

**STATE OF OKLAHOMA
BID SPECIFICATIONS
FOR
LOW FLOOR ADA TROLLEY**

1. General Description:

It is the intent of these specifications to set forth minimum standards for the procurement of a light transit vehicle that complies with Title 49 Code of Federal Regulations, part 38, subpart B, entitled "Americans with Disabilities Act (ADA) Accessibility Specifications for Buses, Vans and Systems". All dimensions and equipment shall comply with the standards as set forth within the 49 CFR. The vehicle shall be new, the most current production model available, and must be complete with manufacturer's standard equipment and accessories, fully serviced and ready for operation. The vehicle shall be equipped to meet all Federal Motor Vehicle Safety Standards and Procedures (FMVSSP) that apply. If these specifications contradict any listed in the Federal Regulations, they are superseded by those of the Federal Regulations

To take advantage of administrative and cost savings and to ensure that all federal requirements are met, this procurement is assignable to other agencies, organizations and Tribal Governments funded by the Federal Transit Administration.

NOTE:

Any Brand names and specifications mentioned within this document are for reference only. Bids will only be considered when brochures/specifications are included for each component provided with bid for evaluation.

2. Delivery:

Vehicle to be delivered at a maximum of 120 calendar days from the date a Purchase order is issued. Pre-delivery servicing and adjustments: prior to acceptance by the purchaser, the vendor shall service and adjust each vehicle for operation. This process shall include but not be limited to the following:

- The vehicle must have a full tank of fuel when delivered.
- Each bus shall be designed to facilitate the disassembly, reassembly, servicing or maintenance thereof by use of tools and items that are normal and available as commercial standard items. The body and structure shall be designed for ease of maintenance and repair.
- All parts added, as part of the modification process shall be new.
- Headlights properly aligned
- Engine Tuned
- All accessories properly adjusted

Low Floor ADA Trolley Specifications

- Electrical, braking and suspension systems inspected
- Both batteries Charged
- Front-end aligned, all wheels balanced, including spare
- All lubricants checked, and greased if needed
- Cooling system serviced with permanent type anti-freeze and summer coolant for minus 20 degrees F (-28.888C).
- Warranty papers and owner's guide
- Exterior and interior cleaned and washed.
- Odometer cannot exceed 3,000 miles at the time of delivery of completed buses to the purchasing agency. There will be a charge of one dollar (\$1.00) per mile for each vehicle with an odometer reading in excess of 3,000 miles payable to the purchasing agency at the time of delivery.
- Under no circumstances are tow vehicles to be attached to any buses.
- Each vehicle must be delivered to the agency submitting the P.O.

Copies of the all Certificate of Origins and signed invoices must be sent to the organization named on the purchase order before delivery is made and must be delivered with the vehicle: receipt of these after delivery is not acceptable

NOTE:

If these specifications contradict any listed in the Federal Regulations, they are superseded by those of the Federal Regulations.

3. No Prototypes:

Vehicle must be a current production Model type van that has been in Production for a minimum of one year.

4. Trolley Bus Technical Specifications:

The new trolley buses shall be a low floor configuration compatible with an urban transit service environment and conform as closely as possible to the following physical requirements:

Principal Dimensions

Length overall – excluding cowcatcher	34'
Body Width – excluding mirrors	99"
Height Overall	129"
Interior Headroom – over aisle	98"
Gross Vehicle Weight Rating	29,000 lbs.
Wheelbases	196" & 228"

Low Floor ADA Trolley Specifications

Rear Body Overhang	121”
First Step Height	15”
Kneeling	11”
Drop Floor Entrance with Kneeling	8”
Step Risers.....	n/a
Floor Height	15.5” max.
Aisle Width.....	22” min.
Clear Door Opening.....	42” min.
Passenger Capacities	28-40
Turning Radius.....	52 degree
Fuel Capacity	65 gallons

Physical Characteristics

The following brand names are for reference only.

HVAC	Mobile Climate Control RM35
Front/Rear Axle	Meritor
Wheels	Aluminum Durabrite
Tires	Michelin 225/70R22.5 to 305/85R22.5
ABS Brakes	WABCO
Moisture Ejector/Air Dryer	Graham White or WABCO
Engine	Cummins ISB
Transmission	Allison B300
Floor Covering	Altro or Gerflor
Sub Floor	Synthetic Composite
Stanchions/Handles/Grab Rails	Brass or Brushed Stainless
Door Control	Driver Controlled
Wheel Chair Lift/Ramp	Lift U18 or Ricon 621S Ramp
Seating	Tram with Oak or Mahogany Slats
Driver Seat	USSC 9100ALX3 or equal
Fire Suppression	Afex or equal
Security System	Safety Vision RR7000 or equal
Fare Collection	Genfare or Diamond D
Paint	Tri Color with Clearcoat
Bike Racks	Sportworks DL2 or DL3
Destination Signs	Luminator or equal
Passenger Counter	Trapeze or TSO
CAD/AVL System	Trapeze or TSO

The Manufacture shall provide detailed parts and maintenance manuals for trolley buses and subsystems as specified herein.

5. General:

These specifications cover requirements for Low Floor Trolley Buses which are to be used for urban transit service operations in the general environmental and climatic conditions prevailing throughout the geographical location service area of intended use. It is intended for the widest possible spectrum of passengers, youth, adult, elderly, and handicapped.

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

6. Conformity:

- a. All Manufacture's must conform to these specifications and the product they furnish shall be of first class quality and the workmanship shall be the best obtainable in various trades.
- b. The design of the body, chassis, and equipment the Manufacture furnishes shall be of the latest design and model so as to produce a vehicle of substantial and durable construction in all respects.
- c. No advantage shall be taken by the Manufacture in the omission of any part or detail which is required to make the trolley buses fully serviceable and durable operational vehicles in all respects even though such parts or detail are not mentioned in these specifications.
- d. All units or parts not specified shall be manufacturer's standard units. In all cases materials and dimensions must be furnished as specified, but if the term, "approved equal" is used.
- e. The vehicle and all related equipment provided under this Contract shall meet all applicable State and Federal laws, vehicle codes, regulations, and standards.

7. Responsibility:

- a. The Manufacture shall assume responsibility for all design and satisfactory construction and operability of the vehicle; furnishing and delivering all vehicles, materials, and accessories whether or not the same are manufactured by the Manufacture or purchased ready-made from and outside source.
- b. The Manufacture shall assume responsibility and all costs to deliver the trolley buses and related items to designated location(s).

- c. The cost of, lodging and coach air fare, associated with the pre-build conference at the Manufacture's facility shall be the responsibility of the Manufacture. For the purpose of pricing travel for up to four (4) representatives shall be considered.

8. Vehicle Description:

a. General Description

- It is the intent of this specification to describe the design requirements for Low Floor Trolley Bus vehicle capable of withstanding rigorous intensive daily transit service operations with a minimum of maintenance and repair time. The trolley bus shall exhibit maximum passenger appeal in appearance, comfort and safety, combined with the excellence in reliability operating characteristics, efficiency and economy of operation. It is understood that this trolley bus will have different external and internal features from other revenue service buses in fleet. These features shall include authentic cupola style roof interior and exterior, specialized lighting, vintage slat type passenger seating, brass fittings, alternative mirror arrangements, specialized chimes, operational trolley gong, and interior globe style lighting. Regardless of required or optional features, however, the trolley bus configuration shall include provisions for adequate component access and maintenance in accordance with these specifications.
- Trolley buses shall incorporate features and ergonomics essential for safe, fast efficient and comfortable operation by the operator, features that ensure excellent road and traffic visibility under all driving conditions, and adequate means for safe passenger movement. The trolley bus shall be made capable of easy maneuvering in normal and heavy traffic.
- The trolley bus shall achieve normal operation in the environmental conditions normally occurring in the area which located, in ambient temperatures ranging of 0°F to 105°F, at relative humidity between five percent (5%) and one hundred percent (100%), and a altitudes up to 200 feet above sea level.
- Trolley buses are too used in urban areas, but at the same time must be able to maintain speeds up to sixty-two (62) miles per hour (mph) for deadhead travel to/from bus depot facilities r for special service operations. Trolley buses shall be able to maintain a minimum of ten (10) mph on fifteen percent (15%) grade when loaded to Gross Vehicle Weight Rating (GVWR).
- Scheduled maintenance tasks shall be related and shall be grouped in maximum mileage intervals. Routine scheduled maintenance actions, such as filter replacement and adjustment, shall not be required of less than 6,000 miles, except for routine daily service performed during fueling operations. Higher levels of scheduled maintenance tasks shall occur at even multiples for lower level tasks.
- The trolley bus, at GVWR and under static conditions, shall not exhibit deformation or deflection that impairs operation of doors, windows or other

mechanical elements. Static conditions included the vehicle at rest with any wheel or dual set of wheels in a six-inch deep hole or with any one (1) tires or any dual set completely deflated.

- All Failures involving basic body, structure, axles and suspension are considered structurally related failures for purposes of this specification.
- The trolley bus shall be new and unused, of current production model, with the latest design features. The unit shall be delivered fully operational and ready for revenue service with all necessary equipment and accessories.
- The general overall low floor vehicle specifications and dimensions are generally described in the previous section.

b. Testing

- The vehicle provided shall be fully tested to assure compliance with the performance and safety requirements of these specifications. The Manufacture may be required to provide test results and /or certifications insuring compliance with the requirements. Certifications or written documentation outlining test procedures and results shall be prepared by a Professional Engineer and/or test laboratory certifying compliance with the requirements of the appropriate section of the technical specification.
- Manufacture may be required to demonstrate compliance with any of the performance requirements of the specifications. Minimum testing that shall be required shall include the following:
 - i. Cooling System Performance
 - ii. A/C Performance
 - iii. Acceleration
 - iv. Gradability
 - v. Internal Noise
 - vi. External Noise
 - vii. Passenger Door(s) Opening and Closing Speed
 - viii. Lighting Levels
 - ix. Turning Radius
 - x. Water Test

c. Internal Noise

- Maximum internal noise shall not exceed eighty (80) dBA in Sections c.i.ii., and c.iii., and no more than eighty-three (83) dBA in Section c.iv.. as described below. Sound levels within the trolley bus shall be measured with all doors and windows closed and all vehicle equipment operating. IF some equipment operates on a cyclic basis, the sound level shall be measured with all equipment functioning simultaneously to determine the worst case noise level.

- Measurements shall be made with the vehicle empty, except for the test personnel and equipment. Not more than three (3) persons shall occupy the vehicle during the measurements.
- Measurements shall be made at height of four feet (4') above the floor and directly above the center line of the seats at the following locations:
 - i. The operator's seat
 - ii. The foremost passenger seat at the centerline of the trolley bus;
 - iii. The seat nearest the center of the trolley bus and at the trolley bus centerline
 - iv. The rear-most seat at the centerline of the trolley bus
- Accelerate the trolley bus at full throttle from the standstill to automatic transmission shift speed. Gear or range must be selected so that terminating test speed is sixty-two (62) mph. Observe and record maximum sound level during this operating mode. The sound level recorded shall be the average of at least four (4) readings.
- Measurements shall be taken where there is no reflecting or absorbing surfaces to change the sounds emitting from the vehicle.

d. External Noise

- Airborne noise generated by the trolley bus and measured from either side shall not exceed 83 dBA under full power acceleration when operated at or below 35 mph at curb weight and just prior to transmission upshift. The maximum noise level generated by the trolley bus pulling away from a stop at full power shall not exceed 83 dBA. The trolley bus generated noise at curb idle shall not exceed 65 dBA. If noise contains an audible discrete frequency, a penalty of 5 dBA shall be added to the sound level measured. All noise readings shall be taken fifty feet (50') from the perpendicular to the centerline of the trolley bus with all accessories operating. Instrumentation, test sites and other general requirements shall be in accordance with the Society of Automotive Engineers (SAE) Standard J366. The pull-away test shall begin with the front bumper even with the microphone. The curb idle test shall be conducted with the rear bumper even with the microphone.

e. Crashworthiness

- The trolley bus body and roof structure shall withstand a static load equal to one hundred fifty percent (150%) of the curb weight evenly distributed on the roof with no more than a six inch (6") reduction in any interior dimension. Windows shall remain in place and shall not open under such a load.
- The trolley bus shall withstand a 25 mph impact by a 4,000 pound post-1973 American automobile at any point, excluding doorways, along either side of the trolley bus with no more than three inches (3") of permanent structural

deformation at seated passenger hip height. This impact shall not result in sharp edges or protrusions in the trolley bus interior.

