbside forward of the bus rear wheels. The danger zone object deflector shall be the S-1 Gard, as manufactured and distributed by the Public Transportation Safety Corp., or approved equal, and is intended to deflect or push objects away from the track of the curbside rear wheels. The deflector's physical configuration and installation on the bus shall be such that objects or passengers that fall while exiting from the bus rear door, or persons that trip and fall in the path of the right rear wheels are pushed aside and away from the rear wheel track.

The deflector shall be constructed of the highest quality material capable of resisting material degradation due to common chemical and environmental debris. Workmanship shall be professional. All screws, bolts, nuts, washers and other fasteners used in the deflector installation must be zinc or cadmium plated to prevent corrosion. Bolts and nuts shall be a minimum of SAE Grade 8. Flat and lock washers shall be used when fastening component assemblies together or attaching same to the under structure. The

deflector structural mounting brackets installation/attachment shall not have a negative effect on the strength and structural integrity of the bus under structure. The deflector shall be installed so that the outside vertical surface of the polyurethane boot and guard protector does not extend beyond the side of the tire that would create snagging or premature curb-induced wear.

The mounting location of the deflector for each bus shall be such that it would clear and prevent deflector damage when buses are lifted with any one of the following four (4) types of bus hoists:

- Portable type wheel contact/engagement bus hoist.
- In ground axel engagement bus hoist.
- In ground platform drive-on bus hoist.
- Above ground parallelogram drive-on bus hoist.

Both the deflector boot and guard protector assembly shall be black in color.

⑥ → **6.168 SAFETY TRIANGLE REFLECTOR KIT & FIRE EXTINGUISHER**

A set of three (3) safety reflecting triangles (Reflector Kit) shall be provided. Storage location of Reflector Kit shall be in a dedicated compartment within the driver's barrier.

A fire extinguisher (5# rechargeable 1-A:10-BC rated) shall be provided and mounted on the top of the curbside front wheelhousing in every bus.

SPARE PARTS, TOOLS AND MANUALS

6.169 SPARE PARTS/TOOLS/MANUALS - TRAINING AIR BRAKE BOARD ASSEMBLY

One (1) complete vehicle air brake system "Training Air Board" shall be supplied. The air board shall include all air brake system components, including but not limited to, air compressor, air dryer, air tanks, air valves, slack adjusters, brake canisters with E-Stroke® system, ABS components, pressure gauges, etc. All air board components, with the exception of the air compressor, shall be working models of the vehicle's original equipment brake components. An operator/owners manual and parts manual for the air board shall also be provided.

6.170 BRAKE AND SUSPENSION TOOLS, ETC.

1. One (1) complete set of MAN axle and brake system tools for every fifty (50) buses.

2. One (1) King Pin Press for every fifty (50) buses.

3. One (1) Heavy Duty Transmission Jack for every one hundred (100) buses.

6.171 PORTABLE COMPUTER ←

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #106 & #508 for additional information.

One (1) laptop computer, Panasonic Toughbook CF-51, or approved equal, suitable for diagnosing and troubleshooting the various onboard systems per every twenty-five (25) buses delivered under this contract.

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #6 & #395 for additional information.

6.172 SYSTEMS TROUBLESHOOTING TOOLS, MANUALS & SOFTWARE ←

A. Electrical/PLC System

Provide two (2) sets of Programming and Troubleshooting Software for PLC System for every twenty-five (25) buses to include interfacing cables and any subscription fees for first year. Also provide four (4) sets of manufacturer's troubleshooting manuals for every twenty-five (25) buses.

B. HVAC System

Provide two (2) HVAC System diagnostic tools including interfacing cables for every twenty-five (25) buses. Also provide four (4) sets of manufacturer's parts and service manuals for every twenty-five (25) buses.

C. Engine

Provide two (2) sets of Cummins Insight™ diagnostic and troubleshooting software one (1) year subscriptions for every twenty-five (25) buses to include interfacing cables and adapters (i.e., 9-pin Deutsch connectors and Inline "4" Adapters). Also provide four (4) sets of manufacturer's parts, service and troubleshooting manuals for every twenty-five (25) buses.

D. Transmission

Provide two (2) ZF Transmission diagnostic and troubleshooting kits (Testman Pro kit) for every twenty-five (25) buses. Kit includes software, interfacing cables, and interfacing adapters. Also provide four (4) sets of manufacturer's parts, service and troubleshooting manuals for every twenty-five (25) buses.

E. Antilock Brake System (ABS)

Provide two (2) sets for every twenty-five (25) buses of ABS System diagnostic and troubleshooting software (if available), or PCMCIA diagnostic and troubleshooting cards for Pro-link® if PC software is not available. Also provide four (4) sets of manufacturer's troubleshooting manuals for every twenty-five (25) buses.

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Requests #396 & #485 for additional information.

6.173 MANUFACTURER'S SERVICE, PARTS, & OPERATOR'S MANUALS ←

A. Operator's Manuals-

Provide ten (10) Bus Operator's manuals for every group of buses.

B. Manufacturer's Service Manuals-

Provide six (6) Bus Service Manuals for every group of buses.

C. Manufacturer's Parts Manuals-

Provide ten (10) Bus Parts Manuals for every group of buses.

D. Manufacturer's Electronic Format Manuals-

Provide two (2) Electronic Format (CD/ROM) bus manuals, which include drawings, schematics, OEM manuals for major components such as engine, transmission, HVAC, PLC System, Destination Signs, etc., for every group of buses.

SECTION 7

④ → 7.0 **COST/PRICING FORMS** ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #8 for additional information.

⑥ →

PRICING SCHEDULE

COST AND PRICING FORM FOR YEAR ONE (1)
35' ADVANCED DESIGNED LOWFLOOR HEAVY DUTY TRANSIT BUSES

Availability of the first-article unit shall be within _____ weeks after receipt of Notice to Proceed. The remaining vehicles shall be delivered at the continuous and uninterrupted rate of _____ vehicles per _____ week after acceptance of the first-article.

Item	Description	Unit	Quantity	Unit Price
001	LOWFLOOR 35' LOW FLOOR TRANSIT BUSES:	Each	1	$_____

Propulsion Unit Proposed: _____

Total price per unit per specification Section 5 of RFP less cost of any non-taxable handicap accessibility equipment and delivery charges not subject to sales tax. (These items shall be priced separately in item 002 and 003.)

Item	Description	Unit	Quantity	Unit Price
002	HANDICAP/ACCESSIBILITY EQUIPMENT:	Each	1	$_____

Item	Description	Unit	Quantity	Unit Price
003	DELIVERY CHARGE PER BUS:	Each	1	$_____

Any other item/s considered non-taxable, please identify individual equipment as an attachment to the Cost and Pricing Form.

Item	Description	Unit	Quantity	Unit Price
004	TRAINING :	Hours	728	$_____

Item	Description	Unit	Quantity	Unit Price
005	TRAINING MATERIALS AND MANUALS:	Lot	1	$_____

Item	Description	Unit	Quantity	Unit Price
006	WARRANTY COST PER BUS:	Each	1	$_____

Item	Description	Unit	Quantity	Unit Price
007	SPARE ENGINE:	Each	1	$_____

Item	Description	Unit	Quantity	Unit Price
008	TOOLS (DIAGNOSTIC & REPAIR):	Lot	1	$_____

IMPORTANT: A separate Cost and Price Form and Offer Form must be submitted for each type of propulsion unit proposed for the 35' advanced designed low floor transit bus.

RETURN THIS FORM WITH YOUR PROPOSALS
RETAIN OTHER PAGES FOR YOUR RECORDS

OFFER FORM FOR 35' ADVANCE DESIGNED LOW FLOOR TRANSIT BUS

Propose shall complete the following form and include same in the price proposal.

OFFER

By execution below Proposer hereby offers to furnish equipment and services as specified in the Metropolitan Transit System Request for Proposals No. G1101.0-07 including the Special Provisions and Federal Requirements (Section 2), Quality Assurance Provisions (Section 3), Warranty Provisions (Section 4) and Technical Specifications for the 35' Advanced Designed Low Floor Transit Bus (Section 5), therein.

Propulsion Unit Proposed:

_____

Proposer:_____
Name

Street Address:_____

City, State, Zip:_____

Signature of Authorized Signer:_____

Title:_____

Phone Number:_____

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PRICING SCHEDULE

COST AND PRICING FORM FOR YEAR ONE (1)
LOWFLOOR 40' HEAVY DUTY CNG TRANSIT BUSES

Availability of the first-article unit shall be within _____ weeks after receipt of Notice to Proceed. The remaining vehicles shall be delivered at the continuous and uninterrupted rate of _____ vehicles per _____ week after acceptance of the first-article.

Item	Description	Unit	Quantity	Unit Price
001	LOW FLOOR 40' HEAVY DUTY CNG TRANSIT BUSES:	Each	1	$_____

Total price per unit per MTS RFP No. GXXX.0-07, Section 6, less cost of any non-taxable handicap accessibility equipment and delivery charges not subject to sales tax. (These items shall be priced separately in item 002 and 003.)

Item	Description	Unit	Quantity	Unit Price
002	HANDICAP/ACCESSIBILITY EQUIPMENT:	Each	1	$_____

Item	Description	Unit	Quantity	Unit Price
003	DELIVERY CHARGE PER BUS:	Each	1	$_____

Any other item/s considered non-taxable, please identify individual equipment as an attachment to the Cost and Pricing Form.

Item	Description	Unit	Quantity	Unit Price
004	TRAINING:	Hours	728	$_____

Item	Description	Unit	Quantity	Unit Price
005	TRAINING MATERIALS AND MANUALS:	Lot	1	$_____

Item	Description	Unit	Quantity	Unit Price
006	WARRANTY COST PER BUS:	Each	1	$_____

Item	Description	Unit	Quantity	Unit Price
007	TOOLS (DIAGNOSTIC & REPAIR):	Lot	1	$_____

RETURN THIS FORM WITH YOUR PROPOSALS
RETAIN OTHER PAGES FOR YOUR RECORDS

OFFER FORM FOR 40' LOW FLOOR CNG TRANSIT BUS

Offeror shall complete the following form and include same in the price proposal.

OFFER

By execution below Proposer hereby offers to furnish equipment and services as specified in the Metropolitan Transit System Request for Proposals No. G1101.0-07 including the Special Provisions and Federal Requirements (Section 2), Quality Assurance Provisions (Section 3), Warranty Provisions (Section 4) and Technical Specifications for the 40' Low Floor CNG Transit Bus (Section 6), therein.

Propulsion Unit Proposed:

_____

Proposer:_____
Name

Street Address:_____

City, State, Zip:_____

Signature of Authorized Signer:_____

Title:_____

Phone Number:_____

RETURN THIS FORM WITH YOUR PROPOSALS
RETAIN OTHER PAGES FOR YOUR RECORDS

BID CERTIFICATION FORM

_____, [authorized person] of _____ [company name] certify that I have read and will comply with all bid materials and requirements as stated in the bid materials.

Please initial that you have completed, understood, submitted, and will comply with the following:

_____ I have completed, signed, and submitted the bid forms.

_____ I have completed, signed, and submitted the Certificate of Compliance with MTS Equal Opportunity Programs (EOP) form, including the Equal Opportunity Program Workforce Report.

_____ I have completed, signed, and submitted the Buy America Certificate (Alternative A **or** B).

_____ I have completed, signed, and submitted the Subcontractor's Statement of Eligibility.

_____ I have completed, signed, and submitted the Public Contract Code Section 10162 Questionnaire.

_____ I have completed, signed, and submitted the Nonconclusion Affidavit form.

_____ I have completed, signed, and submitted the Certification of Restrictions on Lobbying.

_____ I have completed, signed, and submitted the Disclosure of Lobbying Activities.

Signed: _____ Date: _____

Print Name: _____ Title: _____

RETURN THIS FORM WITH YOUR BID
RETAIN OTHER PAGES FOR YOUR RECORDS

SECTION 8

8.0 SAMPLE STANDARD PROCUREMENT AGREEMENT & STANDARD PROCUREMENT CONDITIONS

G1101.0-07
CONTRACT NUMBER

STANDARD PROCUREMENT AGREEMENT

FILE/PO NUMBER(S)

THIS AGREEMENT is entered into this _____ day of _____ 2007, in the State of California by and between San Diego Metropolitan Transit System, a California public agency, and the following contractor, hereinafter referred to as "Contractor":

Name: _____ Address: _____

Form of Business: _____ _____
(Corporation, partnership, sole proprietor, etc.)

