

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**

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.

**6.92 COOLING SYSTEM**

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**

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**

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 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 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**

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 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****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.

#### **6.102 TRANSMISSION**

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 ( $\frac{1}{4}$  of its total application) when the throttle is completely released (zero throttle). Maximum retarder shall be achieved when brake pedal is depressed ( $\frac{2}{3}$  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**

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**

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**

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**

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**

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:

<u>SPEED (mph)</u>	<u>TIME (sec.)</u>
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.

**6.108 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**

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**

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**

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**

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  $\frac{3}{8}$ " &  $\frac{3}{8}$ ". Battery cables shall be supported in a way that does not allow cables to rest on tops of batteries while in the stowed position.

**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**

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**

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 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**

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**

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**

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**

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.

**6.126 CURB LIGHTS**

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.

**6.127 INTERIOR LIGHTS**

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**

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

An audible warning and light system will be provided for the driver that conforms to the following requirements:

- |                            |                      |                              |       |
|----------------------------|----------------------|------------------------------|-------|
|                            | <b><u>BUZZER</u></b> | <b><u>DASH INDICATOR</u></b> |       |
| 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 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 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**

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 "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**

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 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:

#### **6.139 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 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.

**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.

**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**

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**

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)**

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 Riconcorp 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**

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.

#### **6.154 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**

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**

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 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. 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.

#### **6.168 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**

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.

### **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.

**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.

<b>SECTION 7</b>
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**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 \_\_\_\_\_ 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.

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>
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.)

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>
002	HANDICAP/ACCESSIBILITY EQUIPMENT:	Each	1	\$ _____

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>
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.

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>
004	TRAINING :	Hours	728	\$ _____

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>
005	TRAINING MATERIALS AND MANUALS:	Lot	1	\$ _____

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>
006	WARRANTY COST PER BUS:	Each	1	\$ _____

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>
007	SPARE ENGINE:	Each	1	\$ _____

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>
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: \_\_\_\_\_

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

**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.

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>
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.)

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>
002	HANDICAP/ACCESSIBILITY EQUIPMENT:	Each	1	\$ _____

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>
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.

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>
004	TRAINING:	Hours	728	\$ _____

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>
005	TRAINING MATERIALS AND MANUALS:	Lot	1	\$ _____

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>
006	WARRANTY COST PER BUS:	Each	1	\$ _____

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>
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**

<b>SECTION 8</b>
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**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 16<sup>th</sup> 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 \$ \_\_\_\_\_.**

<b>SAN DIEGO METROPOLITAN TRANSIT SYSTEM</b>	<b>CONTRACTOR AUTHORIZATION</b>
--	---------------------------------

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) 5/22/07

## 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):	<u>\$1,000,000</u>
Automobile Liability:	<u>\$1,000,000</u>
Worker's Compensation Employer's Liability:	<u>\$1,000,000</u>
Additional Coverages (as indicated under Section B, Additional Coverages Required):	
<input type="checkbox"/> B (1) Builder's Risk:	<u>Replacement Cost</u>
<input type="checkbox"/> B (2) Railroad Protective	<u>\$</u>
<input type="checkbox"/> B (3) Professional Liability	<u>\$</u>
<input type="checkbox"/> B (4) Pollution Liability	<u>\$</u>
<input type="checkbox"/> B (5) Contractor Equipment	<u>Replacement Cost</u>
<input type="checkbox"/> B (6) Installation Floater	<u>Replacement Cost</u>
<input type="checkbox"/> B (7) Garage Keeper's Legal Liability	<u>\$1,000,000</u>
<input type="checkbox"/> B (8) Primary and Non-Contributory Insurance	<u>As Required</u>
<input type="checkbox"/> B (9) Crime Fidelity Insurance	<u>\$</u>

## 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

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**

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)  
5/22/07

<b>SECTION 9</b>
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**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 not 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 Filing

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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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





<b>SECTION 11</b>
-------------------

**11.0 REQUIRED FORMS – ALL OF THESE FORMS MUST BE PROPERLY EXICUTED 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 may 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 SECTION A OR B OF THIS FORM**

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9/6/03

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**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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**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)**

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**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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**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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**DISCLOSURE OF LOBBYING ACTIVITIES**

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

1. Type of Federal Action <input type="checkbox"/> a. contract <input type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	2. Status of Federal Action <input type="checkbox"/> a. bid/offer/application <input type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	3. Report Type: <input type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change  For Material Change Only: Year _____ quarter _____ date of last report _____
4. Name and Address of Reporting Entity: <input type="checkbox"/> Prime <input type="checkbox"/> 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):  \$ _____ <input type="checkbox"/> actual <input type="checkbox"/> planned	13. Type of Payment (check all that apply);  <input type="checkbox"/> a. retainer <input type="checkbox"/> b. one-time fee <input type="checkbox"/> c. commission <input type="checkbox"/> d. contingent fee <input type="checkbox"/> e. deferred <input type="checkbox"/> other; specify: _____	
12. Form of Payment (check all that apply): <input type="checkbox"/> a. cash  <input type="checkbox"/> 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: <input type="checkbox"/> Yes <input type="checkbox"/> 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	

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**DISCLOSURE OF LOBBYING ACTIVITIES**  
**CONTINUATION SHEET**

Reporting Entity: \_\_\_\_\_ Page \_\_\_\_\_ of \_\_\_\_\_

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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.

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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.

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**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** \_\_\_\_\_

**RETURN THIS FORM WITH YOUR BID**  
**RETAIN OTHER PAGES FOR YOUR RECORDS**

**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:

<b>FIRM NAME:</b>	
<b>ADDRESS:</b>	
<b>TELEPHONE:</b>	

PRINTED NAME OF INDIVIDUAL RESPONSIBLE FOR PREPARATION OF THIS PROPOSAL:

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TITLE:

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**ACKNOWLEDGMENT OF ADDENDA**

Proposer acknowledges the receipt of the following Addenda:

1) Addendum No.:		Date:		4) Addendum No.:		Date:	
2) Addendum No.:		Date:		5) Addendum No.:		Date:	
3) Addendum No.:		Date:		6) Addendum No.:		Date:	

<b>Signature of Proposer:</b>		<b>Date:</b>	
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**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.