- Exterior panels and their supporting members shall withstand a static load of 2,000 pounds applied perpendicular to the trolley bus anywhere by a pad no larger than five (5) square inches. This load shall not result in deformation that prevents installation of new exterior panes to restore the original appearance of the trolley bus.
- The trolley bus at GVWR and under static conditions, shall not exhibit deformation or deflection that impairs the operation of the doors, windows, or other mechanical elements. Static conditions include the vehicle at rest with any one (1) wheel or dual set of wheels on a six inch (6") curb or in a six inch (6") deep hole.
- All structure, body, and panel-bending mode frequencies, including vertical, lateral and torsional modes, shall be sufficiently removed from all primary excitation frequencies to minimize audible, visual, or sensible resonant vibrations during normal service.
- To protect passengers seated in the low floor area, the basic low floor trolley bus structure shall incorporate a substantial side impact barrier. The barrier shall include a steel plate, continuous between the front wheel arches and the rear suspension (except in the width of the exit door opening). The impact barrier shall be an integral welded part of the undercarriage portion of the trolley bus structure, and shall be angled such that vehicles impacting the trolley bus side will tend to subvert. To further increase both passenger safety and vehicle repair, robust welded structures are required between angled barrier and the trolley bus side skins. These shall be designed to dissipate collision energy.

f. Materials

- All Materials used in construction of the trolley bus and all its parts shall conform in all respects to the American Society of Testing Materials (ASTM), SAE, or similar association standards. Materials used shall be duplicated in manufacturer, design, and construction on each trolley bus model.
- Reinforced fiberglass and plastic materials shall be excluded from the basic body construction, except for replacement panels, doors, and front and rear end caps.
- All lumber shall be thoroughly kiln dried, free from knots, and checks, and shall be of clear straight grain, dressed on all sides.
- All painted sheets shall be thoroughly cleaned and coated on the outside according to Sikkens guidelines using DPU low Volatile Organic Compounds (VOC) protective paint, or approved equal, prior to assembly in the trolley bus.
- All joints shall be protected by application of zinc-chromate metallic compound, Butyl Tape Sealer, or approved equal, at assembly.
- Composite flooring material shall be of a transit grade with sealed waterproof edges.

- All bolts, nuts, washers and exposed linkage shall be stainless steel, zinc, cadmium plated or phosphate coated to prevent corrosion.
- All bolts, nuts and washers shall be domestic manufacture and SAE Grade 5 or better.
- To the greatest extent possible, low maintenance composite materials shall be substituted for natural materials, such as wood, provided that manmade materials meet or exceed the natural materials properties and can authentically maintain the nostalgic look of the trolley.

9. Corrosion/Undercoating:

- a. The vehicle shall resist corrosion from atmospheric conditions and road salts. It shall maintain structural integrity and maintain nearly original appearance throughout its service life. Materials exposed to the elements and all joints and connections of dissimilar metals (and remote from each other in the galvanic series), shall be corrosion-resistant and shall be protected from galvanic corrosion.
- b. The entire body frame assembly, access doors, fenders, cab, underbody, wheel housings, lower skirt panels (including closed-off body panel sections), and all welds shall be treated and rust –proofed with a commercial grade heavy-duty rust-proofing material. All metal body parts shall be given a thorough multi-stage anti-corrosion treatment. The product used shall be listed as a qualified product under Mil Spec C-62218, Mil Spec C-0083933AA (MR). Zinc chromate or zinc phosphate prime paint shall be applied to both aluminum and steel. Body panels that are aluminum or tin coated, etc., or treated in any other method or procedure currently accepted by the commercial vehicle industry, are acknowledged as meeting this requirement need no further treatment, except for finish prime/paint or undercoating where applicable. Representative samples shall withstand a 2week salt spray test in accordance with ASTM Procedure B-227 with no visual or structural detrimental effects to normally visible surfaces, and no significant structural degradation or weight loss of over one percent (1%) for other members or components. Understructure/frame, chassis, fenders, wheel housings, and lower skirt panels shall be completely undercoated with a black, silver, or light grey colored undercoating.
- c. Undercoating shall be composed of a non-volatile/non-flammable grit and abrasive free material, providing a homogenous formulation, MIL-TD specification grade undercoating material. Undercoating shall be applied to a uniform thickness throughout with no bare spots. Bidder shall indicate methods to be used in meeting this requirement.
- d. Items and components that shall not be undercoated include non-metallic fender and stepwells, engine, transmission, driveshaft(s) differential/axle housing, brakes, lube fittings, exhaust system, and power steering heat shields.

10. Undercarriage:

Both front and rear axles shall have the load rating from the gross loads equal to or greater than the trolley bus builder requires them to carry. The gross load shall include curb weight plus seated and standee passengers with the average weight of each passenger to be 150 pounds. Front and rear axles for the trolley bus shall have the highest GVWR capacity available. Front and rear hubs shall be of steel construction.

a. Front Axle

- Front axles shall be Meritor – Meritor heavy-duty standard axle design with proper wheel and axle geometry so that imperfect front axle operation will not be encountered in service.
- Front axle shall be rated at 16,000 pounds GVWR load of trolley bus design.
- The front axle shall be set back with a deep drop style axle and shall have a left and right inside wheel cut angle of 52 degree. The front axle Caster Angle shall be set in a position that automatically helps turn the front wheels and tires to a straight or center position after turning.

b. Rear Axle

- Rear axle shall be Meritor – Meritor with a minimum rated capacity compatible with the design GVWR. The rear axle shall be Meritor ARS -20 with a load capacity of 20,000 pounds.

c. Rear Axle Gear Ratio

- The differential gear ratio is subject to approval by the (Agency) Project Manager prior to the production after reviewing the specifications of the trolley bus.

d. Wheels and Tires

- The trolley bus shall be equipped with single front and dual rear wheels. Front wheels and tires shall be balanced and counter weighted where necessary. Aluminum wheels with “Dura-Brite” surface treatment, R22.5, stud piloted wheels, or approved equal shall be provided. One (1) spare wheel of each type shall be provided per trolley bus.
- All low floor trolley buses shall be capable of using standard size 255/70R22.5, 275/70R22.5, or equivalent mileage tires.

e. Air Suspension

- Trolley bus shall be equipped with an air-suspension system. Leveling valves, if used, shall be installed in such a manner that will prevent leveling valve roll over.
- Air bellows shall act as a flexible connection between body and axle to absorb and cushion road shocks.
- Metal air chambers, if used shall be guaranteed by the manufacturer for the life of the trolley bus. Methods of construction and the materials used shall be of such manufacture as to permit easy and convenient replacement of bellows. Bellows shall be mounted to provide easy replacement under trolley bus.
- Rubber axle stops shall be provided between the axle and frame on each side of the axles to prevent axle and/or frame damage in severe bounce condition and to allow operation of the trolley bus if one or more air bellows are deflated.
- The front suspension system shall be Arvin Meritor tower with air bellow air ride design emphasis to maximize ride comfort. The suspension system shall be rated at 16,000 pounds and include two (2) tuned shock absorbers.
- Neway ADL-SD series air suspension, 20,000 pounds with tuned shock absorbers consisting of integral transverse beam design providing stability and eliminates axle roll. The rear suspension system consists of two high volume air springs combined with a ping tank to maximize ride and comfort. The rear suspension will have an adjustable torque rod and track bar for easy alignment and to minimize vibration.

f. Steering System

- Power steering shall be Ross Model TAS65, TRW, or approved equal. Steering gear shall be an integral type.
- Steering effort and number of turns "lock-to-lock" shall be designed and coordinated to minimize driver fatigue. Steering forces and characteristics in the event of failure of the power boost shall enable the trolley bus to be safely driven in this condition.
- Steering mechanism shall be mounted so that all adjustments can be made without dismounting parts. Mounting of gear assembly shall be engineered to reduce road shock and vibration.
- Steering units shall have hex head filler and drain plugs.
 - i. Hydraulic lines shall be individually and rigidly supported to prevent chafing damage, fatigue failures, and tension strain on the lines and fittings.
 - ii. The hydraulic systems shall be configured and/or shielded so that failure of any flexible line shall not allow hydraulic fluid to spray or drain onto any component operable above the auto-ignition temperature of the fluid.
 - iii. A priority system shall prevent the loss of power steering during operation of the trolley bus if other devices are powered by the same hydraulic system.

- The drag link assembly shall have a horizontal socket for attachment at Pitman arm, and a vertical stud for attachment at steering knuckle arm. Both ends shall have internal springs and lubrication fittings. The assembly shall have plus or minus 0.50-inch length adjustment.
- Front axles tie rod ends shall be threaded into the tube for adjustment without removable. Lubrication fittings shall be provided on the non-serviceable end assemblies.
- The steering wheel shall be between eighteen inches (18") and twenty inches (20") in diameter and shall be black color plastic or synthetic resin construction with a metal core. It shall be provided with puller holes in the hub.
- Shall be adjustable tilt range of no less than 40 degrees.

11. Brakes:

a. General

- The vehicle's air brake system shall be equipped with both service and emergency brakes that conform to the Federal Motor Vehicle Safety Standards (FMVSS) 121 as applicable. An Anti-lock Brake System (ABS) operating in conjunction with the air brake system shall be standard with each trolley bus. Prior to delivery of the first trolley bus, the Manufacturer shall supply documentation certifying the air brake system conforms to FMVSS 121. If the Manufacturer has no documentation certifying that the vehicles furnished under this contract conforms to FMVSS 121, (Agency) will require the manufacturer to perform stopping tests on one (1) trolley bus at full GVWR and measure stopping distances, in accordance with FMVSS 121. The test shall be completed prior to delivery of any trolley buses to (Agency). If the test vehicle fails any portion of the testing, the vehicle will be re-tested after modifications until all tests are successfully completed.

b. Brake Chambers

- Brake chambers shall be equipped with manufacturer's standard diaphragm and spring. Brake system shall be balanced to provide safe stop operation.
- The air brakes shall be ABS with Front: Meritor 15 x 4 Q+ Rear: Meritor 16.5 x 7 Q+ Bendix AD-9 air dryer with electric heater. Using a Volumetric Air Spring to increase air volume in the air springs to soften ride. Integral Transverse (Anti Sway) beam shall be used to provide 85% of roll stability.
- Rigid bolt together equalizing beams shall be used to lighten and adjustable axle alignment will be provided at pivot connections on both sides. Cast Frame brackets shall be used as splicer plates between rails.

- Adjustable torque rod shall be used at pinion angle settings to minimize driveline vibrations. Adjustable track bar shall be used to position axle at exact lateral of the axle. Heavy Duty Fleet Guard Gas tuned shocks shall be installed.

c. Service Brakes

- Trolley buses shall be equipped with Cummins VG Turbo brake systems which conform to the requirements of all Federal regulations, designed so such conformance can be maintained throughout the normal adjustment cycle. A supplemental brake (transmission retarder) may also be provided. The supplemental braking shall not be used in meeting regulatory criteria. The braking system shall include service brakes, a parking brake and emergency brake.
- The driver's brake pedal shall control the service brake and the supplemental brake in a coordinated manner to give a total braking effort depending on the position of the pedal up to the maximum capability of the braking system. Braking forces shall be proportioned among the axles to assure balanced breaking and equalize lining life between axles.
- Brake lights shall be activated as soon as the brake pedal is depressed and when any auxiliary braking (transmission retarder) is applied.

d. Brake Interlock

- The primary service brake system shall incorporate a double check valve, pressure regulator, and a solenoid valve to provide a rear brake and throttle interlock while the rear door of the trolley bus is open. Release occurs when the rear door is closed and the Operator's control is deactivated. Additionally, the actuation must occur when kneeling and/or wheelchair lift is used in conjunction with the front door. The front door operation shall not be interlocked with the brake system.

e. Brake Hoses

- All brake hoses shall be installed in locations where the possibility of damage is minimized. Hoses shall be clamped and supported by the trolley bus structurer to minimize long unsupported hose lengths and to eliminate rubbing and/or chafing.

12. **Air System:**

a. Air Compressor

- Air compressor shall be a WABCO, or approved equal, sized by the bus manufacture for the air system requirements and duty cycle of the bus.