Telephone: _____

Authorized person to sign contracts: _____
Name Title

The attached Standard Conditions are part of this agreement. The Contractor agrees to furnish to MTS services and materials, as follows:

Manufacture and delivery of 35' and 40' Low Floor Heavy Duty Transit Buses over a five (5) year period. Buses will be delivered for inspection at the following address: 100 16th Street, San Diego, CA 92101. Specific quantities and delivery dates will be established; as stipulated in MTS's (RFP) No. G1101.0-07 35' and 40' Low Floor Transit Buses including Addendum # X through X; MTS's Responses to Questions/Clarifications; and in accordance with the Standard Procurement Agreement including the Standard Conditions Procurement, Federal Requirements, (Successful Proposer's Name) Proposal dated XX XX, 2007 and or (Successful Proposer's Name) BAFO Dated XX XX, 2007 in response to MTS (RFP) No. G1101.0-07 35' and 40' Low Floor Transit Buses. If there are inconsistencies between the RFP, and Addendum, Responses to Approved Equals/Clarifications, Standard Procurement Agreement, and/or the Standard Conditions Procurement, and Federal Requirements, the following order of precedence will govern the interpretation of this contract:

1. MTS's 35' and 40' Low Floor Transit Buses (RFP) G1101.0-07 , Addendum #X through X, MTS's Responses to Questions/Clarifications, and (Successful Proposer's Name) Proposal dated XX XX, 2007, and or (Successful Proposer's Name) BAFO dated XX XX, 2007 in response to MTS (RFP) G1101.0-07.

2. Standard Procurement Agreement, Standard Conditions Procurement, and Federal Requirements.

This Contract shall remain in effect for a five (5) years period.

Total expenditures of this contract (not including options) shall not exceed $_____.

SAN DIEGO METROPOLITAN TRANSIT SYSTEM	CONTRACTOR AUTHORIZATION
By: _____ Chief Executive Officer	Firm: _____
Approved as to form:	By: _____ Signature
By: _____ Office of General Counsel	Title: _____

AMOUNT ENCUMBERED	BUDGET ITEM	FISCAL YEAR
$		

By: _____
Chief Financial Officer — Date

DOC ID/DATE

(___ total pages, each bearing contract number) 1/29/08

8.1 STANDARD CONDITIONS PROCUREMENT

STANDARD CONDITIONS PROCUREMENT

1. COMPLETE AGREEMENT

This agreement, including all applicable terms, conditions, and specifications, shall constitute the sole and exclusive agreement between the parties. This agreement supersedes all other writings and is expressly conditional upon Contractor's agreement to the conditions hereof, and nothing shall be construed to be an acceptance of any terms of Contractor.

2. INSURANCE

Contractor will include the contract number on all insurance-related correspondence, i.e., the insurance certificate itself. The insurance certificate's verbiage, as so stated in Section 10, "Sample of Insurance Certificate," should be strictly adhered to as represented in the sample.

All policies required shall be issued by companies who are licensed or approved to do business in the State of California and hold a current policyholder's alphabetic and financial-size category rating of not less than A-VI, in accordance with A.M. Best.

A. COVERAGE REQUIRED - ALL CONTRACTS

(1) Liability

(a) Commercial General Liability. At all times during this contract and, with respect to Products and Completed Operations Liability, for twelve (12) months following the acceptance of the work by MTS, Contractor agrees to maintain Commercial General Liability Insurance for bodily injury and property damage in an occurrence form and with insurance companies acceptable to MTS. Commercial General Liability Insurance must include coverage for the following:

- Premises/Operations Liability
- ~~Aggregate Limits per Project~~
- Products/Completed Operations Liability
- No Explosion, Collapse, and Underground (XCU) exclusion
- Contractual Liability, with respect to this agreement
- Personal Injury Liability
- Broad Form Property Damage
- Independent Contractors

All such policies shall name in the endorsement San Diego Metropolitan Transit System (MTS), San Diego Trolley, Inc. (SDTI), San Diego and Arizona Eastern Railway (SD&AE), San Diego and Imperial Valley Railroad (SD&IV), and San Diego Transit Corporation (SDTC), their directors, officers, agents, and employees as additional insureds as their interests may appear.

(b) Automobile Liability. At all times during this contract, Contractor agrees to maintain Automobile Liability Insurance for bodily injury and property damage including coverage for all owned, nonowned, and hired vehicles.

(c) Workers' Compensation/Employer Liability. At all times during this contract, Contractor agrees to maintain Workers' Compensation and Employers' Liability Insurance in compliance with the applicable statutory requirements. Contractor waives any rights of subrogation against MTS, SDTI, SD&AE, SD&IV, and SDTC, and the policy form must permit and accept such waiver.

B. ADDITIONAL COVERAGES REQUIRED (AS INDICATED)

☐ (1) Owner-Provided Builder's Risk
PROVIDED

MTS will provide Builder's Risk Insurance on a special form basis, excluding the perils of earthquake and flood, at a limit of not less than the full replacement value of the work and covering the work and all materials and equipment to be incorporated therein, including property in transit elsewhere, and insuring the interests of the Contractor, subcontractors, material men, and MTS, SDTI, SD&AE, SD&IV, SDTC, MTS's contractor for design, and MTS's contractor for construction management. However, Contractor is responsible for the portion of any loss that is within the deductible amount of this Builder's Risk Insurance, which is currently at $50,000 but is subject to change.

☐ (2) Railroad Protective or Equivalent
REQUIRED

Any exclusions relating to performance of operations within the vicinity of any railroad, bridge, trestle, track, roadbed, tunnel, underpass, or crossing must be deleted. Option: purchase separate Railroad Protective Liability Policy as required.

☐ (3) Professional Liability
REQUIRED

At all times during this contract, and for twelve (12) months following acceptance of work by owner, Contractor agrees to maintain Professional Liability Insurance with respect to services or operations under this agreement.

☐ (4) REQUIRED

Pollution Legal Liability

At all times during this contract, and for twenty-four (24) months following, Contractor agrees to maintain Pollution Legal Liability Insurance with respect to services or operations under this agreement. The extended discovery period must be no less than twenty-four (24) months.

☐ (5) REQUIRED

Contractor Equipment

At all times during this contract, Contractor agrees to maintain Contractor's Equipment Insurance on a special form basis covering equipment owned, leased, or used by Contractor. Contractor waives any rights of subrogation against MTS, SDTI, SD&AE, SD&IV, and SDTC, and the policy form must permit and accept such waiver. Contractor hereby releases and holds harmless MTS for any loss or damage to its equipment.

☐ (6) REQUIRED

Installation Floater

At all times during this contract, Contractor agrees to maintain Installation Floater Insurance on a special form basis covering property owned or provided by Contractor. Contractor waives any rights of subrogation against MTS, SDTI, SD&AE, SD&IV, and SDTC, and the policy form must permit and accept such waiver. Contractor hereby releases and holds harmless these entities for any loss or damage to its property.

☐ (7) REQUIRED

Garage Keeper's Legal Liability & Automobile Portion

At all times during this contract, Contractor agrees to maintain Garage Keeper's Legal Liability as well Automobile Portion which covers the risk of loss or damage to MTS vehicles while in the care, custody or control of Contractor. Automobile portion shall cover the Contractor in the event of a vehicle accident while they are driving a MTS vehicle, which results in a third party claim of physical damage or bodily injury.

☑ (8) REQUIRED

Primary and Non-Contributory Insurance

Contractor agrees that all general liability coverages required under this insurance section are PRIMARY and that any insurance of MTS, SDTI, SD&AE, SD&IV, and SDTC shall be excess and noncontributory (endorsement required).

☐ (9) REQUIRED

Crime Fidelity Insurance

At all times during this contract, Contractor agrees to maintain Crime Fidelity Insurance with respect to services or operations under this agreement. The coverage should include Electronic and Computer Crime.

C. MINIMUM POLICY LIMITS REQUIRED

	Combined Single Limit (CSL)
Commercial General Liability (Per Occurrence):	$1,000,000
Automobile Liability:	$1,000,000
Worker's Compensation Employer's Liability:	$1,000,000

Additional Coverages (as indicated under Section B, Additional Coverages Required):

☐	B (1) Builder's Risk:	Replacement Cost
☐	B (2) Railroad Protective	$
☐	B (3) Professional Liability	$
☐	B (4) Pollution Liability	$
☐	B (5) Contractor Equipment	Replacement Cost
☐	B (6) Installation Floater	Replacement Cost
☐	B (7) Garage Keeper's Legal Liability	$1,000,000
☐	B (8) Primary and Non-Contributory Insurance	As Required
☐	B (9) Crime Fidelity Insurance	$

D. POLICY PROVISION REQUIRED

All policies and coverages shall contain a provision for thirty (30) days written notice by the Insurer(s) to MTS Contracts Specialist of any cancellation or material reduction of coverage. A ten (10) day notice is required for non-payment of premium.

E. EVIDENCE REQUIRED

Within ten (10) working days following receipt of notice that a contract has been awarded, Contractor shall have provided the MTS Contracts Specialist with satisfactory certification by a qualified representative of the Insurer(s) that Contractor's insurance complies with all provisions in this insurance section.

F. SPECIAL PROVISIONS

The foregoing requirements as to the types and limits of insurance coverage to be maintained by Contractor, and any approval of said insurance by MTS, SDTI, SD&AE, SD&IV, and SDTC, or their insurance Contractor(s) are not intended to and shall not in any manner limit or qualify the liabilities and obligations otherwise assumed by Contractor pursuant to this agreement, including but not limited to the provisions concerning indemnification.

MTS reserves the right to withhold payments to Contractor in the event of material noncompliance with the insurance requirements outlined above.

3. CHANGES

MTS may direct, in writing, changes, including changes to the quantities originally ordered, specifications, or drawings. No change in unit prices or an extension of time shall be granted to Contractor, for any quantity variations, if the total quantity of items as actually required varies not more than plus or minus twenty (20%) percent. Variations of quantities by more than plus or minus twenty (20%) percent will be subject to an equitable adjustment, if requested in writing by the MTS or the Contractor and the adjustment shall be based solely upon the variation of the quantities.

Contractor shall assert any claims for adjustment, which would result from the implementation of MTS's comments on Contractor's technical documents within thirty (30) calendar days from the date of Contractor's receipt of such comments, and no adjustment will be made hereunder unless MTS confirms the change by a written revision after mutual agreement between MTS and the Contractor.

However, nothing herein shall excuse Contractor from proceeding with the agreement, as changed, prior to negotiation of the equitable adjustment.

4. PRICE AND PAYMENT

The total price herein specified, unless otherwise expressly stated, shall include all taxes of any kind which either party is required to pay with respect to the sale of the goods covered by this agreement, including sales and use taxes, and shall include all charges and expenses for customs duties, freight charges, inspection, testing, packaging and loading unless specifically excluded.

Payment will be made as set forth in this agreement; however, payments may be withheld or portions thereof may be deducted or setoffs may be made against Contractor if Contractor is not performing work in accordance with the applicable provisions of this agreement. The time for payment of invoices or for accepting any discounts offered shall run only from the date of receipt of correct invoices with required certification documents by MTS.