- The compressor shall be gear driven by the engine and shall have a minimum output of 14 CFM.
- The air compressor shall be lubricated and cooled from the vehicle engine. The air storage system shall consist of four (4) tanks with the combined capacity of 5,500 cubic inch minimum.
- Compressor shall be gear driven by the engine. The compressor shall be equipped with an inlet check valve to minimize the blow by of oil through the compressor.

b. Air Tanks

- Air reservoirs shall be of adequate capacity for supplying the air volume need of the trolley bus.
- There shall be low-air pressure switches located on the air tanks. They shall monitor the primary and secondary reservoir air pressure.
- There shall be dedicated bally type drain valves for each air tank mounted at a convenient location for everyday maintenance access.

c. Air Dryer

- The air system shall be equipped mounted in a location approved by the manufacturer.
- The air dryer shall be Bendix AD-9 with removable cartridge, vertically mounted, cooled and heated by heater elements. It shall have an automatic purge and drain cycle and be serviceable.

d. Brake Lines, Body Mounted

- All air lines shall meet the requirements of SAE type J844. The supply lines shall be 2807 stainless steel braid, Teflon inner core for heat resistance. Lines shall be securely mounted to frame to prevent chafing or wear. Clamps shall be of proper size. Lines shall be protected at clamps with heat resistant material.
- Rubber grommets shall be used at all points where air line s pass through bulkheads or any supports.
- All clamps, fittings, etc. must be easily accessible and installed in such a manner that they are easily removed and replaced.

e. Brake Lines at Wheels

- Flexible brake lines shall have nut and sleeve type fittings. They shall be of adequate length to prevent any strain, regardless of relative motion between brake and brake chamber, without allowing chafing or rubbing.

f. Interlock Valves, Door, Accelerator and Brake

- Door, accelerator, and rear brake interlock valve shall be mounted to minimize length of air lines.

g. Towing-Air Line Connector

- An airline connector (Schrader or approved equal) shall be installed on the front and rear end of the trolley bus.

h. Switch, Low Air Pressure

- The switches shall be connected in parallel and shall trigger red indicator “LOW AIR” light and an audible alarm when the air pressure of any reservoir is below recommended operating levels.

i. Kneeling

- A driver actuated kneeling device shall lower the curbside front of the bus during loading or unloading operations regardless of load to step up from street level not to exceed 10 inches measured at the longitudinal centerline of the front door.
- Brake and throttle interlock shall prevent movement when the bus is kneeled. The bus shall kneel and rise at a maximum rate of 1.25 inches per second at essentially a constant rate. After kneeling the bus shall rise within two (2) seconds to a height permitting the bus to resume service, when the interlocks release and shall rise to the correct operating height within seven (7) seconds.
- An indicator visible to the driver shall be illuminated during the kneeling operation and shall remain illuminated until the bus is raised to a height adequate for safe street travel. Visual and audible warning devices that operate with the kneeling system shall be included.
- One amber LED light shall be installed near the entrance door and flash instantaneously upon activation of kneeling system and remain operational until system is deactivated. The audible alarm shall activate instantaneously upon activation of the kneeling system and remain on only during the lowering portion of the kneeling cycle.

13. Propulsion System:

The power plant shall be arranged so that accessibility for all routine maintenance is assured. No special tools, other than dollies and hoists, shall be required to remove the power plant. Two (2) mechanics shall be able to remove, replace and prepare the engine and transmission assembly for service in less than 20 total combined man hours. The muffler, exhaust system, air cleaner, air compressor, starter, alternator, radiator, all accessories, and any other component requiring service or replacement shall also be easily removable independent of the engine and transmission removal.

a. Engine

- Trolley bus shall be rear mounted fully electronic powered by a Cummins ISB 6.7 liter 6 cylinder inline heavy-duty diesel engine, with a minimum 280 Boiler Horse Power (BHP), with 620 lb./ft. torque at 1600 rpm. The engine shall include a Phillips 750 watt/115 volt block heater.
- Power Plant shall be a complete unit; mountable and demountable unit installed in the "T" or inline configuration. The engine installation shall include motor mounts and related accessories that provide proper vibration isolation and control of engine movement in all axes to prevent premature wear and failure of engine accessories, drive belts, piping, hoses and related hardware pertain to diesel engine. Engine shall be designed for normal operation on Ultra Low Sulfur Diesel fuel.
- The engine installation shall contain the latest available specific provision for emission and sound control per State/Federal regulations for the year the trolley bus is delivered. The installation must meet the requirements as established under Sections 6.3 Internal Noise and 6.4 External Noise of these technical specifications.
- Fleet guard spin-on oil filter shall be mounted to the engine.
- A Spinner II, Model 76, transit by-pass filter shall be provided and mounted in an easily accessible area. Use of this system and the installation design shall be authorized by the engine manufacturer.
- The oil filler tube and oil dipstick shall be accessible through the engine compartment door. Both shall be readily accessible without the removal of belt guards for engine servicing.
- The engine shall meet all applicable Federal and State clean air standards. 29.1.2 The engine furnished, through its electronic control system shall allow unaided starting of the engine at temperatures down to 10 degrees F. The engine shall incorporate a heated intake warmer.
- The engine shall also include an internal warning and de-rate system with separate low coolant level light and buzzer.
- The engine shall include a high idle system intended to maintain battery charging under heavy demand, provide adequate engine cooling and maintain air-conditioning capacity when the vehicle is stationary. With transmission in

park/neutral, a driver controlled switch shall be capable of increasing engine idle to the OEM recommended rpm. The fast idle will automatically disengage when the vehicle is placed in forward, reverse gears or when the vehicle brakes are applied.

b. Engine Protection

- The engine shall be protected from failures by electronic module and sensors consisting of no less than “Low Coolant”, Low Oil Pressure, and “Oil Over Temperature”, Coolant Over-Temperature” will provide information to the control module regarding the engine’s condition. Engine idle shut down shall be set at fifteen (15) minutes.
- The Engine Control Module shall be equipped with a self-diagnostic system as well as engine system protection and engine performance diagnostics. A failure shall be retained by the control unit for evaluation by garage personnel by using a diagnostic reader.
- The engine Control Module (ECM) shall be remote mounted to allow easy access to service and diagnose.

c. Engine Throttle System

- Accelerator shall be compatible with transmission and engine. The throttle pedal shall be mounted so that it is equal to or higher than brake pedal.

d. Air Cleaner

- The air cleaner shall be a unit compatible with, and as recommended by the engine manufacturer. All filters shall be cartridge types that are easily accessible for replacement.
- The engine air intake duct shall be shaped so as to minimize water entrance into the air induction system and the element shall be easily replaceable. A passage shall be provided so that any water that does enter the system can be drained prior to entry into the air cleaner element.

e. Engine Compartment Lines

- Flexible lines (air, fuel, and oil) in the engine compartment shall be used with stainless steel reusable fittings. All lines shall be sufficiently secured so that there will be no abrasive movement.

f. Clamps

- All support clamps in the engine compartment and/or on the power module, which have direct contact with the wire, cable, harness hose or line, shall be stainless.

g. Insulation

- Engine side of the rear seat shall be sealed so as to prevent smoke and fumes from entering passenger area and shall be insulated against both heat and sound. Thermal insulation shall assure there will be a minimum 80°F temperature differential between the engine compartment and passenger area.

h. Engine Compartment

- There shall be a side, top and rear air intake grille to provide sufficient air flow to the engine area and shall be designed to depict a vintage look, using a woven wire section.
- The grille shall be finished to match the color of the body or painted in the standard black.
- The engine compartment shall be fully insulated with a foil faced sand barrier material. There shall be a firewall of 11 gauge steel between engine compartment and passenger compartment. There shall be sufficient lighting for servicing in the engine compartment with a switch located in the engine compartment.

i. Fuel System

- The fuel tank shall be a single stainless steel fuel tank with a minimum 65 gallon capacity. The tank shall be mounted with proper shielding for safety and corrosion resistance. Filler neck shall be located on the curb side of the trolley. Fuel tank will be equipped with bottom mounted fuel drain plug.
- The fuel tank shall be designed so as to not permit the spillage of any fuel, with the filler cap properly closed, when the floor of the trolley bus is at any angle from the horizontal through 22 degrees from horizontal in any direction for any period of time. This shall be accomplished with the fuel tank filled to capacity as defined by published capacity.
- Fittings on fuel and oil lines shall be SAE flared or inverted flare type. Fuel filter and lines shall be installed in such a manner as to avoid excessive heat and fire hazard. Restriction fittings, if applicable, shall be in the fuel return line and of proper size so as to maintain fuel pressure under all conditions.
- One (1) Fleet Guard, OptiGuard FS1020, or approved equal, remote mount fuel filter shall be provided in a location to be approved by (Agency) Project Manager.

- Underbody fuel lines shall be sized to meet the requirements of the engine manufacture.
- The engine fuel system shall have a RACOR 690p12 Fuel water separator with a spin on filter element with a 30 micron filter and see through bowl, heater and sensor light.

j. Exhaust System

- The exhaust muffler shall be a stainless or aluminized steel type muffler designed with proper acoustical qualities and tailored to the engine requirements and installation.
- The exhaust system shall meet all United States Environmental Protection Agency (USEPA) clean air standards in effect for the model year trolley bus offered.
- Exhaust system shall be constructed so that it will not cause back pressure in the engine or damage to the paint on the trolley bus, and shall be anchored as near the end of the exhaust line as possible. It shall be mounted so as to maintain the integrity of its design throughout the life of the trolley bus.
- Exhaust manifolds, muffler, and single tail pipe assemblies shall be tight and allow no emission of fumes or smoke other than from open end of tail pipe.
- Access to test port on muffler shall be provided.
- Exhaust tail pipes shall be constructed so that it complies with Federal Motor Vehicle Safety Standards (FMVSS) 108 pertaining to side marker and clearance lights. Exhaust shall be deflected to the left rear of the trolley bus at a minimum of sixteen inches (16") from ground level.
- When the vehicle is under full acceleration from a stopped condition, maximum allowable exterior decibel rating shall not exceed 80 dBA of noise at 50 feet from the vehicle.
- The muffler shall be constructed of aluminized steel type material in the design of the exhaust system

k. Transmission

- The transmission shall be an automatic electronically controlled type Allison B300 with push button control. The transmission shall have six forward speeds with close ratio coverage; sixth gear shall be an Override gear. Integral Torque Converter lock-up shall occur in gear speeds two through four to assure maximum power and fuel economy. The gear selector shall be dash mounted above the driver knee area.

- Transmission shall have a built-in oil pump, governor, and an external heat exchanger that utilizes water from the engine cooling system. The heat exchanger shall be located in an accident-free area.
- The installation design shall allow for separate removal of the transmission without removal of the engine. Engine support and mounts shall not be located on the transmission to allow for easy transmission removal.
- The transmission shall be cooled by water to oil cooler in the radiator end tank meeting all requirements of the transmission manufacture. Size and capacity ratings of the transmission shall be fully compatible with the engine furnished. A manufacture approved synthetic automatic transmission fluid shall be used.

1. Transmission Controls

- The transmission shall be governed by electronic controls, which provide basic transmission control function. The transmission electronic module shall be capable of communicating with the engine electronic module to maintain maximum efficiency.
- The gear selector shall be completely electronic compatible with the transmission and be located on the console.
- A back-up light switch shall be provided on the transmission to energize the back-up lights and back up alarm with the transmission in reverse.
- The system shall incorporate various sensors which feed information regarding the shift selection, oil temperature, pressure, etc.

m. Driveline

- Driveline and universal joints shall be heavy duty, capable of handling both maximum engine horsepower and net input torque received from the transmission. The driveline shaft shall have a protector guard to prevent the driveline from penetrating the floor or contacting the pavement in the event of shaft or u-joint failure.
- Lubrication fittings shall be provided for universal bearings.
- Drive lines and U-joints shall be properly sized addressing both the maximum horsepower and the Net input Torque received from the transmission.
- Pitch and angle of Drive Line assembly shall be as minimal as possible to maximize universal joint life. A safety drive line structural guard system shall be furnished designed to structurally prevent a section of drive line from either penetrating the floor structure or dropping to the roadway should a U-joint fail.

14. **Cooling System:**

Temperature of all operating fluids on the trolley bus shall be controlled by a water-based cooling system. The cooling system shall be sized to maintain fluids at safe, continuous operating temperatures during the most severe operations possible with the trolley bus loaded to GVWR and with ambient temperatures up to 110°F and relative humidity of ninety percent (90%). This pressure type cooling system shall not permit boiling or coolant loss during the operations described above. Engine thermostats shall be easily accessible for replacement. The engine cooling system shall be equipped with a properly sized coolant filter. All low points in the water-based cooling system shall be equipped with drain cocks. Air vent valves shall be fitted at high points in the cooling system, unless it can be demonstrated that the system is self-purging.

a. Radiator

- The radiator shall be of durable corrosion resistant construction. Radiator core shall be aluminum or copper dimple type, and clog resistant. Radiator piping shall be stainless steel or brass tubing where possible; rubber hoses shall be utilized only where necessary and shall be premium silicone rubber impervious to all trolley bus fluids.

b. Surge Tank Filler Neck and Cap

- The sealed cooling system shall be provided with a self-unloading valve to prevent extreme pressure from injuring the cooling system.

c. Water Pump

- Water pump shall have sufficient capacity to prevent any hot spots under all operating conditions.

d. Hose/Clamps

- Engine water and heater hoses shall be premium quality Armet or Flex Fab silicone hose. All hoses shall be protected from engine heat which may cause premature failure. All hose clamps shall have constant tension. Hose clamps shall be ½" inch wide minimum, stainless steel worm type, and socket tightened with collar.

e. Coolant

- The cooling system shall be designed to be filled with coolant capable of protecting the engine from freezing down to 0°F.

f. Water Filter

- If a water filter is used, a “Fleet guard” spin-on water filter (no pre-charged type) with brass shut-off valves both inlet and outlet, shall be installed in an easily accessible area.

g. Fan Drive System

- A thermostatically controlled fan shall be provided and shall be effectively power-driven only at engine temperature in excess of 180°F. The fan shall be mechanically belt driven.

h. Radiator

- The radiator shall be of heavy duty assembly with an aluminum core. The total cooling area shall be 1260 square inch side mounted. The cooling fan shall be adequately sized to keep the engine from overheating.
- The radiator water core and charge air cooler core shall be shock-mounted to both absorb and cushion road shock and vibration. These components shall be mounted in the rear of the chassis on street/left side of the trolley.
- Coolant/Anti-Freeze furnished shall be an Ethylene Glycol base type designed to protect the engine from freezing down to 20 degrees F.
- Silicone coolant hoses are required along with a rail mounted Fleet guard coolant filter.

15. Electrical:

The trolley bus shall be equipped with a dual voltage 24/12 V power distribution system adequately sized for all electrical loads on the trolley buses as specified, including air conditioning and wheel chair ramp.

a. Electrical System Description

- All wiring shall meet FMVSS. The electrical system shall be 12V, MUX modules, using relays to allow driver's console switches to operate at lower amperage.
- A wiring diagram shall be submitted that will match the wiring for each vehicle.
- All switches and wiring circuits shall be protected with resettable circuit breakers.
- All circuit breakers shall be labeled for identification and installed in the sealed weather proof, lockable, electrical panel on the exterior of the driver's side.
- All circuits shall have LED diagnostics for ease during troubleshooting.

- All switches shall be of heavy-duty transit design, completely environmentally sealed for protection against spills water etc. All wiring shall meet SAE standard requirements.
- All wiring shall be automotive stranded and shall be color-coded and labeled. All wiring shall be installed using quick disconnect harness junctions, Deutsch style using weather-proof connectors.
- There shall be no more than 10 wires per harness and include 2 extra wires per harness for accessories.
- All harnesses shall be secured at a maximum of two-foot intervals using rubber coated clamps to protect equipment from chafing.
- Any wiring through wheel well area shall be protected by routing through metal convoluted tubing and flex loom.
- All connectors are insulated; shrink-wrapped and soldered where necessary.
- All wiring shall be protected by circuit breakers and a 200 ANL fast acting fuse shall be installed for added protection.

b. Alternator and Regulator

- The alternator shall be Leece Neville 270Amp sized to supply the entire nighttime operating electrical load of the trolley bus while providing at least twenty percent (20%) of its current output for battery charging when the battery is fully discharged. The amp shall have an internal voltage regulator.

c. Battery

- The term battery means two (2) or more heavy duty, top quality lead acid battery units mounted side by side in battery compartment. The battery compartment shall be located in a separate compartment from the engine compartment.
- Pull out stainless steel battery trays shall be provided.
- The configuration for the battery is two (2) battery units size 8D, 12 volt. Batteries shall be stamped with the date of the manufacture. Batteries shall not be abused or quick charged before delivery. Batteries shall be new when the trolley bus is delivered.

d. Battery Terminals/Wiring/Protection

- The battery wiring shall be terminated with properly sized ring terminals. The batteries shall be top post terminals wired in parallel circuit. The cable shall be permanently marked with a "+" and a "-" at the battery end. Cables shall be extra flexible and routed in the battery box so as not to chafe or rub on the battery tray

and other components. Cables shall allow dull slide out of the tray. Cable ends shall be sealed to eliminate corrosion from battery acid and/or fumes. Cable ends shall be attached to the battery studs with non-corroding flat washers, spring washers, and brass nuts. Cable ends shall be coated with a corrosion inhibitor after being attached to the batteries.

- A circuit breaker capable of interrupting a major short circuit shall be supplied on the positive side of the batteries. The breaker shall be located near the batteries in an easily accessible enclosed area, sealed from water and battery fumes. The electrical main selector switch and a set shall be located in an easily accessible location in the engine compartment.
- An electrical main master switch shall be provided to positively disconnect the battery from the electrical loads when the trolley bus is not in use or in emergency situations. The switch shall be loaded in an outside compartment which requires no tool(s) for access. The switch shall be completely sealed in its own sub-compartment. The switch handle be non-removable. If the switch handle is removable it must be attached to a corrosion proof metal cable. Emergency flasher and radio power circuitry shall be independent of the main switch.

e. Voltage Drop

- There shall be no more than a three percent (3%) voltage cumulative drop on any circuit, measured from the initiating source to the appliance load positive and from the appliance load negative to the reference ground with the load fully operational.
- The initiating source for any 24 volt circuit is defined as the 24 volt output positive post of the series connected batteries.
- The initiating source for any 12 volt circuit is defined as the 12 volt output positive post of the battery equalizer/splitter.
- The reference ground is defined as the most negative post of the series connected batteries.

f. Starter

- The engine starter shall operate from normal trolley bus voltage and be sized to provide sufficient torque to turn the engine reliability under all hot and cold engine or ambient conditions. The starter shall be as recommended by the engine manufacturer.
- The starter solenoid switch shall be interlocked so that the engine can be started in neutral gear only with the transmission selector in neutral only. Starter will not operate when engine is running. The interlock shall be activated by fuel pressure or by other approved means. Other major electrical loads shall be disconnected while cranking.

g. Electrical Panel

- Circuit breakers shall be provided so sectionalize and protect all branch circuits of the electrical system of each trolley bus.
- To maximum practical extent, electrical distribution and control devices shall be grouped on an electrical panel arranged for ease of access, test, and replacement of components. The panel shall be large enough to avoid crowding of the components and leads. Component heat buildup shall not affect the components or mounting locations. There shall be a test plug receptacle for electronically diagnosing the engine using portable instruments. There shall be cooling vents installed on the electrical panel door.
- Electrical panel shall be located on exterior driver's side for ease of access. The electrical compartment shall have a double door configuration for a sealed enclosure to protect against moisture.
- A durable diagram shall be mounted, in the electrical panel, which identified the components and their function. Relays and circuit breakers shall be permanently labeled to correspond to this diagram. Switch controlled lights shall be provided to illuminate the main electrical panel.

h. Diagnostic/Multiplex System Electrical

- Each trolley bus shall be equipped with a diagnosis system I/O LED for ease in troubleshooting electrical and component failures.
- The multiplex I/O system shall have a main accessible port for reprogramming and/or new updates that may be available from the
- Manufacturer. Or the addition of optional component added at a later date.
- Positions shall include power/ground leads in overhead for Fleet watch or other maintenance or diagnostic features.
- Drivers LED display shall include safety features that will visually and audibly indicated when entrance doors are open and/or wheel chair lift is deployed and /or optional bike rack is deployed, bus kneeling and /or compartment doors are open.
- Drivers LED display shall have interlock override push button with entry level 1 security access to allow maintenance mechanics to have access to change perimeters such as interior lighting functions, kneeling times and back lighting.

i. Wiring

- All wiring, including cables, shall be stranded copper and adequate in size to carry electrical load. Each harness shall contain identified spare wires (10 percent, minimum one) and shall be installed with consideration of possible future need to

remove and replace it. All low voltage lighting shall run sufficiently cool so as to eliminate any damage to lamps, lenses, sockets, wiring, or surrounding areas. Electrical junction boxes shall have sealed covers and openings.

- Wiring shall be insulated and meet FMVSS requirements. Insulation shall be moisture proof and heat resistant. It shall be a design objective to route wiring and harnesses in area with no temperature build up. If wiring must be run in areas of heat buildup it will withstand without deterioration, for the life of the trolley bus the highest temperature in the area serviced. Engine compartment wiring shall be heat, oil and flame resistant.
- Wiring shall be protected from weather and mechanical injury. Cables shall be supported along their length and strain relieved near terminations so that connectors and terminals are not under stress. Wire and cable passing through holes in sheet metal, structural members, etc. shall be protected with a grommet. Wire and cable subject to flexing shall be extra flexible and shall be installed to allow for continual flexing without damage to the conductors or insulation. Wiring routed next to or bent over other materials shall be chafe protected.
- All wire terminations loops shall have a minimum of two inches (2") of excess wire for additional end terminal installation which will allow at least one (1) replacement of termination without disrupting the wiring harness. Wires shall not be spliced between terminations.
- All electronic components and boxes shall have quick disconnect plugs attached.
- The conductor identification shall be developed by the Manufacture to give an individual identifying designation to each wire for circuit tracing and renewal of equipment and shall be shown on all electrical diagrams. All junction panel terminals shall be numbered.
- All wiring shall be identified with wiring numbers printed on the insulation itself with no more than six inches (6") of space between the identifying printed numbers along the continuous run of wire. Numbers shall not be removable and be impervious to normal abrasion, oils, diesel, grease, antifreeze and water.
- All under coach looms, cable runs, connectors, terminations and harnesses shall be completely sealed against, dirt, water and road hazards. Under coach wiring shall be run in sealed flexible plastic conduit.
- All electrical connectors shall be replaceable. Engine and transmission harnesses shall have sealed, quick disconnect connectors to facilitate engine and transmission removal. All high current connection points shall be coated with conductive coating.

j. Towing Connector

- An Electrical receptacle shall be provided behind the front bumper of each trolley bus adjacent to the air connector to receive power for the illuminating the tail lights, stop lights and direction signals from a towing vehicle.
- The receptacle shall be a 7 wire receptacle assembly "Cole-Hersee" No. 12063. The pins shall be coated with corrosion resistant paste. The termination end of the receptacle shall be strain relived and sealed against water entry.

k. Radio Power Supply and Communications Cabling

- A separate electrical circuit, initiated at the batteries and terminating at the radio box shall be supplied. This circuit shall be independent of the electrical main switch, be capable of delivering 40 continuous amperes at 12 volts, and be protected at the source with an adequate circuit breaker. No other electrical equipment shall be attached to this circuit. It shall be connected and placed to minimize electrical noise, hash and transients.
- There shall be appropriate loom conduit for necessary radio accessories later installed of radio and control head.
- An enclosed radio box with hinged, lockable cover shall be installed above the driver's seat in the interior of the vehicle. The box shall be sized for a future (ACS) Advanced Communication Radio system and/or other ITS electronic equipment.
- There shall be three (3) coded Number 12 wires from behind the dash to this compartment wire to a terminal strip. One (1) wire shall be 12 volts at all times, one (1) wire shall be 12 volts switched to the master run switch, and one (1) wire shall have supply a constant ground.
- The Manufacture shall supply under mounting plate located in the overhead compartment along with 12 volt power/ground lead for optional radio equipment and roof mounted antenna.
- Manufacture shall supply mounting hole for future optional covert emergency alarm button in a convenient location to the driver.

l. Console Assembly and Instrument Panel

- There shall be a front instrument and side console panel layout convenient for driver
- Instrument panel shall be for heavy duty service with clear lettering and identification.

m. Door Electrical

- A door controller shall be lever type with lift/kneeling control buttons incorporated. These controls shall be linked via CAN control with the multiplex system.
- Locking and unlocking of doors shall be controlled by a door-controlled handle located on the driver's console. Door control handle, when in the "rear" position, shall energize a solenoid that unlocks the door handle.
- Door shall have safety solenoid locks to prevent doors from opening while in motion. Locks shall be linked via CAN with speed sensor for additional safety.
- Instrument panel shall include driver's display that will have external port for reprogramming multiplex system and troubleshooting.
- LED lamps mounted on the exterior mounted in the step well shining down and outward shall be illuminated when the door is open. Front and rear stepwell illumination lamps shall operate in the same manner.

n. Horn and Trolley Gong Bell

- A12 volt dual horn shall be installed and mounted so as to be protected from road splash. Control shall be push button, located in the center of the steering wheel.
- An electric bell shall be mounted on the top front of the vehicle for the driver to ring manually by a pull cord located to the left of the driver's seat.

o. Back Up Alarm

- An electrical back up alarm producing an intermittent sound or busser connected with backup LED lights shall be installed. It shall be loud enough to be heard when the engine is running.

p. Exterior Lighting

- All exterior lighting shall be 12V DC circuits in accordance with FMVSS 571.108.
 - i. (2)-Headlight assemblies shall be single high/low beam round sealed beam halogen lights and shall have a beauty ring of brass or chrome. (J1395).
 - ii. (2)-Amber turn signals shall be provided in the front section of the trolley, as turn, and flasher, (J589, J590b).
 - iii. (3)-Amber identification shall be centered on the top front of the trolley, (J592E)
 - iv. (2)-Amber identification lights shall be placed on each outer corner of the top front, (J592E).
 - v. A vintage style center headlight shall be installed in the center front of the trolley finished in either brass or chrome.