5. DELIVERY

Timely performance and deliveries are essential to this order. However, Contractor will not be liable for delays in performing its obligations to the extent the delay is caused by an unforeseeable condition, which is beyond Contractor's reasonable control, without Contractor's fault or negligence. Acts of God, such as storms or floods, as well as government priorities, acts of civil or military authorities, fires, strikes, epidemics, war or riot, are examples of events which will be excusable for being beyond Contractor's reasonable control only upon fulfillment of the following conditions: (a) within seven (7) calendar days of the commencement of any excusable delay, Contractor shall provide MTS with written notice of the cause and extent thereof, as well as request for a schedule extension for the estimated duration thereof; and (b) within seven (7) calendar days of the cessation of the event causing delay, Contractor shall provide MTS with written notice of the actual delay incurred, upon receipt of which the date of promised delivery shall be extended for the time actually lost by reason of an excusable delay.

6. SUSPENSION ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #43 for additional information.

Notwithstanding any other provisions of this agreement, MTS may suspend or extend the time for Contractor's performance at any time, from time to time, upon ten (10) calendar days prior to written notice of such suspension or extension. Thereafter, Contractor shall resume performance as directed by MTS. In the event of such suspension or extension, Contractor shall be entitled to reimbursement for additional costs reasonably and necessarily incurred by Contractor directly attributable to such suspension or extension period to the extent that such additional costs are actually incurred. Contractor shall submit such documentation, as MTS may deem necessary to substantiate any such costs actually incurred. MTS will make the final determination of the validity of any claim for reimbursement and the amount, if any, thereof.

7. NONWAIVER

Failure of MTS to insist upon strict performance of any of the terms and conditions hereof, or failure or delay to exercise any rights or remedies provided herein or by law, or to properly notify Contractor in the event of breach, or the acceptance of payment for any goods hereunder, or review of design shall not release Contractor from any of the warranties or obligations of this agreement and shall not be deemed a waiver of any right of MTS to insist upon strict performance hereof, or any of its rights or remedies as to any such good, regardless when shipped, received, or accepted or as to any prior or subsequent default hereunder, nor shall any revision of this agreement by MTS operate as a waiver of any of the terms hereof. A requirement that a Contractor's document is to be submitted for or subject to "authorization to proceed," "approval," "acceptance," "review," "comments," or combinations of such words or words of like import shall mean, unless the context clearly indicates otherwise, that Contractor shall, before implementing the information in the document, submit the document, obtain resolution of any comments, and obtain written authorization from MTS to proceed, and shall not mean that a complete check will be performed. Authorization to proceed shall not constitute acceptance or approval of design details, calculations, analyses, test methods, or materials developed or selected by Contractor and shall not relieve Contractor from full compliance with contractual obligations.

8. QUALITY STANDARDS

Except as otherwise expressly provided herein, Contractor shall be responsible for all inspection and testing, and agrees to strictly follow the standards of quality specified by MTS in addition to those customary in the industry. MTS shall be afforded free access to plants of Contractor and its suppliers in order to make surveillance inspections to monitor compliance with contractual quality requirements, and MTS's right to inspect, examine, and test the goods shall extend through the manufacturing process, the time and shipment, and a reasonable time after arrival at the ultimate destination. Contractor's failure to adhere to the standards of quality required under this agreement shall be deemed to be reasonable grounds for insecurity justifying a written demand from MTS that Contractor provide adequate assurance of Contractor's ability to meet said standards.

Goods shall not be deemed accepted until finally inspected and examined at final destination.

The making or failure to make any surveillance inspection or examination of, payment for, or acceptance of the goods shall in no way impair MTS's right to reject nonconforming goods, or to avail itself of any other remedies to which MTS may be entitled, notwithstanding MTS's knowledge of the nonconformity, its substantiality, or the ease of its discovery.

9. EXPEDITING

The goods furnished under this agreement shall be subject to expediting by MTS. MTS shall be afforded free access to Contractor's shops, factories, or places of business, and those of Contractor's suppliers, for expediting purposes. As required by MTS, Contractor shall supply schedules, unpriced copies of purchase orders and progress reports for MTS's use in expediting.

10. WARRANTIES-GUARANTEES

Contractor warrants that the goods shall be new, free from liens and defects in design, materials, workmanship, and title, and shall conform in all respects to the terms of this agreement and to the drawings issued for manufacture by Contractor, and shall be of the best quality, if no quality is specified. Unless the warranty period is otherwise extended, the warranty shall apply. If, within one (1) year from the date of commercial operation for the purpose for which the goods were purchased, or eighteen (18) months from the date of final delivery, whichever comes first, it appears that the goods, or any part thereof, do not conform to these warranties, and MTS so notifies Contractor within a reasonable time after its discovery, Contractor shall thereupon promptly correct such nonconformity to the satisfaction of MTS, at Contractor's sole expense, failing which MTS may reject and cover by purchasing substitute goods or MTS may proceed to make corrections or accomplish Contractor's performance by the most expeditious means available, the costs of cover or correction shall be for Contractor's account. Contractor's liability hereunder shall extend to all damages such as demand inspection, costs of return or warehousing. Contractor shall not be liable for consequential damages, such as loss of profit, loss of use or production, or costs of capital. NO IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR PURPOSE SHALL APPLY.

11. INFRINGEMENT

Contractor shall, at its own expense, hold harmless and defend MTS and its representatives under this agreement against any claim, suit, or proceeding brought against MTS or their representatives, which is based upon a claim, whether rightful or otherwise, that any goods, process or material, or any part thereof, furnished by Contractor under this agreement, constitutes an infringement and/or if the use of any such goods, process or material is enjoined, Contractor shall, at its sole expense, subject to the following provisions, either procure for MTS an irrevocable, royalty-free license to continue using such goods, process or material, or with MTS's prior written approval, replace same with substantially equal but noninfringing equipment or modify it so it becomes noninfringing, provided that no such replacement or modifications shall in any way amend or relieve Contractor of its warranties and guarantees set forth in this agreement.

The preceding paragraph(s) shall not apply to any goods, or any part thereof, manufactured to MTS's detailed design. As to such goods or part, the Contractor assumes no liability whatsoever for patent infringement.

This indemnity is given upon the condition that MTS shall promptly, after receiving notice thereof, notify Contractor of any claim or suit or proceeding involving MTS in which such infringement is alleged, and MTS shall permit Contractor to control completely the defense or compromise of such allegation of infringement, and MTS shall render such reasonable assistance at Contractor's cost in the defense thereof as Contractor may require.

12. ASSIGNMENT

Any assignment of this agreement or of any rights hereunder of hypothecation thereof in any manner, in whole or in part, without the prior written consent of MTS shall be null and void. Notwithstanding the foregoing, Contractor may assign monies due or to become due under this agreement and such assignments will be recognized by MTS, provided that written notice thereof is given to MTS at least ten (10) calendar days before payment is due. Any assignment of monies shall be subject to proper setoffs in favor of MTS to all deductions provided for in this agreement. All money withheld, whether assigned or not, shall be subject to being used by MTS for the completion of the agreement, in the event Contractor should be in default therein.

13. TERMINATION FOR CONVENIENCE

Performance under this agreement may be terminated by MTS in accordance with this clause in whole or, from time to time, in part, whenever MTS shall elect. Any such termination shall be effected by delivery to Contractor of a Notice of Termination specifying the extent to which performance under this agreement is terminated, and the date upon which such termination becomes effective. Upon receipt of any such notice, Contractor shall, unless the notice requires otherwise:

A. immediately discontinue performance on the date and to the extent specified in the notice;

B. place no further orders for materials other than as may be necessarily required for completion of such portion of the agreement that is not terminated;

C. promptly make every reasonable effort to either obtain cancellation on terms satisfactory to MTS of all orders to Contractor's suppliers to the extent they relate to the performance of that portion terminated, or upon MTS's concurrence assign to MTS those orders; and

D. assist MTS, upon request, in the maintenance, protection, and disposition of property acquired by MTS under this agreement.

If claimed in writing within thirty (30) calendar days after Notice of Termination, MTS will pay to Contractor an equitable adjustment to include (without duplication of any item):

A. all amounts due and not previously paid to Contractor for goods completed in accordance with this agreement prior to such notice;

B. a reasonable amount for any goods and materials then in production; provided that no such adjustment be made in favor of Contractor with respect to any goods which are Contractor's standard stock;

C. costs of settling and paying supplier's claim arising out of the canceled orders; and

D. a reasonable profit for costs incurred in the performance of that portion terminated; provided, however, that if it appears that Contractor would have sustained a loss on the entire agreement had it been completed, no profit shall be included.

The total sum to be paid to Contractor under this clause shall not exceed the total order price as reduced by the amount of payments otherwise made, and as further reduced by the order price of that portion not terminated, and will not include any consideration for loss of anticipated profits on the terminated portion all claims for which seller agrees to waive.

14. TERMINATION FOR DEFAULT

MTS may terminate the whole or any part of Contractor's performance in any one of the following circumstances:

A. if Contractor fails to make delivery or fails to perform within the time specified herein or any extension thereof; or

B. if Contractor delivers nonconforming goods; or

C. if Contractor fails to perform in accordance with the provisions of this agreement, or so fails to make progress as to endanger performance of this agreement in accordance with its terms.

In the event of any such failure, MTS will provide Contractor with notice of the nature of the failure and MTS's intention to terminate for default. In the event Contractor does not cure such failure within ten (10) calendar days of such notice, MTS will provide Contractor with written Notice of Termination for Default.

In the event MTS terminates as provided herein, MTS may procure, upon such terms, and in such manner as MTS may deem appropriate, supplies or services similar to those so terminated, and Contractor shall be liable to MTS for any excess costs for such similar supplies or services; and Contractor shall continue the performance of this agreement to the extent not terminated under the provisions of this clause.

In the event of Contractor's default, Contractor agrees to mitigate damages by cooperating with MTS in transferring information and disposing of goods in process or MTS's materials as MTS may reasonably request. If after Notice of Termination for Default it is determined for any reason that Contractor was not in default under the provisions of this clause, or that the default was excusable under the provisions of this clause, the rights and obligations of the parties shall be the same as if the Notice of Termination had been issued pursuant to the Termination for Convenience clause.

15. SURVIVAL

Notwithstanding MTS's acceptance of the goods and payment therefore, Contractor shall remain obligated under all clauses of this agreement, which expressly or by their nature extend beyond and survive such acceptance and payment.

16. LANGUAGE AND MEASURE UNITS

Unless specified otherwise, manuals, specifications, drawings, plans, purchase orders, subcontract documents, and invoices submitted in accordance with this agreement shall be in metric ("Systems International d' Units," or "SI units") with the United States equivalents clearly shown.

17. APPLICABLE LAW-DEFINITIONS

The definition of terms used, interpretation of this agreement, and rights of all parties hereunder shall be construed under and governed by the law of the state of California, United States of America. "MTS" means the San Diego Metropolitan Transit System (MTS) or its designee. "Contractor" means the person, firm, or corporation to which this agreement is addressed. "Goods" means those articles, materials, supplies, drawings, data, and other property, and all services, including design, delivery, installation, inspection, testing, and expediting, specified or required to furnish the goods ordered by this agreement.

18. STANDARDS AND CODES

Whenever references are made in the agreement to standards or codes in accordance with which the goods are to be manufactured or tested, the edition or revision of the standards or codes current on the effective date of this agreement shall apply, unless otherwise expressly set forth. Unless otherwise specified, reference to such standards or codes is solely for implementation of the technical portions of such standards and codes.

In case of conflict among any referenced standards and codes, or between any referenced standards and codes and the Technical Specifications, MTS will determine which will govern.

19. SUCCESSORS AND ASSIGNS

All terms, conditions, and provisions hereof shall inure to and bind hereto their and each of their respective heirs, executors, administrators, successors, and assigns.

Except as provided above, Contractor shall not sublet, assign, or transfer its interest in this agreement without the prior written consent of MTS.