- vi. (3)-Red identification lights shall be centered on the top rear section of the trolley, (J592E).
- vii. (2)- Red Identification lights shall be placed on the top outer corner of the rear of the trolley (J592E).
- viii. (2)-Clear reverse lights shall be placed in the lower section of the rear of the trolley, (J593C).
- ix. (2)-Red stoplights shall be placed in the lower section of the rear of the trolley, (J1398).
- x. (2)-Red taillights shall be placed in the lower section of the rear of the trolley, (J585E).
- xi. (2)-Turn signal lights shall be placed in the lower section of the rear of the trolley, (J1395).
- xii. (1)-License plate light shall be placed in the lower section of the rear of the trolley above the license plate. (J587)
- xiii. (4)-Amber lights shall be placed on the sides of the trolley, (2) one each side of the top front corner, (2) one at each side of the lower front corner, (J592E).
- xiv. (4)-Red lights shall be placed on the sides of the trolley, (2) one each side of the lower rear corner, (2) one each side of the top rear corner, (J592E).
- xv. (2)-Amber middle turn signals shall be placed on the lower middle section on each side of the trolley.

q. Interior Lighting

- All interior lighting shall be adjustable PWM lights through multiplex system. Front and rear overhead interior lighting shall be controlled both from door open signal and operator's console. Front and rear entry ways shall be lit in accordance with FMVSS suitably mounted so that the entire stepwell and portion of the ground area immediately outside the trolley bus is illuminated. Overhead interior lighting shall provide general illumination in the passenger compartment. Careful consideration will be made when placing lighting to prevent windshield glare.
- All interior lighting shall meet FMVSS requirements. There shall be six (6) interior white, LED, shatterproof, 8" dome style, surface mounted fixtures throughout the roof area of the vehicle. The bases shall be brass or chrome finish. Separate switches shall operate the rear and front section of the passenger area.
- At the entry/exit there shall be an overhead courtesy light that will come on when the door is opened and remain on until the door is closed again. Each step well area shall have (2) step well lights with top covers to shield from glaring light, and one overhead light. The step well lights will automatically come on when the door is opened and remain on until the door is closed.

- Over the driver's area there shall be a separately controlled light for the driver's convenience. There shall be a separate switch controlling the driver's light.
- Hazard lights shall be installed on the trolley bus, (J1945, J1910).
- (2)-Step well lights shall be installed at each entry/exit doorway.
- (1)- flood type light shall be installed in the wheel chair door area

16. Body:

a. Construction: body and Understructure

- The basic body structure shall be an integral design. The structure shall be designed for maximum strength, reliability and durability.
- Body and understructure shall be adequately reinforced at all joints and points where stress configuration may occur so that the vehicle will carry the required loads and properly withstand road shocks.
- The entire trolley bus understructure, including the wheelhouses, shall be spray coated with rust inhibitor undercoating.
- All interior and exterior metal surfaces shall be cleaned and treated to prevent rust and /or corrosion. After welding in area where primer was previously applied, all joints shall be brushed to eliminate foreign matter and then the joint shall be cleaned to provide a good base for paint adhesion. Finally the joint shall be painted with red oxide primer.
- Aluminum panels shall be properly prepared and primed before final paint. All bolts, nuts, washers, clamps, clips, and similar parts shall be zinc or cadmium plated or phosphate coated to prevent corrosion.
- All material used in body and chassis, including cross member, posts and panels, shall be of the required strength for the purpose intended and shall be properly treated to resist corrosion. All joints exposed to weather shall be made tight against leakage.
- All wall sections are constructed of a combination of lower wall sections of 2" x 2" x 1/4" box tube and, 1 1/2" 16 gauge, box, clean coat, carbon steel tubing and 1 1/2" stainless steel tubing, electrically arc welded together in a specialized framing jig. The lower half of the wall construction shall be a load bearing monocot design to support the chassis load. Side, front and end fitting members shall be carried to the roofline and constructed to adequately carry the design loads and absorb impact and stress. This application creating a cage like structure that provides strength and durability preventing movement at all joints and stress points.
- The rear engine area shall be a mock porch design to simulate the vintage streetcar theme.

b. Construction: Chassis

- Understructure shall consist of structural stainless steel 3" x 6" box tube structure designed for maximum durability, reduced maintenance and weight incorporating a uni-body of the floor/chassis completely electric arc welding to create a monocoque cage like structure that is integrated with the side walls and roof.
- Conventional bolt construction shall be with Grade 8 (traceable) hardware, and shall only be used where necessary to allow for routine disassembly (e.g. the closing cross member shall be bolted to allow for engine remove at overhaul).
- Understructure at the trolley bus sides in the lowered floor area shall have a crash protection and must meet standards set forth in Federal Register Volume 47, No. 195, Section 2.1.2.10
- Understructure at the front and rear overhang (defined as the distance between axle centerline and bumpers) shall be sufficiently robust to permit towing and lifting without special rigging being required. The design shall have been verified by submission of those parts of the STRUAA (Altoona Test) which address towing and recovery.
- Out rigger supports are positioned in a grid pattern and placed strategically to provide strength and support to the overall structure preventing warping of the finished floor. The entire structure is welded from the floor/chassis to the walls and roof to provide strength, rigidity, and integrity to carry the ultimate loads and with stand road shock and vibration fatigue.
- Understructure shall provide protected pathways for hydraulic lines, heater piping, airlines, and electrical cabling. Stainless steel trough shall be used as protective conduit for wires and cables. Joints in lines, hoses, etc. shall be accessible for repairing.
- The floor structure is sealed and sheeted with 26 gauge galvanized sheeting providing a vapor barrier, using a composite sub flooring material that shall be waterproof and non-hygroscopic and resistant to mold growth as the base floor and attached to the framing using TEK screws. Each seam is then filled with body filler, and sanded smooth before installing the transit flooring making seams blend together.
- It shall be possible to safely jack up the bus, at curb weight, with a common 10 ton floor jack with or without special adapter, when a tire or dual set is completely flat and the bus is on a level hard surface, without crawling under any portion of the trolley. Jacking from a single point shall permit raising the bus sufficiently high to remove and reinstall a wheel and tire assembly. Jacking pads located on the axle or suspension near the wheels shall permit easy and safe jacking with the flat tire or dual set on a 6-inch high run up block not wider than a single tire. Jacking a

changing any one tire shall be completed by a 2M mechanic helper in less than 30 minutes from the time the bus is approached. The bus shall withstand such jacking at any one or any combination of wheel locations without permanent deformation or damage. Jacking pads shall be painted safety yellow for ease of identification.

c. Construction: Exterior Panels

- Body structure shall be aesthetically pleasing without protruding fasteners. Visible exterior fasteners shall be kept to an absolute minimum, except where used to accentuate a desirable aesthetic feature.
- Side panels shall be simple enough in shape to allow fabrication with no more tooling than a shear brake and edge roller. Ornamental items for the trolley bus shall be replaceable in case of damage.
- The wall sections are sealed with Sika Flex 221 at all joints and seams. The entire structure is washed with Prep Sol 330 and primed with an epoxy primer, then sheeted with 20 gauge galvanealed sheeting using Sika Flex 552, then riveted with stainless steel Magna-Lok fasteners to the framing where necessary throughout each panel.

d. Construction Hardware

- Fasteners shall be of non-corroding stainless steel material to prevent rust and corrosion. Trim pieces and fixtures installed shall be treated with ECK, an anti-electrolysis corrosion preventive material.

e. Insulation

- Interior of body, including roof, shall be well insulated against heat, cold and noise.
- Roof Insulation shall be polystyrene EPS insulation.
- Side wall insulation shall meet the same specifications as roof insulation. It shall be installed in all sidewalls, window post rear, and areas over the front and rear wheelhouses.
- The insulation referred to above or other additional insulation shall provide effective sound attenuation for the passenger. The walls and roof are insulated with 1 1/2 inch cell bead board insulation providing R-factor of 0.24 in walls and 0.26 to 0.27 in the roof at 75 degrees F.

- The engine compartment is properly sealed to prevent heat, noise, and fumes from entering the interior of the vehicle and insulated with a fire and heatproof sand barrier, foil faced Insultech sheeting. No interior body surface temperatures shall exceed 100 degrees Fahrenheit.

f. Flooring

- Floor shall be constructed of Transit grade composite sheeting.
- Floor shall be laid in such a manner as to be free from squeaks. All edges shall be over underframe members.
- Floor shall be reasonably level throughout and all joints between the floor and vertical surfaces shall have a cove molding.
- Flooring material shall be securely bolted to the frame members.
- Underframe shall be stiff enough to prevent floor from excessive flexing under normal loads. The floor shall be supported so that when a person of 190 pounds or more steps on any area, there will be no discernible flexing or movement.
- The area at the fare box shall be adequate strength to support the fare box safely and durably.
- The entire floor shall be thoroughly prepared for application of floor covering material.

g. Roof

- The roof structure is made of 1 1/2 inch 16 gauge, box, "clean coat", carbon steel tubing electrically arc welded together to the wall members to prevent drumming or vibrations.
- The roof shall have a lantern style cupola to maintain the vintage them of the 1800's streetcars. The top of the roof framing is sealed with Sika Flex 221, covered with .125 aluminum sheeting. All seams are welded to create a one-piece aluminum roof structure.
- The roof shall have a lantern style cupola with the visual quality interior and exterior of a predecessor streetcar. Cupola windows are 1/8" inch safety tempered glass with a vintage etched design.
- The front and rear have a 6-inch minimum overhang and the sides a 3 -inch minimum overhang. The roof shall have a drip rail rain gutter running the entire perimeter of the roof.
- A rear roof hatch shall be provided to meet the requirements of FMVSS217

- All seams, joints and overlapping panels, shall be thoroughly sealed to prevent the entry of water and dust. Where dissimilar metals meet, proper care shall be taken to prevent electrolytic corrosion.

h. Stepwells

- The entrance and exit floor areas are to be sloped to prevent accumulation of water or ice.

i. Wheel housing

- Wheelhouses shall be of sturdy construction of custom fabricated of ¼" T-100 steel and welded to the floor structure with custom aluminum tower covers on the interior with additional seating incorporated.
- The wheel housing and step wells are sound deadened and sealed with a polyurethane minimum .125 thickness undercoating to eliminate sound passage to the interior of the vehicle.
- The wheel housings shall provide ample clearance at front and rear tires under load and under all positions of front wheel steering.

j. Fenders

- Molded composite fenders shall be furnished at each wheel housing and shall be formed so as to effectively prevent road water/dirt from splashing up and onto driver's mirror or windows.

k. Splash Apron

- Splash aprons, made of not less than one-quarter inch (1/4"), three ply rubberized fabric, or one quarter inch (1/4") cured masticated tire friction material, black in color, shall be provided at the rear of the wheel housings, projecting downward to a point approximately six inches (6") above ground with trolley bus loaded. Aprons shall be full width of trolley body just inside outer body framing.

l. Dip Moldings

- Water-deflecting roof gutters shall be provided over the side windows and doors.

m. Access Panels

- Access doors shall be provided where necessary to service engine, radiator, air conditioning components, batteries, fuel fill, fluids, electrical panels, and all other components or accessories requiring service.
- There shall be adequate access to the engine compartment and rear mounted air conditioning compressor. There shall be easily removable frame and access panels to allow quick access to service components.
- All panels shall provide adequate space to assure easy removal of components or subcomponents.
- All access panels, except for the rear engine door, shall be secured by use of locking devices with matching keys for all doors.
- There shall be exterior access to the engine compartment at the rear, left, right, top and sides of the trolley bus.
- All service doors shall be equipped with no less than two (2) heavy duty gas assisted struts for ease of opening and firm closure of doors.
- The fuel closure door shall be large enough to allow for easy hook up of aftermarket fueling systems. The minimum dimensions of the fuel door opening shall be ten inches (10") square.
- There shall be a def fluid access door, fill and gauge indicator.
- Any exterior accessible electrical compartments shall be sealed to protect its contents from inclement weather.
- The battery box door shall be secured with no less than two (2) exterior locking handles to allow quick access to batteries.
- The front access doors for lights, towing connector, and towing eyes shall be hinged and secured with front access locking handles. Wiper motors shall be accessible and removable from front access doors.
- There shall be interior access to the engine and air conditioning system. Such access shall consist of no less than three (3) removable panels in the following locations.
 - i. Rear bulkhead panel at the air return (w/locking fasteners)
 - ii. Top of the rear settee (with captive fasteners)
 - iii. Lower front section of rear settee (with captive fasteners)

n. Bumpers

- Bumper material shall be black in color and corrosion resistant. These qualities shall be sustained throughout the service life of the trolley.
- Bumpers and their mounting shall provide impact protection to the trolley bus at curb weight from two (2) miles per hour impact with a fixed, flat barrier

perpendicular to the longitudinal centerline of the trolley bus. The rear bumper shall protect the trolley bus, when impacted by the striker as defined in FMVSS No. 215 loaded to four thousand (4000) pounds at four (4) miles per hour parallel to, or up to a thirty (30) degree angle to the longitudinal centerline of the trolley bus. The rear bumper to bumper extensions shall be shaped to preclude unauthorized riders standing on the bumper and shall wrap around the trolley bus to protect the engine compartment doors and radiator.

- The bumper extensions shall not hinder service and shall be flared into the vehicle body with no protrusions or sharp edges. The bumper shall be independent of all power systems of the trolley bus and shall not require service or maintenance in normal operation during the service life of the trolley bus.
- Front and rear bumpers are one-piece, steel fabricated assemblies. The front and rear bumpers are 6 inches in height and designed to follow the contour angles of the front and rear caps. The placement of the bumpers shall be arranged to provide protection against body damage at standard SAE heights. The bumpers shall be Acid Etched, primed with polyurethane and coated with a polyurethane texture painted with a Rhino liner covering to prevent chipping.

o. Towing Eyes

- Two (2) front towing eyes, concealed and located above the bumper, shall be provided.
- Two (2) rear towing eyes shall be located beneath the rear bumper on the main chassis structure to allow the trolley bus to be lifted by a towing vehicle without damage to the rear bumper, body panels, or structure.

17. Windows:

a. Windshield

- The windshield shall incorporate a design constructed of one-quarter inch (1/4") thick safety plate laminated glass in accordance with FMVSS 71.205, AS1 minimum rating. The operator's section of the windshield shall be sloped at sufficient angle to minimize reflections and glare.
- There are three windshields to keep the authentic vintage trolley design along with side and rear windows that are arched at the top.

b. Windshield Wipers and Washers

- Windshield wipers and equipment shall be Sprague Electric and shall provide an adjustable time delay feature. The Trolley bus shall be equipped with variable speed windshield wipers for each windshield section with separate controls for each. No part of the windshield mechanism shall be damaged by manual manipulation of the arm. At 60 mph, no more than ten percent (10%) of the wiped area shall be lost due to windshield wiper lift. Both wipers shall park along the edges of the windshield glass. Windshield wiper motor mechanisms shall be easily accessible for repairs or service from front access and shall be removable as complete units.
- The windshield washer system shall deposit washing fluid on the windshields from nozzles attached to the wiper arm and shall evenly and completely wet the entire wiped area. The windshield washer system shall have a reservoir of one (1) gallon and be located in the front access for easy refilling. The reservoir itself shall be translucent for easy determination of fluid level. Reservoir, reservoir pumps, lines and fitting shall be corrosion resistant and protected from freezing.

c. Side Windows

- All passenger windows shall be manufactured in accordance with FMVSS 571.205. Windows shall have a vintage 3M etched pattern applied to the top arch area of the inside.
- The passenger windows have a vertical slider with a center glass drop sash design with a 2-point latch system easily operable by the passengers. The windows shall have an etching design to add to the vintage appearance.
- All windows shall be of the same size and shall be interchangeable. Windows shall be designed to prevent the entrance of air and water when windows are closed.
- There are a sufficient number of emergency exit windows located on driver side, passenger side, and rear of the coach to meet FMVSS 217 for emergency exits. Near each window there shall be instructions on decals that sufficiently explain emergency exit procedures.
- One (1) portion of the window shall be openable, or have a drop sash design, to provide adequate outside air ventilation and shall have locking latches.
- Glazing color shall be consistent from window to window with the exception of the upper destination window (if used). Upper destination sign's window shall be clear in color. Other passenger windows shall have not more than a twenty-eight (28%) tint.

d. Driver's Window

- The driver's area will have one clear T-slider arched windows for easy access to tolls. The driver's window shall be a slider window with laminated safety glass. The window shall have a ratchet or stop lock mechanism to prevent uncontrolled sliding. There shall be an interior and exterior "non-locking" handle on the front vertical bar of the operator's window.

18. Passenger Door:

a. Front Entrance Door

- The front door shall be Vapor two section air operated with a minimum clear opening dimensions of thirty-four inches (34") wide. The vertical and horizontal door clearances shall comply with all ADA requirements.
- Door shall be outward opening and have stainless steel hinged with joints at the door posts covered by rubber seals. Meeting edges of door shall have four inches (4") extruded overlapping type rubber safety edges with two inches (2") on each half.
- Door shall be fully air operated with a Vapor door motor. An air shut-off valve shall be supplied. When the valve is in an "Off" position, front door shall be capable of being opened and closed manually.
- Each door section shall be equipped with a handrail, powder coated yellow that is designed to minimize the incursion into the clear door opening. The area between the front entrance and driver's station shall have a brass hand rail to aid in boarding and the trolley.
- External air dump switch shall be located on the exterior of the trolley bus located inside the passenger access door to hold the door in the open position when necessary.

b. Rear Exit Door

- Both front and rear doors shall be controlled by a door operating control, with the following indicator positions/aspects:
 - i. Front Door Open – rear door unlocked
 - ii. Front Door Open
 - iii. Both Doors Closed (if rear entry/exit is chosen)
 - iv. Rear Doors Unlocked (if rear entry/exit is chosen)
 - v. Rear Door Unlocked – Front Door Open

- A brake and accelerator interlock shall be provided that prevents movement of the trolley bus when the doors are open. The interlock equipment shall be mounted together as one (1) assembly.
- A rear door (if chosen) override lever shall be provided for emergency exit. The lever shall be located in the rear door control, compartment. The lever is used to release the rear door from the locked position for manual operation and also shall engage the interlock.
- A master interlock override switch shall be provided. It shall be located in the electric panel near the driver and shall be in a secure position.

c. Door Glass

- Each section of the door shall be glazed with one-quarter-inch (1/4") nominal laminated glass. Door glass shall have the same tint as the passenger windows.

19. **Exterior Mirrors:**

a. General

- Trolley buses shall be equipped with two (2) mirrors, one (1) mounted on the roadside front corner post and one (1) mounted on the curbside front corner post.
- Roadside mirror shall be located just above the lower edge of the driver's roadside window.
- Curbside mirror is not to extend further than a twelve inch (12") radius from the corner of the trolley bus and shall be mounted on the curbside front corner post.

b. Curbside and Roadside Mirrors

- Mirror shall be remotely adjustable with all metal hardware. The controls shall be located to the roadside of the driver and provide for a full range of adjustment of the mirrors. The glass shall be easily replaceable.
- The mirror heads and arms shall be a heavy-duty retractable design to prevent damage from fixed objects and during bus washing through automatic washers. The mirror heads shall be connected to arms with adjustable aluminum or brass ball type stems with metal set screws. Mirrors shall be fully adjustable by the operator without use of tools.
- The mirrors shall be operated by the drivers switch and shall be heated to prevent ice buildup.

- Mirror shall not be less than six and one half feet (6 ½) above the pavement nor extend more than 12 inches (12") radius from the corner of the trolley.

20. Interior:

a. Floor Covering

- Floor shall utilize Altro Transit flooring material in a simulated wood grain or other color offered by manufacture. Up to two colors shall be selected at a pre-build conference.
- Steps at the front entrance and rear exit shall be covered with skid resistant Altro coverings congruous with the interior floor colors and pattern. Entrance and exit step treads shall include integral molded yellow noses on stainless steel metal backing, backing to be totally enclosed in rubber.
- Floor area under seats, including driver's area, shall be covered with mottled smooth floor covering not less than one-eighth inch (1/8") in thickness. The material is to be thoroughly cemented into position throughout the entire area. The floor covering shall no extend up on the wheel housing but shall terminate where the floor covering butts the housing.

b. Modesty Panels

- All modesty panels shall be covered with matching steel painted or interior paneling color and grain shall be coordinated with the remainder of the interior.
- All modesty panels shall be welded in place as part of the structural body with hand railings attached with through bolts to ensure sturdy attachment.
- A modesty panel approximately thirty-four inches (34") in height shall be installed within the hand rail area of the rear of the front stepwell. This panel shall have adequate clearance from the front door, to prevent injury to passenger's hand(s) during the opening cycle.
- A modesty panel of approximately thirty-four inches (34") in height shall be installed within the hand rail area of the rear side of the rear step well (if send entry/exit is chosen).
- All modesty panels shall be raised three inches (3") above floor level.

c. Driver's Barrier

- A full height barrier beginning six inches (6") above the floor shall be provided directly in back of the driver's station to separate the driver from the passenger

compartment. The barrier shall extend from the left side of the trolley bus wall to the stanchion at the right rear of the driver's stanchion and then wrap around the side of the driver's seat. This panel shall in no way interfere with the safe normal operation of the trolley bus or restrict movement of the driver's seat.

d. Interior Trim

- Interior side walls and cupola roof area shall be paneled with 1/4" oak, shall be applied to ensure a neat and finished appearance. Fasteners shall be of such type that they will not loosen due to vibration. Panels shall be supported so as to prevent buckles, drumming or flexing when the vehicle is in service.
- All panel joints shall be sealed and covered with protective trip strips of solid oak in various widths to provide an aesthetically pleasing interior reminiscent of the predecessor streetcar. All oak shall be treated or finished with an epoxy varnish to ensure durability and protection from the elements.
- Panel behind the rear settee shall conform to the requirements of Federal Safety Standard No. 302 Flammability of Interior Materials.
- All trim moldings around wheel wells, sidewall, cove area, settee riser, front dash area and panel below driver's window shall be stainless steel.
- A final interior color scheme shall be determined by the customer at the pre-production meeting.

e. Stanchions/Grab Rails

- All stanchions and grab rails shall be one and one-quarter inch (1 1/4") diameter smoother surface anodized brass tubing, with fitting that match tubing.
- Fitting shall be corrosion resistant and congruous with the installed stanchion rails.
- A full length ceiling grab rail with eight (8) leather grab straps shall be provided on the trolley bus.
- Ceiling grab rail ends shall terminate at the ceiling connection with round dome ends of brass. A vertical stanchion shall be mounted from the floor to the ceiling or ceiling grab rail at the right rear of the operator's seat. A vertical stanchion shall be mounted from the floor to the ceiling grab rail at the inside rear of the front step well and at the front and rear of the rear stepwell.
- A hand rail shall extend from the front and rear stanchions to the body side approximately thirty-four inches (34") above the stepwell risers. This will be provided on each side of the rear stepwell.
- A vertical stanchion running from the seat bottom to the ceiling or ceiling grab rail shall be installed in the middle of all longitudinal passenger seats.

- Entrance grab rails shall be installed at the front stepwell area of the trolley bus. Such a grab rail shall be affixed to the wheelchair lift platform. The grab rail shall not interfere with the wheelchair maneuverability. They shall be brushed stainless steel or brass construction. In addition, grab rails shall be installed on each half of the front door which do not interfere with the lift grab rails.

f. Interior Mirror

- Trolley bus shall be equipped with one (1) or more inside rear view mirrors. Center rear view mirror shall be seven inches (7") by sixteen inches (16"). Mirrors shall be located so as not to interfere with passengers. All mirrors shall be mounted so that they are vibration free when engine is idling and when trolley bus is moving.
- Trolley bus shall be equipped with twelve inch (12") round diminishing mirror to be mounted at rear exit door in such a way so it will not interfere with passengers and may be viewed by the operator from a forward mirror.

g. Sun Visors

- Driver side window and front window shall have a New View rollup type sun visor visible through but reducing sun glare.

h. Passenger Stop Request Signal

- A passenger "Stop Request" chime shall be installed.
- The system shall consist of a yellow plastic coated wire rope, running horizontally from directly behind the front modesty panels to the last rear window of both sides of the trolley bus. The cable shall run horizontally along the top of the wall section and the top of the windows. There shall be hanging nylon or leather pull straps. The cable shall not sag below the window top. Cable shall be affixed with eye loops at every window post. The pull straps shall not cause interference with the opening of the windows.
- There shall be a touch tape located on the bottom side of the flip seat areas for the ADA positions when in use the flip seats shall be stowed allowing the touch tape to be at the hand height of the ADA passenger positions.
- A lighted sign shall notify passengers upon activation of the "Stop Request". Such a sign shall have a white lettering on blue background. The sign shall remain illuminated passengers exit the trolley bus and the front door is cycled. The sign shall be illuminated via an LED light fixture.

- The passenger signal shall chime one (1) time to stop continuous use by passengers. System shall reset automatically when the front doors are cycles open and closed. The sign shall be equipped with an on/off switch located on the operator's console.

i. Miscellaneous Interior Equipment

- A storage space of no less than one and one half (1 ½) cubic feet shall be supplied in the operator's area. The compartment door shall be secured by two locking handles.
- A metal coat hook shall be furnished and installed at a convenient location for the driver. A leather or vinyl buckle strap with Velcro shall be installed to prevent coats from swaying.
- Amerex Model 400T ABC five pound (5 lb.) dry chemical fire extinguisher and KD #610-4645 safety triangle kit shall be installed. Fire extinguisher location shall be placarded with permanent decal.

j. Passenger Seats

- The passenger seats shall be natural oak or slat with vast aluminum tram seat ends and shall meet flammability requirements of FMVSS-302. All seats shall be 34 inches in width and shall have smooth urethane coated finish of a minimum of 3-5 coats. Seating arrangement shall be forward facing, perimeter or a combination.
- Passenger transverse seats shall be a flip up seat design and be a minimum of thirty-four inches (34") wide and eighteen inches (18") in seat depth for a double flip up seat. For a triple passenger flip up seat the seat shall be a minimum of fifty-one inches (51") wide and eighteen inches (18") deep. Flip seats shall be identical in size and configuration. Typical seating arrangements for 34, and 37, foot trolley buses are depicted in figure 1 and 2.
- There shall be no less than twenty-eight inches (28") hip to knee room between each seat.
- Seat assemblies and components of identical seats shall be mechanically interchangeable.
- The seats over the rear wheel housing shall be longitudinal seats facing inward, providing seating accommodation for 2 or more passengers in various multiple arrangements.
- The rearmost bench seat shall provide seating accommodations of five (5) passengers.