20. HOLD HARMLESS/INDEMNITY

As between MTS and Contractor, Contractor is deemed to assume responsibility and liability for, and Contractor shall indemnify and hold harmless, MTS, SDTI, SDTC, SD&AE, SD&IV and any and all of its directors, officers, agents or employees from and against any and all claims, loss, damage, charge, or expense, whether direct or indirect, which MTS, SDTI, SDTC, SD&AE, SD&IV or such directors, officers, agents or employees may be put or subjected, by reason of any damage, loss, or injury of any kind or nature whatever to persons or property caused by or resulting from or in connection with any negligent act or action, or any neglect, omission, or failure to act when under a duty to act on the part of Contractor or any of its officers, agents, servants, employees or subcontractors in its or their performance under this Agreement. In addition to any other remedy authorized by law, so much of the money due Contractor under this agreement as shall be considered necessary by MTS may be retained until disposition has been made of any claim for damages.

21. ATTORNEYS' FEES

In the event either party hereto finds it necessary to retain an attorney in connection with the default by the other in any of the agreements or covenants contained in this agreement, or in the event of litigation regarding this agreement, the losing party shall pay reasonable attorneys' fees to the prevailing party.

22. EQUAL EMPLOYMENT OPPORTUNITY PROGRAM

MTS's Equal Employment Opportunity Program for Contractors is part of this agreement (a copy can be obtained from MTS's Clerk of the Board). A Certificate of Compliance and a Workforce Report form signed by the Contractor is a condition for the award of this contract.

23. DISADVANTAGED BUSINESS ENTERPRISE (DBE) PARTICIPATION *(applies to federally funded contracts only)*

POLICY

It is the policy of the Department of Transportation that Disadvantaged Business Enterprises (DBEs) as defined in 49 C.F.R. Part 23 shall have the maximum opportunity to participate in the performance of Contracts financed in whole or in part with Federal Funds under this agreement. Consequently the DBE requirements of 49 C.F.R. Part 23 apply to this agreement.

DBE OBLIGATION

Contractor agrees to ensure that Disadvantaged Business Enterprises as defined in 49 C.F.R. Part 23 have the maximum opportunity to participate in the performance of Contracts and subcontracts financed in whole or in part with Federal funds provided under this agreement. In this regard, all recipients or contractors shall take all necessary and reasonable steps in accordance with 49 C.F.R. Part 23 to ensure that Disadvantaged Business Enterprises have the maximum opportunity to compete for and perform contracts. Recipients and their contractors shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of DOT assisted contracts.

REMEDY

Failure of the Contractor to comply with this section or to include it in any subcontract of any tier will constitute a breach of Contract and, after notification of DOT, may result in termination of the Contract by MTS or such remedy as MTS deems appropriate.

DBE CERTIFICATION

Pursuant to Title 49, Code of Federal Regulations, part 23.67, an Offeror, as a condition of being authorized to respond to this solicitation, must certify by completing "DBE APPROVAL CERTIFICATION" form, see Section 11, Page 267, that it has on file with the Federal Transportation Administration (FTA) an approved or not disapproved annual Disadvantaged Business Enterprise (DBE) subcontracting participation goal.

24. PROMPT PAYMENT ← A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #523 for additional information.

No retainage will be held by the agency from progress payments due to the prime contractor. Any retainage kept by the prime contractor or by a subcontractor must be paid in full to the earning subcontractor in thirty (30) days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment may take place only for good cause and with MTS's prior written approval. Any violation of these provisions shall subject the violating contractor or subcontractor to the penalties, sanctions, and remedies specific in Section 7108.5 of the California Business and Professions Code. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise, available to the prime contractor, or subcontractor in the event of a dispute involving late payment, or nonpayment by the contractor, or deficient subcontractor's performance, or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors.

25. NONDISCRIMINATION BY CONTRACTOR

The Contractor 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 C.F.R., 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 MTS deems appropriate.

SA-PROCUREMENT (Revised 5-30-06)
1/29/08

SECTION 9

9.0 FEDERAL REQUIREMENTS

I. No Federal Government Obligations to Third Parties

As a Federal Transit Administration (FTA) grantee, the Metropolitan Transit Development Board, a California Public Agency operating the Metropolitan Transit System (MTS), is required to inform the Contractor of the following information:

The Federal Government shall not be subject to any obligations or liabilities to any third-party contractor, or any other person not a party to the Grant Agreement or Cooperative Agreement in connection with the performance of this contract. Notwithstanding any concurrence provided by the Federal Government in or approval of any solicitation, subagreement, or third-party contract, the Federal Government continues to have no obligations or liabilities to any party, including the third-party contractor.

II. False or Fraudulent Statements or Claims

As an FTA grantee, MTS is required to inform the Contractor of the following information:

The Contractor recognizes that the requirements of the Program Fraud Civil Remedies Act of 1986, as amended, 49 U.S.C. Section 3801, et seq., and U.S. Department of Transportation (DOT) regulations, "Program Fraud Civil Remedies," 49 C.F.R., Part 31, apply to its actions pertaining to this contract. Accordingly, by signing the contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, or it may make pertaining to the contract. In addition to other penalties that may be applicable, the Contractor also acknowledges that if it makes a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986, as amended, on the Contractor to the extent the Federal Government deems appropriate. The Contractor also acknowledges that if it makes a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government in connection with an urbanized area formula project financed with federal assistance authorized by 49 U.S.C., Section 5307, the government reserves the right to impose on the Contractor the penalties of 18 U.S.C., Section 1001 and 49 U.S.C., Section 5307(n)(1), to the extent the Federal Government deems appropriate.

III. Buy America

As an FTA grantee, MTS is required to inform the Contractor of the following information:

The bidder's attention is directed to the "Buy America" requirements set forth in Section 165 of the federal Surface Transportation Act of 1982, and the FTA regulations implementing Section 165 (49 C.F.R., Part 661). Information on "Buy America" requirements (49 C.F.R., Part 661) is available for review at the MTS office.

Any steel or manufactured product used in projects supported by FTA funds must be produced in the United States unless the Secretary of Transportation determines that one of the following exceptions applies:

A. Applying this provision would be inconsistent with the public interest.

B. The materials and products required for a project are not produced in the United States either in sufficient quantity or not of the quality required for this project.

C. Including domestically produced material will increase the cost of the contract by more than twenty-five (25%) percent.

D. Note: In calculating the cost of components under the terms of these provisions, labor costs involved in the final assembly are not to be included.

E. Where an FTA grantee is purchasing buses or other rolling stock (including train control, communication, and traction power equipment), the cost of components produced in the United States is more than sixty (60%) percent of the cost of all the components of the rolling stock or equipment, and final assembly of the stock or equipment has taken place in the United States.

F. In reference to exception C above, FTA requires that the bid for nondomestic items must be adjusted by the appropriate differential ten to twenty-five (10% or 25%) percent and then the adjusted overall bid prices compared to determine if the inclusion of domestic materials will increase the "overall project contract." When both "rolling stock" and "nonrolling stock" are being procured in a single contract, the appropriate differentials will be applied to the different items only and not to the overall bid price.

G. Thus, the foreign purchased components of the individual bid items will be adjusted upward for purposes of determining Buy America compliance only, by ten (10%) percent for rolling stock and twenty-five (25%) percent for nonrolling stock, thereby increasing the contractor's cost proposal item by the adjusted amount, thereby adjusting the overall total bid price.

H. The revised bid amount will be the basis for determining the lowest bidder.

I. Within five (5) days of written notification, the bidder shall provide the necessary information to substantiate the cost of nondomestic items and the factual basis for the claim of exception to the requirements of Section 165(a) of the Surface Transportation Assistance Act of 1982 and the regulations in 49 C.F.R., part 661.

J. The Buy America Certificate included in the Contract Documents, Alternative 'A' or 'B,' must be completed and submitted with the bid. A bid which does not include either Alternative 'A' or 'B' or which includes both Alternative 'A' and Alternative 'B' may be considered nonresponsive.

K. A waiver from the Buy America provision may be sought by the Contractor if grounds for the waiver exist. Inclusion of the Alternative 'B' certificate in a bid constitutes an application by the bidder for an exception to the Buy America requirement applicable to this type of contract. If a bid includes the Alternative 'B' certificate and an exception is not granted by FTA, the bid will be considered nonresponsive.

IV. Environmental Violations

As an FTA grantee, MTS is required to inform the Contractor of the following information:

For all contracts and subcontracts in excess of $100,000, Contractor agrees to comply with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act (42 USC, 1857H), Section 508 of the Clean Water Act (33 USC, 1368), Executive Order 11378, and Environmental Protection Agency regulations (40 C.F.R., Part 15) which prohibit the use under nonexempt federal contracts, grants, or loans of facilities included on the EPA list of Violating Facilities. Contractor shall report violations to FTA and to the USEPA Assistant Administrator for Enforcement (ENO329).

V. Environmental Requirements

As an FTA grantee, MTS is required to inform the Contractor of the following information:

The successful bidder shall recognize that many federal and state laws imposing environmental and resource conservation requirements may apply to the Project. Some, but not all, of the major federal laws that may affect the project include: the National Environmental Policy Act of 1969, as amended, 42 U.S.C. §§ 4321 et seq.; the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. and scattered sections of 29 U.S.C.; the Clean Water Act, as amended, scattered sections of 33 U.S.C. and 12 U.S.C.; the Resource Conservation and Recovery Act, as amended, 42 U.S.C. §§ 6901 et seq., and the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9601 et seq. The successful bidder shall recognize that U.S. EPA, FHWA and other agencies of the Federal Government have issued and are expected in the future to issue regulations, guidelines, standards, orders, directives, or other requirements that may affect the project. Thus, the successful bidder agrees to adhere to, and impose on its subcontractors and third-party contractors, any such federal requirements as the Federal Government may now or in the future promulgate. Listed below are requirements of particular concern to FTA and MTS. The successful bidder acknowledges that this list does not constitute the successful bidder's entire obligation to meet all federal environmental and resource conservation requirements.

A. Environmental Protection. The successful bidder shall comply with the applicable requirements of the National Environment Policy Act of 1969, as amended, 42 U.S.C. §§ 4321 et seq. in accordance with Executive Order no. 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," 59 Fed. Reg. 7629, Feb. 16, 1994; 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. Part 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.

B. Air Quality.

1. The successful bidder shall comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. Specifically:

b. The successful bidder shall comply with applicable requirements of U.S. EPA regulations, "Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act," 40 C.F.R. part 51, Subpart T; and "Determining Conformity of Federal Actions to State or Federal Implementation Plans," 40 C.F.R. Part 93. To support the requisite air quality conformity finding for the Project, the successful bidder shall implement each air quality mitigation and control measure incorporated in the Project. The successful bidder agrees that any Project identified in a State Implementation Plan (SIP) as a Transportation Control Measure, will be wholly consistent with the description of the design concept and scope of the Project described in the SIP.

b. U.S. EPA also imposes requirements implementing the Clean Air Act, as amended that may apply to transit operators, particularly operators of large transit bus fleets. Thus, the successful bidder should be aware that the following U.S. EPA regulations, among others may apply to its projects: "Control of Air Pollution from Motor Vehicles and Motor Vehicle Engines," 40 C.F.R. Part 85; "Control of Air Pollution from New and In-Use Motor Vehicles and New and In-Use Motor Vehicle Engines: Certification and Test Procedures," 40 C.F.R. Part 86; and "Fuel Economy of Motor Vehicles," 40 C.F.R. Part 600.

2. The successful bidder agrees to report and require each third-party contractor and subcontractor at any tier to report any violation of these requirements resulting from any project implementation activity of a third-party contractor, subrecipient, or itself to FTA and the appropriate U.S. EPA Regional Office.

C. Clean Water.

1. The successful bidder shall 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.

2. The successful bidder agrees to report and require each third-party contractor and subcontractor at any tier to report any violation of these requirements resulting from any project implementation activity of a third-party contractor (at any tier), subcontractor (at any tier), or itself to FTA and the appropriate U.S. EPA Regional Office.

D. Use of Public Lands. The successful bidder agrees that no publicly owned land from a park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance as determined by the federal, state, or local officials having jurisdiction thereof, or any land from a historic site of national, state, or local significance may be used for the project unless the FTA makes the specific findings required by 49 U.S.C. § 303.