Low Floor ADA Trolley Specifications

- The cast aluminum seat ends shall be scrolled and paint to match the color scheme of the trolley.
- All forward facing wheelchair jump seats shall be constructed to have the same high back appearance as the fixed passenger seats. Individual side facing jump seats in the tie down area may match the other longitudinal seats in configuration.

k. Wheelchair Access/Tie down Stations/Restraint System

- Trolley buses shall be designed to maximize accessibility be wheelchairs and other mobility device. The front entrance shall allow for a clear turning radius of thirty-six inches (36") from the driver's station to the front door entrance modesty panel. The front wheelhouses shall provide a minimum clear opening of thirty-six inches (36") to allow mobility devices to maneuver from the entrance door back to the tie down area.
- Accommodations shall be provided for two (2) wheelchair passengers to be secured in a forward or side facing position in the area immediately rear of the front wheelhouses. The length of this area shall be ninety six inches (96") minimum, and the width shall be equal the length of the transverse seats and the modesty panels. Modesty panels shall be adequately reinforced to withstand the impact of wheelchairs.
- The exit signal shall be no higher than four feet (4') above the floor in this area. Maneuvering room inside the trolley bus shall accommodate easy travel for a passenger in a wheelchair from loading device through the trolley bus to the designated parking area, and back out. No portion of the wheelchair or its occupant shall protrude into the normal aisle of the trolley bus when parked in the designated parking space(s).
- All dimensions for wheelchair maneuvering, parking, foot clearance, and turning area shall comply with ADA regulation.
- There shall be wheelchair restraints for each tie down location in the trolley bus which comply with ADA regulations, including the accommodation of "scooter" type vehicles. A storage box for each restraint position shall be built into the flip up seat frame.

l. Access Ramp

- An access ramp shall be provided at the entrance door. It shall be a Lift U18 or Ricon 621S fold out ramp. The ramp shall have a useable width of thirty-one inches (31") and meet all ADA requirements. The ramp is to be operated by the

driver from the seated position. In case of malfunction, the ramp shall be manually operable.

- The ramp shall be operable from area of sidewalks, curbs, or various other stop locations. The ramp angle meets or exceeds is six (6) to one (1).
- The ramp will be manufactured of stainless steel, be rated for 660 pound capacity minimum and be driven by an all-electric drive system. The system shall allow for easy manual operation of the ramp, requiring a maximum of 20 pounds of force to lift and deploy the ramp.
- All interlocks required to meet FMVSS and ADA requirements shall be provided with the wheelchair ramp.

m. Driver's Station

- The design of the driver's station shall have the prime objective the provision of an environment for the driver that will aid him or her to operate the trolley bus safely and efficiently for long periods of time with minimum fatigue. The driver's station shall have the components located to provide comfort and use, safely while operating the trolley bus.
- The driver's station shall accommodate drivers who are of various heights and body proportions by use of human factors design in locating proportioning the devices in the station and by the use of adjustable components such as the driver's seat and the steering column. The driver's station shall accommodate drivers within a height range of 57 to 76.5 inches.
- The operator's seat shall be the USSC 9100ALX3. The seat shall be covered with heavy-duty black vinyl fabric and be perforated for ventilation. High density polyurethane foam shall be used for the seat cushion. Seat shall be equipped with two point seat belt. The seat shall be provided with double shock vibration damping and a stepless seat rack and back recline. Air operated lumbar adjustments and an air slide release shall be mounted on the panel accessible to the driver. The seat shall provide adjustment of the ride height via a pneumatic suspension which includes a quick dump air release. A three (3) position limit/lockout lever shall be provided to allow operator to set the seat in a fixed suspension height. Seat mounting shall allow for maximum of nine inches (9") of usable for and aft travel without contacting any part of the operator compartment.
- The driver's console shall be designed for the safety of the operations as well as the comfort of the driver. The forward dash console shall have a complete complement of instrumentation and controls consisting of:
 - i. speedometer with an odometer
 - ii. voltmeter

Low Floor ADA Trolley Specifications

- iii. engine temperature gauge with warning lights
- iv. water temperature
- v. low engine coolant level
- vi. oil pressure gauge
- vii. fuel level gauge
- viii. alternator with Pentax charging monitor
- ix. parking brake
- x. high-beam indicator
- xi. directional signal indicator
- xii. headlight beam switch
- xiii. radio cassette

- To the left of the driver shall be all other vehicle accessory switches including:
 - i. a master on/off switch
 - ii. A 12V driver's fan shall be mounted in the header area with a driver's control switch located in the switch panel.
 - iii. A sun Visor shall be mounted in the header area.

n. Public Address System

- An REI Amplifier shall be secured in a protective waterproof housing in the operator's area. Necessary noise suppression shall be made to prevent interference from the alternator, lighting or other noise sources.
- A gooseneck microphone shall be attached to the overhead compartment, above and to the left of the driver and be capable of adjustment to the driver's left shoulder neck area.
- An output jack shall be provided in the operator's area for future installation of a handheld microphone.
- A foot mounted foot mounted switch shall be supplied to afford hands-free operation of the PA system.
- The PA system shall also incorporate selected inside/outside/both operation of internal and external waterproof speaker and shall be heard from a distance of fifty feet (50') from the trolley bus.
- A minimum of one (1) speaker every six feet (6') on each side of the trolley bus shall be provided of sufficient power and quality and shall be flush mounted to the ceiling to provide a good distribution of sound throughout the passenger compartment. Speakers shall be six inches (6") in diameter. Speakers shall be covered by removable black grille.

- Speaker selector switch shall be conveniently mounted to allow operator to use interior speakers only, exterior speakers only, or all speakers. An on/off power switch shall be mounted on the instrument panel.
- P.A. system shall be wired to allow future installation of "Next Stop" annunciation system interfaced with the P.A. and speaker system to allow automated messages to be broadcast over this system.
- The trolley bus shall be equipped with a hand-held microphone in the driver's compartment area.
- The manufacture shall supply a headphone jack and hanger bracket at the top inside of the front stepwell modesty panel for connection of a handheld microphone for special service purposes. This connection shall power all speakers identical to the operator's microphone.

21. Heating, Defrosting, Ventilation and Air Conditioning:

a. Vehicle Heating

- A heating and ventilation system shall be provided with proper correlation to provide practical maximum comfort to passengers and the operator. Heating and ventilating system shall incorporate introduction of approximately twenty percent (20%) fresh air.
- Air for heating and ventilating shall be evenly distributed throughout the trolley bus body in such a manner as to minimize temperature variation. Provision shall be made for minor adjustment of control to maintain desired temperatures within the trolley bus without changing supply of outside air required for ventilation.
- A manual control or modulating valve shall be provided to permit the fans to be used for power ventilation of outside air in warm weather.
- Main heating system shall be thermostatically controlled. The heating system shall provide heated filtered air for an ambient temperature differential from 60°F to 0°F. Heating filtering elements must be of the disposable type.
- Blowers shall be heavy duty with adequate output to provide circulation throughout the trolley bus. Blower shall also circulate fresh air throughout the trolley bus.
- The main heater shall be mounted in rear of the trolley bus above the engine compartment. It shall have heavy-duty motors and a minimum capacity of 110,000 BTU.
- The HVAAC system shall have a dedicated insulated ducted for the entire trolley bus. HVAAC ducts shall include closable dampers to completely eliminate air flow if desired.

b. Driver's Heater/Defroster

- A separate dash heater and blower shall be provided for the driver's comfort and for windshield defrosting. Capacity of heat shall be 52,000 BTU.
- Defroster blower shall be automatically inoperative if the alternator is not charging.

c. Heater Water Lines

- Heater water line shall not be exposed within the trolley. The hoses are a silicone grade hose ran from the rear of the trolley to the front defroster/heater through a sealed trough the inside of the trolley bus with access panels for servicing.
- All water lines shall be heavily insulated throughout the trolley bus.

d. Heater Cores

- All heater core fins shall be of aluminum, and the heater core tubes shall be copper. Metal used in the tanks shall be of adequate thickness and drawn reinforcements. All radii of the tanks shall be of sufficient size to preclude fatigue failure.
- Heater cores, motor and fan shall be readily accessible and removable through service panels

e. Heater and Blower Motors

- All blowers required for heating and ventilating system shall be balance statically and dynamically.
- All motors required for these blowers shall be heavy-duty type motors, with a minimum of one-quarter (1/4) horsepower.

f. Heater Thermostat

- A thermostat controlling the heating system shall be protected or screened to prevent tampering and guarded against any possible damage from passengers.

g. Air Conditioning System

- The trolley bus shall be equipped with a Mobile Climate Control RM35 Series designed to operate on R-134a refrigerant.

- The air conditioning unit frame shall be constructed of structural aluminum of light 0.100 and 0.182 material thicknesses for strength, corrosion protection, and light weight. The frame shall be completely welded and painted with a high solid polyester paint. All hardware shall be 300 Series stainless steel to protect against corrosion. "Neverseer" anti-seizing lubricant shall be applied to the treads of all stainless steel hardware during assembly to prevent thread galling.
- The evaporator, heater, and condenser coils shall be constructed of seamless copper tubing having a minimum of .0195 inch wall thickness. The copper tubing shall be mechanically expanded into aluminum fins having a minimum thickness of 0.080 inches. The condenser coil shall be mounted to allow easy removal and reinstallation without major disassembly of the unit frame or removal of the unit from the trolley bus. Separate drains shall be provided for the condenser and evaporator/heater sections to allow moisture to be routed out of the unit to the street. Drain seals and/or traps shall be installed at the outlet of the evaporator/heater drain tubes to prevent entrance of dirt or fumes into the trolley bus.
- The motors shall be brushless sealed 24 VDC. The condenser shall have two (2) fan motors and the evaporator/heater shall have (2) blower motors. Motors shall be selected and applied to maximum efficient operation, airflow and long life. Brush life shall be a minimum of 10,000 hours of operating time. Motors shall be capable of variable speed operation for heating and cooling.

h. Temperature and Electrical Controls

- There shall be unitized control panel consisting of reliable electromechanical relays, magnetic motor circuit breakers, bi-metal control circuit breakers, adjustable return air thermostat with a range of 60°F -90°F ambient thermostat, evaporator coil, antifreeze thermostat, and terminal board for ease of troubleshooting.

i. Electrical Wiring and Terminals

- All unit wiring shall conform to FMVSS requirements. All terminals shall be ring type harness with Packard pin connectors with vinyl insulation. All terminals shall be machine crimped. All terminations exposed to ambient conditions shall be coated with glycol for corrosion protection.

j. Receiver Tank, Dry Eye, Filter/Dehydrator

- The unit shall be equipped with a refrigerant receiver tank installed vertically to ensure a steady liquid feed to the expansion valve. The receiver tank shall meet all ASTM requirements and have two (2) sight glasses for checking refrigerant level. The top sight glass shall have a floating plastic ball to indicate proper refrigerant level. A refrigerant dry eye shall be provided in the liquid line, or in the lower sight glass of the receiver tank, to indicate the presence of moisture in the refrigerant system. The unit shall have a disposable liquid line filter/dehydrator.

k. Refrigerant Hoses/Copper Tubing/ Fittings

- Suction and discharge hoses shall be provided to connect the air conditioning unit to the compressor. The hoses shall have reusable swivel fittings, Teflon liner, stainless steel interior support coil, stainless steel exterior braid and asbestos exterior sleeve for abrasion protection. Length of such hoses shall be kept to a minimum to diminish effusion of refrigerant or permeation of moisture.
- All copper tubing provided shall be refrigerant grade, Series 122 seamless type meeting ASTM specifications. All solder joints shall be silver soldered. All flux and scale shall be cleaned from solder joints, prior to soldering, and all tubing exposed to ambient shall be sprayed with fungus proof varnish.
- All joint Industry Council (JIC) and SAE swivel fittings of three-quarter inch (3/4") flare size and larger shall include "o" rings for added sealing protection. "O" ring material shall be compatible with refrigerant.

l. Expansion Valve

- The expansion valve shall be externally equalized. The expansion valve bulb shall be clamped to the suction line in the evaporator compartment and insulated from effects of surrounding air temperature. The expansion valve body shall be properly secured and mounted in the return air area for ease of access.

m. System Performance

- The RM35 system shall control the interior trolley bus temperature to meet all White Book temperature control performance requirements as defined in Chapter 3.7, Interior Climate Control, of the Department of Transportation, Urban Mass Transportation Administration., "Baseline Advance Design Transit Coach Specifications".

n. System Protective Controls

- The air conditioning system will be equipped with the following protective control;
 - i. High pressure cutout switch
 - ii. Low pressure cutout switch
 - iii. Ambient sensing switch 45 + 5 cutout 55 + 5°F cut-in
 - iv. Evaporator coil freeze protection – The system shall be equipped with an evaporator pressure regulator or Anti-Freeze thermostat to prevent condensate freezing on the evaporator coil.

o. Compressor

- The air conditioning system shall be provided with a compressor. The compressor shall be capable of cycling on/off at any operating speed. High and low refrigerant pressure cutout switches shall be mounted on the compressor. Suction and discharge service valves shall be made of brass, with steel stems.