Mitigation of Adverse Environmental Effects. The successful bidder agrees that if the project should cause adverse environmental effects, the successful bidder will take all reasonable steps to minimize those effects in accordance with 49 U.S.C. § 5324(b), and all other applicable federal laws and regulations, specifically, the procedures of 23 C.F.R. Part 771 and 49 C.F.R. Part 622. The successful bidder agrees to undertake all environmental mitigation measures that may be identified as commitments in applicable environmental documents (such as environmental assessments, environmental impact statements, memoranda of agreement, and statements required by 49 U.S.C. § 303) and with any conditions the Federal Government has imposed in its finding of no significant impact or a record of decision. Those mitigation measures are incorporated by reference and made part of the Grant Agreement or Cooperative Agreement. As soon as the Federal Government and the successful bidder reach agreement on any deferred mitigation measures, those measures will then be incorporated by reference and made part of the Grant Agreement or Cooperative Agreement. The successful bidder agrees that any mitigation measures agreed upon may not be modified or withdrawn without the express written approval of the Federal Government.

VI. Energy Efficiency

As an FTA grantee, MTS is required to inform the Contractor of the following information:

The successful bidder agrees to comply with the mandatory energy efficiency standards and policies within the applicable state energy conservation plans issued in compliance with the Energy Policy and Conservation Act, 42 U.S.C. §§ 6321 et seq.

VII. Prohibited Interests

As an FTA grantee, MTS is required to inform the Contractor of the following information:

No, member, officer, or employee of a local public body, during his tenure or for one (1) year thereafter, shall have any interest, direct or indirect, in this contract or the proceeds thereof. No member of or delegate to the Congress of the United States shall be admitted to a share or part of this contract or to any benefit arising there from.

VIII. Debarment and Suspension

As an FTA grantee, MTS is required to inform the Contractor of the following information:

This contract is a covered transaction for purposes of 49 C.F.R. Part 29. As such, the Contractor is required to verify that the Contractor, its principals, as defined at 49 C.F.R. 29.995, or affiliates, as defined at 49 C.F.R. 29.905, are not excluded or disqualified as defined at 49 C.F.R. 29.940 and 29.945.

The Contractor is required to comply with 49 C.F.R. 29, Subpart C and must include the requirement to comply with 49 C.F.R. 29, Subpart C in any lower tier covered transaction it enters into.

By signing and submitting its bid or proposal, the Contractor certifies as follows:

The certification in this clause is a material representation of fact relied upon by MTS. If it is later determined that the Contractor knowingly rendered an erroneous certification, in addition to remedies available to MTS, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The Contractor agrees to comply with the requirements of 49 C.F.R. 29, Subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The Contractor further agrees to include a provision requiring such compliance in its lower tier covered transactions.

IX. Title VI Civil Rights Act of 1964

During the performance of this contract, the Contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Contractor"), agrees as follows:

A. Compliance with Regulations. The Contractor and any Subcontractors shall comply with the requirements of Title VI of the Civil Rights Act of 1964, 42 U.S.C. § 2000d; 49 U.S.C.§5332 and DOT Regulations, "Non-Discrimination in Federally-Assisted Programs of the Department of Transportation -- Effectuation of Title VI of the Civil Rights Act," 49 C.F.R. Part 21, and any implementing requirements FTA may issue, 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 this contract.

B. Nondiscrimination. The Contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, religion, color, sex, or age, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

C. Solicitations for Subcontractors, including Procurements of Materials and Equipment. In all solicitations either by competitive bidding or negotiations made by the Contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this contract and the regulations relative to nondiscrimination on the grounds of race, religion, color, sex, age, or national origin.

D. Information and Reports. The Contractor shall provide all information and reports required by the regulations or directive issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the FTA to be pertinent to ascertain compliance with such regulations, orders, and instructions. Where any information is required or a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to MTS or FTA, as appropriate, and shall set forth what efforts it has made to obtain the information.

E. Sanctions for Noncompliance. In the event of noncompliance, MTS shall impose such contract sanctions as it or FTA may determine to be appropriate, including, but not limited to:

- withholding of payments to the Contractor under the contract until the Contractor complies; and/or
- cancellation, termination, or suspension of the contract, in whole or in part.

F. Incorporation of Provisions. The Contractor shall include the provisions of Sections A through E of this section in every subcontract, including procurements of materials and leases of equipment, unless exempt by the regulations, or directives issued pursuant thereto. The Contractor shall take such action with respect to any subcontract or procurement as MTS or FTA may direct as a means of enforcing such provisions including sanctions for noncompliance provided; however, in the event a Contractor becomes involved, or is threatened with litigation with a subcontractor or supplier as a result of such direction, the Contractor may request MTS to enter into such litigation to protect the interests of MTS, and in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

X. Restrictions on Lobbying

A. MTS and Contractor shall not use federal assistance funds to support lobbying.

B. In accordance with 31 U.S.C. §1352 and U.S. DOT regulations, "New Restrictions on Lobbying," 49 C.F.R. Part 20, if the Project exceeds $100,000, FTA will not make any federal assistance available to the Contractor until FTA has: (a) received the Contractor's certification that the Contractor has not and will not use federal appropriated funds to pay any person or organization to influence or attempt to influence an officer or employee of any federal department or agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any federal grant, cooperative agreement, or any other federal award from which funding for the project is originally derived, consistent with 31 U.S.C.§1352, and (b) if applicable, the Contractor's statement disclosing any lobbying with nonfederal funds that has taken place in connection with obtaining any federal financing ultimately supporting the project.

C. The Contractor agrees to provide MTS a copy of each lobbying disclosure statement with the accompanying lobbying certification provided by a prospective third-party contractor at any tier or subrecipient at any tier. The form is included in this package for your use.

XI. Employee Protections

A. Construction Activities. For construction activities exceeding $2,000 performed in connection with the project, the successful bidder shall comply with the following construction employee protection requirements:

1. Davis-Bacon Act, as amended. The successful bidder shall comply and assure compliance with the requirements of 49 U.S.C. § 5333(a), the Davis-Bacon Act, 40 U.S.C. §§ 276a through 276a(7), and implementing U.S. Department of Labor (DOL) regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the Contract Work Hours and Safety Standards Act)," 29 C.F.R. Part 5. In addition to other requirements that may apply:

   a. The successful bidder shall pay wages to laborers and mechanics performing third party contract work at a rate not less than the minimum wages specified in a wage determination issued by the U.S. Secretary of Labor and not less frequently than once a week. The MTS agrees to furnish the bidder a copy of the current prevailing wage determination issued by the U.S. DOL for third-party contract work under the project upon request, and agrees to refrain from awarding any affected third-party contract until the third-party contractor agrees to the required wage determination.

   b. MTS shall report to FTA every suspected or reported violation of the Davis-Bacon Act or its federal implementing regulations.

2. Contract Work Hours and Safety Standards Act, as amended. The successful bidder shall comply and assures compliance with sections 102 and 107 of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. §§ 327 through 333; and implementing U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the Contract Work Hours and Safety Standards Act)," 29 C.F.R. Part 5; and U.S. DOL regulations, "Safety and Health Regulations for Construction," 29 C.F.R. Part 1926. In addition to other requirements that may apply:

a. In accordance with section 102 of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. §§ 327 through 332, the successful bidder shall assure that, for the project the wages of every mechanic and laborer will be computed on the basis of a standard work week of forty (40) hours, and that each worker shall be compensated for work exceeding the standard work week at a rate of not less than 1.5 times the basic rate of pay for all hours worked in excess of forty (40) hours in the work week. The successful bidder shall ensure that determinations pertaining to these requirements will be made in accordance with applicable U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the contract Work Hours and Safety Standards Act," 29 C.F.R. Part 5.

b. In accordance with section 107 of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. § 333, the successful bidder shall assure that no laborer or mechanic working on a construction contract shall be required to work in surroundings or under working conditions that are unsanitary, hazardous, or dangerous to his or her health and safety, as determined in accordance with U.S. DOL regulations, "Safety and Health Regulations for Construction,"29 C.F.R. Part 1926."

c. The requirements of this subsection do no apply to third-party contracts for the purchase of supplies, materials, or articles ordinarily available on the open market.

3. Copeland "Anti-Kickback" Act, as amended. The successful bidder shall comply with the Copeland "Anti-Kickback" Act, 18 U.S.C. § 874 and 40 U.S.C. § 276c, and U.S. DOL regulations, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in part by Loans or Grants from the United States," 29 C.F.R. Part 3. In addition to other requirements that may apply:

a. The successful bidder will not induce, by any means, any person employed in the construction, completion or repair of public work, to give up any part of the compensation to which that employee is otherwise entitled.

b. MTS shall report every suspected or reported violation of the Copeland "Anti-Kickback" Act or its federal implementing regulations to FTA.

B. Activities Not Involving Construction. For nonconstruction activities exceeding $2,500 performed in connection with the project, the successful bidder shall comply with the following employee protection requirements:

1. In accordance with Section 102 of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. §§ 327 through 332, the successful bidder shall assure that, for the project, the wages of every mechanic and laborer will be computed on the basis of a standard work week of forty (40) hours and that each worker will be compensated for work exceeding the standard work week at a rate of not less than 1.5 times the basic rate of pay for all hours worked in excess of forty (40) hours in the work week. The successful bidder agrees that determinations pertaining to these requirements will be made in accordance with the applicable U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the Contract Work Hours and Safety Standards Act)," 29 C.F.R. Part 5.

2. The requirements of this subsection do not apply to third-party contracts for the purchase of supplies, materials, or articles ordinary available on the open market.

C. State and Local Government Employees. The successful bidder shall ensure that the minimum wage and overtime provisions of the Fair Labor Standards Act, as amended, 29 U.S.C. §§ 206 and 207, apply to employees performing work involving commerce, including such state and local government employees as public transit authority employees, participating in the project. Consequently, each participant that is a state or local government agrees to comply with the Fair Labor Standards Act's minimum wage and overtime requirements for employees performing work in connection with the project.

D. Transit Employee Protective Arrangements. The successful bidder shall comply with the following requirements applicable to transit operations performed in connection with the project:

1. Standard Transit Employee Protective Arrangements. To the extent that transit operations are involved, the successful bidder shall carry out the project in compliance with terms and conditions determined by the Secretary of Labor to be fair and equitable to protect the interests of employees affected by the project and to meet the requirements of 49 U.S.C. § 5333(b), and U.S. guidelines at 29 C.F.R. Part 215, and any amendments thereto. These terms and conditions are identified in U.S. DOL's certification of transit employee protective arrangements to FTA, the date of which is included in the Grant Agreement or Cooperative Agreement. The successful bidder shall carry out the project in compliance with the conditions stated in that U.S. DOL certification. That U.S. DOL certification and any documents cited therein are incorporated by reference and made part of the Grant Agreement or Cooperative Agreement. The requirements of this Subsection, however, do not apply to formula assistance projects for the elderly and persons with disabilities

authorized by 49 U.S.C. § 5310(a)(2) or to formula assistance projects for nonurbanized areas authorized by 49 U.S.C. § 5311.

2. Transit Employee Protective Arrangements for Projects Authorized by 49 U.S.C. § 5310(a)(2) for the Elderly and Persons with Disabilities. If the Secretary of Transportation has determined or determines in the future that employee protective arrangements required by 49 U.S.C. § 5333(b) are necessary or appropriate for public body subrecipients under the project, the successful bidder shall carry out the project in compliance with the terms and conditions determined by the Secretary of Labor to meet the requirements of 49 U.S.C. § 5333(b), and U.S. DOL guidelines at 29 C.F.R. Part 215, and any amendments thereto. These terms and conditions are identified in U.S. DOL's certification of transit employee protective arrangements to FTA, the date of which is included in the Grant Agreement or Cooperative Agreement. The successful bidder shall carry out the Project in compliance with the conditions stated in that U.S. DOL certification. That U.S. DOL certification and any documents cited there in are incorporated by reference and made part of the Grant Agreement or Cooperative Agreement.

3. Transit Employee Protective Arrangement for Projects Authorized by 49 U.S.C. § 5311 in Nonurbanized Areas. The successful bidder shall comply with the terms and conditions of the Special Warranty for the Nonurbanized Area Program agreed to by the Secretaries of Transportation and Labor, dated May 31, 1979, and the procedures implemented by U.S. DOL or any revision thereto.

XII. Cargo Preference

If applicable, 46 U.S.C. 1241(b)(1) and 46 C.F.R. Part 381 which imposes U.S. cargo preference requirements on the shipment of foreign made goods shall apply to this procurement.

A. The Contractor shall utilize privately owned United States-flagged commercial vessels to ship at least fifty (50%) percent of the gross tonnage (competed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, materials, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flagged commercial vessels.

B. The Contractor shall furnish within twenty (20) days following the date of loading for shipments originating within the United States, or within thirty (30) working days following the date of loading for shipments originating outside United States, a legible copy of a rated, "onboard" commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (A) above to the Recipient (through the prime Contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, 400 Seventh Street, S.W., Washington, D.C., 20590, marked with appropriate identification of the project.

C. The Contractor shall insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

XIII. Reporting, Record Retention, Access

A. Reports. At a minimum, the Contractor agrees to provide MTS and FTA those reports required by U.S. DOT's grant management rules and any other reports MTS or the Federal Government may require.

B. Record Retention. The Contractor shall, during the course of the project and for three years thereafter, maintain intact and readily accessible all data, documents, reports, records, contracts, and supporting materials relating to the project as MTS or the Federal Government may require for the project.

C. Access to Records. Upon request, the Contractor shall permit the Secretary of Transportation and the Comptroller General of the United States, or their authorized representatives, to inspect all project work, materials, payrolls, and other data, and to audit the books, records, and accounts of the successful bidder and its contractors pertaining to the project. In accordance with 49 U.S.C. § 5325(a), the successful bidder shall require each third-party contractor whose contract award is not based on competitive bidding procedures as defined by the Secretary of Transportation to permit the Secretary of Transportation and the Comptroller General of the United States, or their duly authorized representatives, to inspect all work, materials, payrolls, and other data and records involving that third-party contract and to audit the books, records, and accounts involving that third-party contract as it affects the Project.

XIV. Seismic Safety

A. 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 C.F.R. 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.

XV. Federal Changes

A. The Contractor shall at all times comply with all applicable FTA regulations, policies, procedures, and directives, including without limitation those listed directly or by reference in the Agreement (Form FTA MA (6) dated October 1999) between Purchaser and FTA, as they may be amended or promulgated from time to time during the term of this contract. Contractor's failure to so comply shall constitute a material breach of this contract.

XVI. FTA Protest Requirements

As an FTA grantee, MTS is required to inform the Contractor of the following information:

A. Duty to Exhaust Local Procedures

Once the Contractor exhausts MTS's protest procedures, as described in applicable MTD Board Policies, the Contractor may request review from the FTA.

B. FTA Review of Protests

The FTA will only review protests regarding the alleged failure of the grantee to have written protest procedures or the grantee's alleged failure to follow such procedures.

Alleged violations on other grounds are under the jurisdiction of appropriate state or local administrative or judicial authorities.

Alleged violations of a specific federal requirement that provides an applicable complaint procedure shall be submitted and processed in accordance with that federal regulation. See Buy America Requirements, 49 C.F.R. Part 661 (Section 661.15); Participation by Minority Business Enterprise in Department of Transportation Programs, 49 C.F.R. Section 23.73.

The FTA will only review protests submitted by an interested party, as defined below.

C. Remedy

The FTA's remedy for a grantee's failure to have written protest procedures, or failure to follow such procedures, is limited to requiring the grantee to develop such procedures in reviewing the protest at issue, if the grantee desires the FTA's financial participation in the contract in question. In instances where a grantee has awarded to another bidder or offeror prior to the FTA's decision on the protest, the FTA may refuse to participate in funding the contract.

Definitions. For the purposes of this section, the following definitions apply:

Days – refers to working days of the Federal Government.

File or Submit – refers to the date of receipt by the FTA.

Interested Party – means an actual or prospective bidder or offeror whose direct economic interest would be affected by the award of the contract or by failure to award the contract.

Bid – include the term "offer" or "proposal" as used in the context of negotiated procurements.

D. Time for Filling

Protestors shall file a protest with the FTA no later than five (5) days after a final decision is rendered under the grantee's protest procedure. In instances where the protestor alleges that the grantee failed to make a final determination on the protest, protestors shall file a protest with the FTA no later than five (5) days after the protestor knew, or should have known, of the grantee's failure to render a final determination on the protest.

Grantees shall not award a contract for five (5) days following the decision on a bid protest, except in accordance with the provisions and limitations of subparagraph h. After five (5) days, the grantee shall confirm with the FTA that it has not received a protest on the contract in question.

E. Submission of Protest to FTA

Protests should be filed with the appropriate FTA regional office with a concurrent copy to the grantee.

The protest filed with the FTA shall include the name and address of the protestor; identify the grantee, project number, and the number of the contract solicitation; and contain a statement of the grounds for protest and any supporting documentation. This should detail the alleged failure to follow protest procedures, or the alleged failure to have procedures and be fully supported to the extent possible. A copy of the local protest filed with the grantee and a copy of the grantee's decision should be included, if any.

F. Grantee Response

The FTA shall notify the grantee in a timely manner of the receipt of a protest. The FTA shall instruct the grantee to notify the contractor of the protest if award has been made, or, if no award has been made, to notify all interested parties. The grantee shall notify all who receive such notice that they may communicate further directly with the FTA.

The grantee shall submit the following information no later than ten (10) days after receipt of notification by the FTA of the protest: a copy of the grantee's protest procedure; a description of the process followed concerning the protestor's protest; and any supporting documentation.

The grantee shall provide the protestor with a copy of the above submission.

G. Protestor Comments

The protestor must submit any comments on the grantee's submission no later than ten (10) days after the protestor's receipt of the grantee's submission.

H. Withholding of Award

When a protest has been filed in a timely manner with the grantee before award, the grantee shall not make an award prior to five (5) days after the resolution of the protest, or if a protest has been filed with the FTA, during the pendency of that protest, unless the grantee determines that the items to be procured are urgently required; delivery or performance will be unduly delayed by failure to make the award promptly; or failure to make prompt award will otherwise cause undue harm to the grantee or the Federal Government.

In the event that the grantee determines that the award is to be made during the five (5) day period following the local protest decision, or the pendency of a protest, the grantee shall notify the FTA prior to making such award. The FTA will not review the sufficiency of the grantee's determination to award during the pendency of a protest prior to the FTA's bid protest decision. The FTA reserves the right not to participate in the funding of any contract awarded during the pendency of a protest.

I. FTA Action

Upon receipt of the submissions, the FTA will either request further information or a conference among the parties or will render a decision on the protest.

XVII. Fly America Requirements

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 C.F.R. 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. The Contractor agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

XVIII. Recycled Products Requirements ***(APPLICABLE TO ALL CONTRACTS INVOLVING ITEMS DESIGNATED BY THE EPA, WHERE THE PROCURING AGENCY PURCHASES $10,000 OR MORE OF ONE OF THESE ITEMS IN A FISCAL YEAR, OR WHEN THE COST OF SUCH ITEMS PURCHASED DURING THE PREVIOUS FISCAL YEAR WAS $10,000)***

A. Recovered Materials - The Contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 C.F.R. Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 C.F.R. Part 247.

XIX. Privacy Act Requirements

The following requirements apply to the Contractor and its employees that administer any system of records on behalf of the Federal Government under any contract:

A. The Contractor agrees to comply with, and assures the compliance of its employees with, the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. § 552a. Among other things, the Contractor agrees to obtain the express consent of the Federal Government before the Contractor or its employees operate a system of records on behalf of the Federal Government. The Contractor understands that the requirements of the Privacy Act, including the civil and criminal penalties for violation of that Act, apply to those individuals involved, and that failure to comply with the terms of the Privacy Act may result in termination of the underlying contract.

B. The Contractor also agrees to include these requirements in each subcontract to administer any system of records on behalf of the Federal Government financed in whole or in part with Federal assistance provided by the FTA.

XX. Incorporation of Federal Transit Administration (FTA) Terms

The preceding provisions include, in part, certain Standard Terms and Conditions required by the Department of Transportation (DOT), whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1E, are hereby incorporated by reference. Notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any MTS requests which would cause MTS to be in violation of the FTA terms and conditions.

XXI. Patent and Rights in Data

A. Rights in Data - These following requirements apply to each contract involving experimental, developmental or research work:

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 the contract to which this Attachment has been added:

   a. Except for its own internal use, the Contractor may not publish or reproduce subject data in whole or in part, or in any manner or form, nor may the 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, nonexclusive, 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 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 Contractor performing experimental, developmental, or research work required by the underlying contract to which this Attachment is added agrees to permit FTA to make available to the public, either FTA's license in the copyright to any subject data developed in the course of that 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 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 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 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. Contractor shall not 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 Contractor and financed entirely without using Federal assistance provided by the Federal Government that has been incorporated into work required by the underlying contract to which this Attachment has been added is exempt from the requirements of subsections (b), (c), and (d) of this clause, provided that the Contractor identifies that data in writing at the time of delivery of the contract work.

g. Unless FTA 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 provided by FTA.

3. Unless the Federal Government later makes a contrary determination in writing, irrespective of the Contractor's status (i.e., a large business, small business, state government or state instrumentality, local government, nonprofit organization, institution of higher education, individual, etc.), Contractor agrees to take the necessary actions to provide, through FTA, those rights in that invention due the Federal Government as described in U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," 37 C.F.R. Part 401.

4. The Contractor also agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.

B. Patent Rights - The following requirements apply to each contract involving experimental, developmental, or research work:

1. General - If any invention, improvement, or discovery is conceived or first actually reduced to practice in the course of or under this Agreement, and that invention, improvement, or discovery is patentable under the laws of the United States of America or any foreign country, Contractor agrees to take actions necessary to provide immediate notice and a detailed report to the party at a higher tier until FTA is ultimately notified.

2. Unless the Federal Government later makes a contrary determination in writing, irrespective of the Contractor's status (a large business, small business, state government or state instrumentality, local government, nonprofit organization, institution of higher education, individual), the Contractor agree to take the necessary actions to provide, through FTA, those rights in that invention due the Federal Government as described in U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," 37 C.F.R. Part 401.

3. The Contractor also agrees to include the requirements of this clause in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.

XXII. Pre-award and Post delivery Audit Requirements

The Contractor agrees to comply with 49 U.S.C. § 5323(l) and FTA's implementing regulation at 49 C.F.R. Part 663 and to submit the following certifications:

A. Buy America Requirements: The Contractor shall complete and submit a declaration certifying either compliance or noncompliance with Buy America. If the Bidder certifies compliance with Buy America, it shall submit documentation which lists 1) component and subcomponent parts of the rolling stock to be purchased identified by manufacturer of the parts, their country of origin and costs; and 2) the location of the final assembly point for the rolling stock, including a description of the activities that will take place at the final assembly point and the cost of final assembly.

B. Solicitation Specification Requirements: The Contractor shall submit evidence that it will be capable of meeting the bid specifications.

C. Federal Motor Vehicle Safety Standards (FMVSS): The 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.

XXIII. Bus Testing Requirements

The Contractor agrees to comply with 49 U.S.C. A 5323(c) and FTA's implementing regulation at 49 C.F.R. Part 665 and shall perform the following:

A. A manufacturer of a new bus model or a bus produced with a major change in components or configuration shall provide a copy of the final test report to MTS at a point in the procurement process specified by MTS which will be prior to MTS's final acceptance of the first vehicle.

B. A manufacturer who releases a report under paragraph 1 above shall provide notice to the operator of the testing facility that the report is available to the public.

C. If the manufacturer represents that the vehicle was previously tested, the vehicle being sold should have the identical configuration and major components as the vehicle in the test report, which must be provided to the recipient prior to recipient's final acceptance of the first vehicle. If the configuration or components are not identical, the manufacturer shall provide a description of the change and the manufacturer's basis for concluding that it is not a major change requiring additional testing.

D. If the manufacturer represents that the vehicle is "grandfathered" (has been used in mass transit service in the United States before October 1, 1988, and is currently being produced without a major change in configuration or components), the manufacturer shall provide the name and address of the recipient of such a vehicle and the details of that vehicle's configuration and major components.

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3/13/07 (REVISED)

Section 11: Buy America Certificate
Additional Information for Buy America Certificate - Alternative B
Subcontractor's Statement of Eligibility
Public Contract Code Section 10162 Questionnaire/Statement of Eligibility
Noncollusion Affidavit
Certification of Restrictions on Lobbying
Disclosure of Lobbying Activities
Disclosure of Lobbying Activities Continuation Sheet
Instructions for Completion of SF-LLL Disclosure of Lobbying Activities
Request for Pre-Offer Change or Approved Equal
Form for Proposal Deviation
Proposer Service and Parts Support Data
Debarment and Suspension Certification (Lower Tier Covered Transaction)
Certificate of Compliance with MTS Equal Opportunity Programs and DBE Contractor Information Form
Certificate of Compliance with Bus Testing Requirement Form
Party Disclosure Form / Party Disclosure Form MTS and Its Affiliated Agencies/MTS and Affiliated Agencies
Acknowledgment of Addenda
Safety Rules

SECTION 10

10.0 REQUIRED INSURANCE FORM – SAMPLE

A technical deviation has been accepted that affects this section. Refer to MTS Response to Communications & Requests, Request #397 for additional information.

ACORD

10-1-03

PRODUCER

ABC Insurance Company
1111 Alpha Street
San Francisco, CA 94119

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICAT HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND O ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW

INSURED

Perfect World Contracting
123 Main Street
San Diego, CA 92101

COMPANIES AFFORDING COVERAGE

COMPANY A: AAA Insurance Company

COMPANY B: American Fund Insurance Company

COMPANY C:

COMPANY D:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS MADE [X] OCCUR X OWNER'S & CONTRACTOR'S PROT	GL300123	7/01/03	7/01/04	GENERAL AGGREGATE PRODUCTS - COMP/OP AGG $1,000,000 PERSONAL & ADV INJURY $1,000,000 EACH OCCURRENCE $1,000,000 FIRE DAMAGE (Any one fire) $1,000,000 MED EXP (Any one person) $ 100,000
A	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS HIRED AUTOS NON-OWNED AUTOS	AL300234	7/01/03	7/01/04	COMBINED SINGLE LIMIT $1,000,000 BODILY INJURY (Per person) $ BODILY INJURY (Per accident) $ PROPERTY DAMAGE $
	GARAGE LIABILITY ANY AUTO				AUTO ONLY - EA ACCIDENT $ OTHER THAN AUTO ONLY: EACH ACCIDENT $ AGGREGATE $
	EXCESS LIABILITY UMBRELLA FORM OTHER THAN UMBRELLA FORM				EACH OCCURRENCE $ AGGREGATE $
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY THE PROPRIETOR/ PARTNERS/EXECUTIVE OFFICERS ARE: EXCL / INCL	WC300345	7/01/03	7/01/04	STATUTORY / OTH EL EACH ACCIDENT EL DISEASE - POLICY LIMIT $1,000,000 EL DISEASE - EA EMPLOYEE $1,000,000
	OTHER				

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

MTD Doc. No. G1001.0-03; General Engineering Services

CERTIFICATE HOLDER

San Diego Metropolitan Transit System
1255 Imperial Avenue, Ste. 1000
San Diego, CA 92101

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT

AUTHORIZED REPRESENTATIVE

ACORD 25-S (7/97) © ACORD CORPORATION 1

SAMPLE

POLICY NUMBER: GL300123 COMMERCIAL GENERAL LIABILITY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

*** ADDITIONAL INSURED** -DESIGNATED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART.

NAME OF PERSON OR ORGANIZATION: *

[redacted]

SAMPLE

SECTION 11

11.0 REQUIRED FORMS – ALL OF THESE FORMS MUST BE PROPERLY EXECUTED AND RETURNED WITH YOUR PROPOSAL – YOU MAY RETAIN OTHER PAGES FOR YOUR RECORDS

- Buy America Certificate & Additional Information for Buy America Certificate Alternative B
- Subcontractor's Statement of Eligibility
- Public Contract Code Section 10162 Questionnaire / State of Eligibility
- Noncollusion Affidavit
- Certification of Restrictions of Lobbying
- Disclosure of Lobbying Activities
- Disclosure of Lobbying Activities Continuation Sheet & Instructions for Completion of SF-LLL Disclosure of Lobbying Activities
- Request for Pre-Offer Change or Approved Equal
- DBE Approval Certifications Form
- Proposer Service and Parts Support Data
- Debarment and Suspension Certification (Lower Tier Covered Transaction)
- Certificate of Compliance with MTS Equal Opportunity Programs and DBE Contractor Information Form
- Certificate of Compliance with Bus Testing Requirement Form
- Party Disclosure Form - Information Sheet – MTS and Affiliated Agencies
- Transit Vehicle Manufacturers (TVM) DBE Approval Certification
- Addenda Acknowledgement Form
- Safety Rules

SAN DIEGO METROPOLITAN TRANSIT SYSTEM

BUY AMERICA CERTIFICATE

(Buses other Rolling Stock including Train Control, Communication and Traction Power Equipment & Products Associated Equipment)

ALTERNATIVE A

A. Certificate of Compliance with Section 165(b)(3).

The Bidder hereby certifies that it will comply with the requirements of Section 165(b)(3) of the Surface Transportation Assistance Act of 1982, and the applicable Regulations in 49 C.F.R. Part 661.11.

DATE: _____

SIGNATURE: _____

TYPE/PRINT NAME: _____

TITLE: _____

ALTERNATIVE B

B. Certificate for Non-Compliance with Section 165(b)(3).

The Bidder hereby certifies that it cannot comply with the requirements of Section 165(b)(3) of the Surface Transportation Assistance Act of 1982, but it any qualify for an exception to the requirements pursuant to Section 165(b)(2) or (b)(4) of the Surface Transportation Assistance Act and Regulations in 49 C.F.R. Part 661.7.

DATE: _____

SIGNATURE: _____

TYPE/PRINT NAME: _____

TITLE: _____

NOTE: FILL OUT SECTOIN A *OR* B OF THIS FORM

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9/6/03

RETURN THIS FORM WITH YOUR BID
RETAIN OTHER PAGES FOR YOUR RECORDS

ADDITIONAL INFORMATION FOR BUY AMERICA CERTIFICATE - ALTERNATIVE B

The Bidder hereby certifies that it cannot comply with the requirements of Section 165(a) of the Surface Transportation Assistance Act of 1982, but it may qualify for an exception to the requirement pursuant to Section 165(b) of the Surface Transportation Assistance Act and regulations in 49 C.F.R. 661.7.

Item No.	Description	Type of Waiver Requested by No. (1)	Indicate Rolling Stock or Nonrolling Stock	Description of Foreign Components of Item	Unit Procurement Cost of Foreign Components

Name of Contractor:_____

Signature of Contractor:_____ Date:_____

Sign Here

Notes: (1) For "Type of Waiver Requested," See Buy America, Section III. List A,B,C or E.
(2) Bidder must complete either Alternative A or B, Buy America Certificate.

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RETURN THIS FORM WITH YOUR PROPOSAL
RETAIN OTHER PAGES FOR YOUR RECORDS

SAN DIEGO METROPOLITAN TRANSIT SYSTEM

SUBCONTRACTOR'S STATEMENT OF ELIGIBILITY

_____ certifies that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in any federal project by any federal department or agency.

Where the Subcontractor is unable to certify any of the statements in the certification, such Subcontractor shall attach an explanation with this form.

The Subcontractor certifies or affirms the truthfulness and accuracy of the contents of the statements submitted on or with this certification and understands that the provisions of 31 U.S.C. Section 3801, et. seq., are applicable.

_____
Name and Title of Official

Signature: _____ Date: _____

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RETURN THIS FORM WITH YOUR PROPOSAL
RETAIN OTHER PAGES FOR YOUR RECORDS

SAN DIEGO METROPOLITAN TRANSIT SYSTEM

PUBLIC CONTRACT CODE SECTION 10162 QUESTIONNAIRE

In accordance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the contractor, any officer of the contractor, or any employee of the contractor who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

YES ☐ NO ☐

If the answer is yes, explain the circumstances in the following space.

Name of Contractor: _____

Signature of Contractor:_____ Date: _____
(SIGN HERE)

STATEMENT OF ELIGIBILITY

_____hereby certifies that it

☐ is ☐ is not
(Must Check One)

included on the U.S. Comptroller General's Consolidated List of Persons or Firms Currently Debarred for Violations of Various Public Contracts.

Name of Contractor: _____

Signature of Contractor:_____ Date: _____
(SIGN HERE)

RETURN THIS FORM WITH YOUR PROPOSAL
RETAIN OTHER PAGES FOR YOUR RECORDS

SAN DIEGO METROPOLITAN TRANSIT SYSTEM

NONCOLLUSION AFFIDAVIT

(Title 23 United States Code Section 112 and
Public Contract Code Section 7106)

In accordance with Title 23, United States Code Section 112, and Public Contract Code 7106, the bidder declares that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not, directly or indirectly, induced or solicited any other bidder to put in a false or sham bid; and has not, directly or indirectly, colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

Name of Contractor: _____

Signature of Contractor: _____ Date: _____
(SIGN HERE)

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8/10/98

RETURN THIS FORM WITH YOUR PROPOSAL
RETAIN OTHER PAGES FOR YOUR RECORDS

SAN DIEGO METROPOLITAN TRANSIT SYSTEM

CERTIFICATION OF RESTRICTIONS ON LOBBYING

The CONTRACTOR hereby certifies that:

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

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

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

Executed this _____ day of _____, 20___.

Name of Contractor: _____

Signature of Contractor:_____ Date: _____
(SIGN HERE)

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8/10/98

RETURN THIS FORM WITH YOUR PROPOSAL
RETAIN OTHER PAGES FOR YOUR RECORDS

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

1. Type of Federal Action ☐ a. contract b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	2. Status of Federal Action ☐ a. bid/offer/application b. initial award c. post-award	3. Report Type: ☐ a. initial filing b. material change For Material Change Only: Year _____ quarter _____ date of last report _____
4. Name and Address of Reporting Entity: ☐ Prime ☐ Subawardee Tier _____, if known: Congressional District, *if known*:		5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:
6. Federal Department/Agency:		7. Federal Program Name/Description: CFDA Number, *if applicable*: _____
8. Federal Action Number, *if known*:		9. Award Amount, *if known*: $
10. a. Name and Address of Lobbying Entity (*if individual, last name, first name, MI*): (*attach Continuation Sheet(s) SF-LLL-A, if necessary*)		b. Individuals Performing Services (*including address if different from No. 10a*)
11. Amount of Payment (*check all that apply*): $ _____ ☐ actual ☐ planned		13. Type of Payment (*check all that apply*): ☐ a. retainer ☐ b. one-time fee ☐ c. commission ☐ d. contingent fee ☐ e. deferred ☐ other; specify: _____
12. Form of Payment (*check all that apply*): ☐ a. cash ☐ b. in-kind; specify: nature _____ value _____		
14. Brief Description of Services Performed or to be Performed and Date(s) of Service, including officer(s), employee(s), or Member(s) contacted, for Payment indicated in Item 11: (attach Continuation Sheet(s) SF-LLL-A if necessary)		
15. Continuation Sheet(s) SF-LLL-A attached: ☐ Yes ☐ No		
16. Information requested through this form is authorized by title 31 U.S.C., Section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.		Signature: _____ Print Name: _____ Title: _____ Telephone No. _____ Date: _____
Federal Use Only:		Authorized for Local Reproduction Standard Form - LLL

PSmith/BF-DISCLO.DOC - 8/10/98

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DISCLOSURE OF LOBBYING ACTIVITIES
CONTINUATION SHEET

Reporting Entity: _____ Page _____ of _____

PSmith/BF-CONTINUATION - 8/10/98

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INSTRUCTIONS FOR COMPLETION OF SF-LLL DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime federal recipient, at the initiation or receipt of a covered federal action, or a material change to a previous filing, pursuant to Title 31, U.S.C. Section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with a covered federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered federal action.

2. Identify the status of the covered federal action.

3. Identify the appropriate classification of this report. If this is a follow-up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered federal action.

4. Enter the full name, address, city, state, and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the first tier. Subawards include but are not limited to subcontracts, subgrants, and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, state, and zip code of the prime federal recipient. Include Congressional District, if known.

6. Enter the name of the federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the federal program name or description for the covered federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate federal identifying number available for the federal action identified in item 1 (e.g., Request for Proposal (RFP) number, Invitation for Bid (IFB) number, grant announcement number, the contract grant or loan award number, or the application/proposal control number assigned by the federal agency). Include prefixes, e.g., "RFP-DE-90-001."

9. For a covered federal action where there has been an award or loan commitment by the federal agency, enter the federal amount of the award/loan commitment for the prime entity identified in items 4 or 5.

10. A. Enter the full name, address, city, state, and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered federal action.

    B. Enter the full names of the individual(s) performing services, and include full address if different from 10A. Enter last name, first name, middle initial (MI).

11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.

12. Check the appropriate box(es). Check all boxes that apply. If payment is made through in-kind contribution, specify the nature and value of the in-kind payment.

13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.

14. Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in actual contact with federal officials. Identify the federal official(s) or employee(s) contacted or the officer(s), employee(s), or member(s) of Congress that were contacted.

15. Check whether or not a SF-LLL-A Continuation Sheet(s) is attached.

16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, D.C. 20503.

PSmith/BF-INSTRUCTIONS.DOC - 8/10/98

SAN DIEGO METROPOLITAN TRANSIT SYSTEM

REQUEST FOR PRE-OFFER CHANGE OR APPROVED EQUAL

This form must be used for requested clarifications, changes, substitutes or approval of items equal to items specified with a brand name, and must be submitted as far in advance of the Due Date as specified in "Proposer Communications and Requests" (Section 1.4).

Request #:_____ Proposer:_____

Solicitation Ref:_____ Page:_____ Section:_____

Questions/Clarification or Approved Equal:

_____

_____

_____

_____

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MTS:_____

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SAN DIEGO METROPOLITAN TRANSIT SYSTEM

DBE APPROVAL CERTIFICATIONS

I hereby certify that the Offeror has complied with the requirements of 49 C.F.R. 23.67, Participation by Disadvantaged Business Enterprises in DOT Programs, and that its goals have not been disapproved by the Federal Transit Administration.

Signature of the Offeror's Authorized Official:_____

Name & Title of the Offeror's Authorized Official:_____

Date:_____

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SAN DIEGO METROPOLITAN TRANSIT SYSTEM

PROPOSER SERVICE AND PARTS SUPPORT DATA

Proposer: _____

Location of nearest Technical Service Representative to MTS

Name:_____

Address:_____

Telephone:_____

Proposer to describe technical services readily available from said representative.

Location of nearest Parts Distribution Center to MTS

Name:_____

Address:_____

Telephone:_____

Proposer shall describe the extent of parts available at said center.

Policy for Delivery of Parts and Components to be Purchased for Service and Maintenance

Regular Method of Shipment:_____

_____

Cost to MTS:_____

FOB Point: _____

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SAN DIEGO METROPOLITAN TRANSIT SYSTEM

DEBARMENT AND SUSPENSION CERTIFICATION
(LOWER TIER COVERED TRANSACTION)

The prospective lower tier participant (Proposer) certifies, by submission of this Offer, that neither it nor its "principals" as defined at 49 C.F.R. § 29.105(p) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or MTS.

If the prospective lower tier participant (Proposer) is unable to certify to the statement above, it shall attach an explanation, and indicate that it has done so, by placing an "X" in the following space _____.

THE BIDDER OR PROPOSER, _____, CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF EACH STATEMENT OF ITS CERTIFICATION AND EXPLANATION, IF ANY. IN ADDITION, THE BIDDER OR PROPOSER UNDERSTANDS AND AGREES THAT THE PROVISIONS OF 31 U.S.C. §§ 3801 ET SEQ. APPLY TO THIS CERTIFICATION AND EXPLANATION, IF ANY.

Signature of the Bidder or Proposer's Authorized Official

_____

Name and Title of the Bidder or Proposer's Authorized Official

_____

Date _____

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SAN DIEGO METROPOLITAN TRANSIT SYSTEM

CERTIFICATE OF COMPLIANCE
WITH MTS EQUAL OPPORTUNITY PROGRAMS AND DBE CONTRACTOR INFORMATION FORM

I hereby certify that, in performing under contract(s) or purchase order(s) awarded by the San Diego Metropolitan Transit System (MTS), I will comply with the provisions of MTS Equal Employment Opportunity Program, and rules and regulations adopted pursuant thereto, Title VI of the Civil Rights Act of 1964, the California Fair Employment Practices Act, and any other applicable federal and state laws and regulations relating to equal employment opportunity, including laws and regulations hereinafter enacted.

DBE subcontractor participants are listed below, the successful Proposer must execute and return this form even if no DBE participation will be reported:

Company Name and Address	Description of Work	Dollar Amount

If 100% of item is not to be performed or furnished by DBE, describe exact portion of item to be performed or furnished by DBE. I agree to make a good faith effort to meet the goals of this plan as part of my contractual obligations to MTS.

Date: _____ **Firm**: _____

By: _____

Title: _____

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SAN DIEGO METROPOLITAN TRANSIT SYSTEM

CERTIFICATE OF COMPLIANCE WITH BUS TESTING REQUIREMENT FORM

The undersigned certifies that the vehicle offered in this procurement complies and will, when delivered, comply with 49 U.S.C. § 5323© and FTA's implementing regulation at 49 C.F.R. Part 665 according to the indicated one of the following three alternatives.

(Mark one (1) **and only** one of the three blank spaces with an **"X"**)

1.____ The buses offered herewith have been tested in accordance with 49 C.F.R. Part 665 on _____(date). The vehicles being sold should have the identical configuration and major components as the vehicle in the test report, which must be submitted with this Offer. If the configuration or components are not identical, the manufacturer shall provide with its Offer a description of the change and the manufacturer's basis for concluding that it is not a major change requiring additional testing.

2.____ The manufacturer represents that the vehicle is "grandfathered" (has been used in mass transit service in the United States before October 1, 1988, and is currently being produced without a major change in configuration or components), and submits with this Offer the name and address of the recipient of such a vehicle and the details of that vehicle's configuration and major components.

3.____ The vehicle is a new model and will be tested and the results will be submitted to MTS prior to acceptance of the first bus.

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 C.F.R. Part 31. In addition, the undersigned understands that FTA may suspend or debar a manufacturer under the procedures in 49 C.F.R. Part 29.

Date: _____

Signature: _____

Company Name:_____

Title: _____

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SAN DIEGO METROPOLITAN TRANSIT SYSTEM

TRANSIT VEHICLE MANUFACTURERS (TVM)
DBE APPROVAL CERTIFICATION

I hereby certify that the Bidder has complied with the requirements of 49 C.F.R. 26.49, Participation by Disadvantaged Business Enterprises in DOT Program, and that our goals have not been disapproved by the Federal Transit Administration.

_____
Signature of the Bidder's Authorized Official

_____
Name and Title of the Bidder's Authorized Official

_____
Date

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SAN DIEGO METROPOLITAN TRANSIT SYSTEM

ACKNOWLEDGMENT OF ADDENDA
35'and 40' LOW FLOOR TRANSIT BUSES
MTS Doc. No. G1101.0-07

The following form shall be completed. Failure to acknowledge receipt of all addenda may cause the proposal to be considered non-responsive to the solicitation. Acknowledged receipt of each addendum must be clearly established and included with the Offer.

The undersigned acknowledges receipt of the following addenda to the documents:

FIRM NAME:	
ADDRESS:	
TELEPHONE:	

PRINTED NAME OF INDIVIDUAL RESPONSIBLE FOR PREPARATION OF THIS PROPOSAL:

TITLE:

ACKNOWLEDGMENT OF ADDENDA

Proposer acknowledges the receipt of the following Addenda:

1) Addendum No.:		Date:		5) Addendum No.:		Date:	
2) Addendum No.:		Date:		6) Addendum No.:		Date:	
3) Addendum No.:		Date:		7) Addendum No.:		Date:	
4) Addendum No.:		Date:					

Signature of Proposer:		Date:	

Sign Here

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SAFETY DEPARTMENT
STANDARD OPERATING PROCEDURES

FOR

CONTRACTORS SAFETY AND HEALTH REQUIREMENTS

(SAF 016-03)
January 2003

SAF 016-03

Purpose: To establish environmental, safety and health requirements for San Diego Transit Corporation's Contractors.

Background: SDTC is committed in providing and maintaining a safe work place, safe plant and equipment, and a safe and competent workforce as required by legislation and best industrial practice for our employees, customers, visitors, and general public.

To support this commitment, we require our Contractors to provide adequate leadership and safety training for their employees and require the same of their sub-Contractors.

Objectives: This SOP requires all SDTC Contractors to:

- Comply with the environmental, safety and health requirements of the contract as per FTA, OSHA, Cal OSHA, and San Diego Transit Corporation.
- Assign a competent person the responsibility for the implementation of the safety regulations, personal protective equipment usage and compliance with hazardous materials/environmental policies, and drug and alcohol program.
- Ensure that all Contractor employees and sub-Contractors are trained and educated in safety and support on-site Contractors on safe work and SDTC safety programs.
- Sign the SDTC Contractual Agreement with Outside Agencies (Safety Rules).

SDTC Representatives are required to:

- Pro-actively monitor the Contractors' workplace to identify all occupational health and safety hazards – Departmental/Safety representative.
- Safety and contract requirements compliance – Audit/Inspection conducted and documented (schedule and spot check) by Quality Assurance Department.

NOTE: Copies of both MTS Illness and Injury Prevention Program (IIPP) and the MTS Maintenance Department Code of Safe Practices are available in the Safety Department's office. MTS handles the Engineering/Construction site safety plans.

SAFETY RULES

MTS Contractual Agreement with Outside Agencies
Work on MTS Premises

A. Safety Rules

These safety rules apply specifically to Contractors, Contractor's employees, or sub-Contractors working on Metropolitan Transit System (MTS) property. Any loss or damage, including death, resulting from Contractors, Contractor's employees, or subcontractor's negligence shall hold MTS management and employees harmless from any such loss. No work shall be performed on MTS property without approval and proper permits, when required. Requirements:

1. Comply with Cal OSHA, state, local and MTS' safety, and environmental policies.
2. Observe and follow all posted facilities safety regulations.
3. Use the proper Personal Protective Equipment required for the job.
4. No illegal drugs or alcohol will be consumed on site or off the premises while working for MTS.

B. Use of Tools and Equipment (when required)

1. Required Tools and Equipment must be in good condition, safe for use and calibrated (if required).
2. Follow safe engineering work practices/procedures.
3. Wear the required personal protective equipment when using tools.

C. Machinery and Vehicles (when required)

1. Do not attempt to operate MTS machinery or equipment without special permission.
2. Only licensed operators may operate Forklift Trucks and other equipment on MTS occupied spaces.

D. Contractor Requirements

1. Valid Contractor's license number.

Date: _____ Authorized Representative: _____ Title:_____
Signature

Your signature implies that you have read and understand and agree to follow these safety requirements.

RETURN THIS FORM WITH YOUR PROPOSALS
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