22. Body Preparation/Paint and Decals:

a. Painting and Striping

- The customer shall choose from a wide choice of colors from the manufactures provided color chart book. Matching fleet colors are also available.
- Both exterior and interior paint is to be Sikkens Azko Nobellow VOC.
- All paint shall be applied to a minimum thickness of six (6) mils.
- The framing is washed with a metal prep wax and grease remover, and then primed with Interseal Coating.
- All exterior panels are prepped with an etching wash, primed with an etching primer 670SH, a base primer low VOC primer, specially designed for metal surfaces. The primer is allowed proper drying time and sanded before applying the standard two tone Sikkens Azko Nobel Polyurethane Colors and clear coat.
- A Standard Vintage pin-striping package shall be installed.

b. Interior Signs

- All interior signs shall be supplied and installed in a metal, permanent plate design mounted to the body with rivets.

- “No Smoking, No Eating, No Radios, No Drinking” plates shall be placed on the driver’s modesty panel above the schedule rack and the rear wall location.
- Interior trolley bus number in one (1) location shall be two inch (2”), in vintage oval background with “No.” symbol.
- A decal explaining instructions for operating the wheelchair lift and a decal explaining the instructions for operating the kneeling system shall be installed near the driver’s location.
- Plastic engraved plates stating “No Standing Ahead of the White Line” shall be located on front cupola wall clearly visible to passengers in passenger area.
- Decal shall be fixed on all emergency exit with instructions as required by law.
- Decal stating “Do Not Push On Exit Door” shall be located on rear door (if choosing optional rear entry/exit door) on each leaf of the door affix to yellow door handles

c. Exterior Decals and Signs

- Exterior trolley bus number shall be affixed to all four (4) sides of trolley using the “No.” symbol in front of the number. Roof Top trolley number of twenty-four (24”) shall be used if required.
- “Diesel Fuel” decal shall be installed outside filler door.
- “Caution-Negative Ground” to be located inside battery compartment door as well all necessary instruction to operate battery disconnect switches.
- “Battery Shut Off” shall be affixed to battery tray compartment door.
- The International Handicapped Symbol shall be installed at one (1) location. This symbol will be the white on blue background.
- Up to four (4) logos or City Name graphics shall be applied.
- “Wheelchair Lift/Kneeling” decal shall be installed to the exterior near the front entrance ramp area.

23. **Safety:**

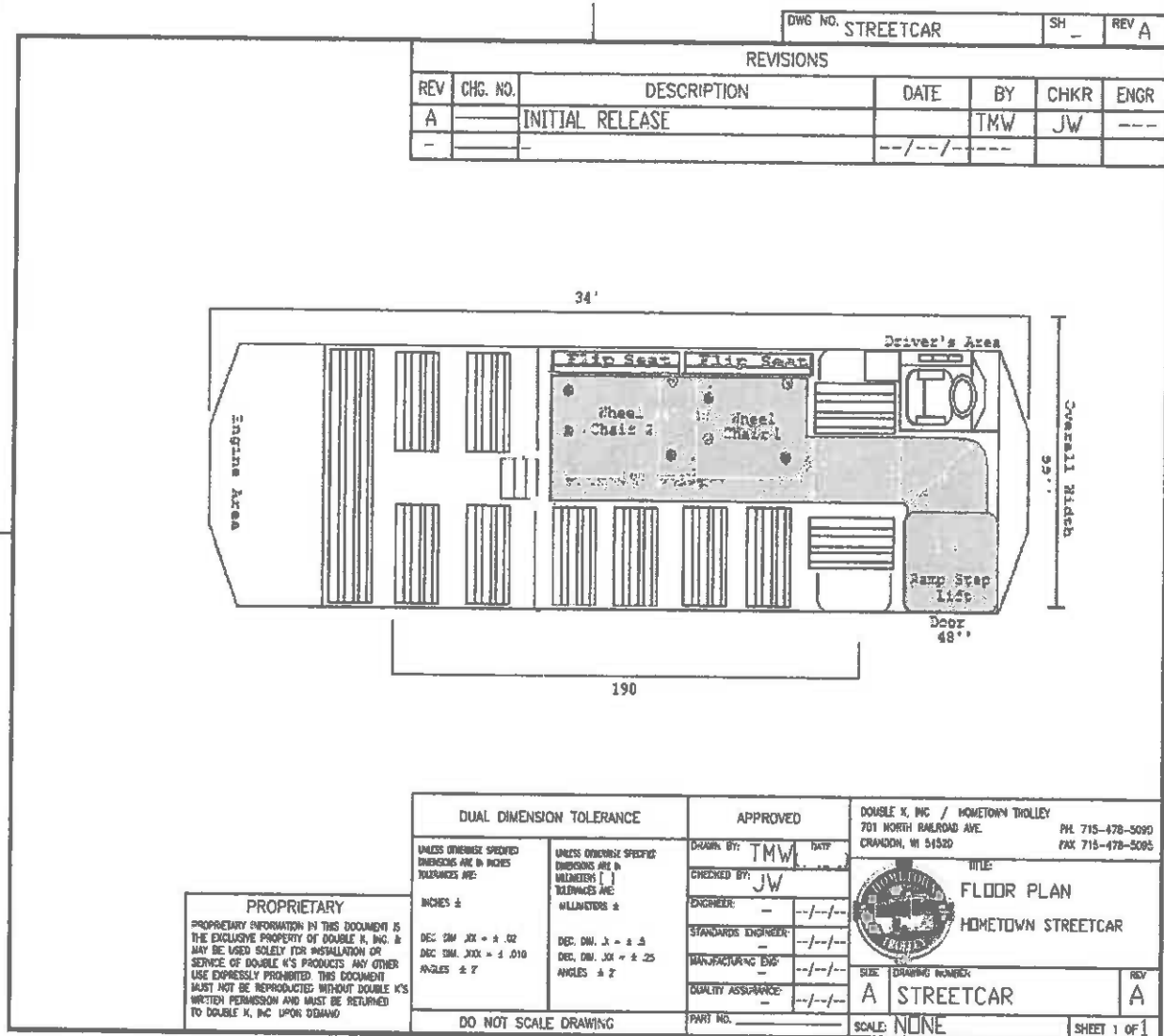
a. Vehicle Safety Items

- Drive shaft guards shall be installed between every pair of universal joints.
- A 5-pound type B.C. fire extinguisher shall be supplied.
- A triangle flare kit shall be equipped.
- A body fluid clean up kit shall be provided
- A transit style battery master disconnect shall be installed.
- An audible back-up alarm shall be installed.

Low Floor ADA Trolley Specifications

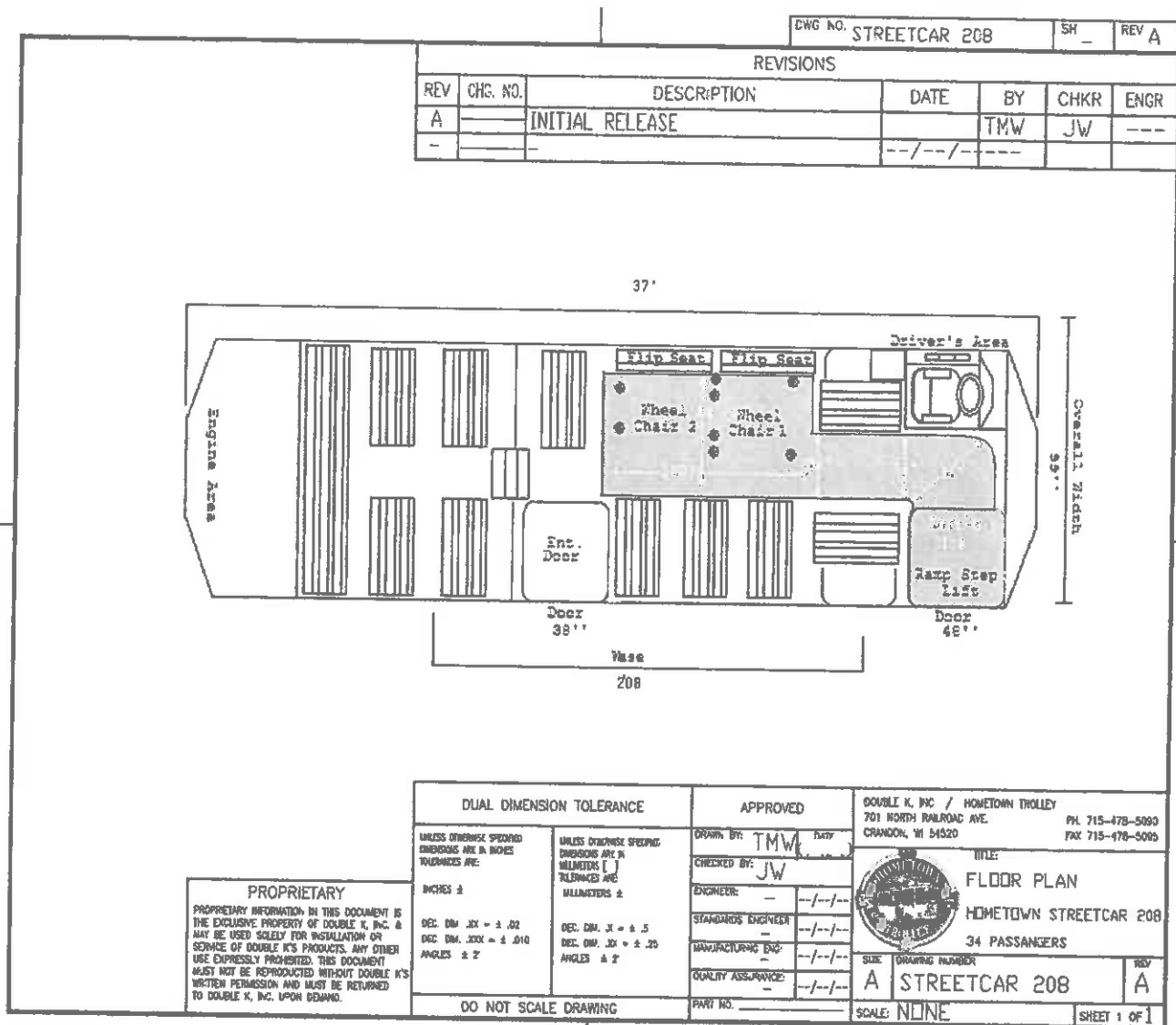
- All doors and wheel chair lift shall be interlocked through the shift inhibitor, parking brake, and/or braking system.
- Entrance doors shall be equipped with a sensitive edging to prevent closing when obstructed.
- All appropriate warning labels shall be installed.

Figure 1



Low Floor ADA Trolley Specifications

Figure 2



Low Floor ADA Trolley Specifications

Price and Option Prices

Base Vehicle Price	\$ 358,925.00 /ea.
--------------------	--------------------

OPTIONAL ITEMS

COST/DEDUCTION

Propulsion System

Upgrade to Cummins ISL Engine or Cummins ISL-G Engine	\$ 24,500.00 / ea.
Alternative Fuel CNG available with ISL-G Engine	\$ 31,850.00 / ea.
Full Electric Propulsion System	\$ 295,000.00 / ea.
Emco-Wheaton Fueling System	\$ 3,800.00 / ea.

Electrical

Invertor with 110 v Outlets for Holiday Lighting	\$ 950.00 / ea.
Roof Mounted Transit Strobe Light	\$ 450.00 / ea.

Audio/Video

DVD Player	\$ 400.00 / ea.
20" Flat Screen Monitor	\$ 905.00 / ea.
Headset Mic	\$ 210.00 / ea.
REI Surveillance 4 Camera System	\$ 3,250.00 / ea.
Safety Vision 9 Camera System	\$ 11,250.00 / ea.
Seon 7 Camera Surveillance Camera System	\$ 8,850.00 / ea.
Apollo/Road Runner 7 Camera Surveillance Camera System	\$ 9,800.00 / ea.

Flooring

Faux Wood Plank Transit Flooring (various color available)	\$ 550.00 / ea.
--	-----------------

Body

Open Air Sections with Guard Rails and Rain Curtains	\$ 2,400.00 (pair) / ea.
Window Inserts Used with Open Air Options	\$ 2,900.00 (pair) / ea.
Mahogany Trim Package Exterior	\$ 11,560.00 / ea.
Mahogany or Oak Trim over Top Windows Only	\$ 4,100.00 / ea.
2 nd Exit/Entry Door	\$ 5,800.00 / ea.
Sportsworks DL2 Bike Rack	\$ 1,840.00 / ea.
Sportsworks DL3 Bike Rack	\$ 2,180.00 / ea.

Low Floor ADA Trolley Specifications

Safety

Afex Fire Suppression System	\$ 5,700.00	/ ea.
------------------------------	-------------	-------

Interior

Interior Wall with Swing out Door Dividing Open Air Section	\$ 2,450.00	/ ea.
Mahogany Seat Slats	\$ 1,200.00	/ ea.
Spiral Brass Upgrade	\$ 1,467.00	/ ea.
Freedman Transit Seating – CitiPro Model	\$ 4,250.00	/ ea.
Tram Seat Cushion Bottoms	\$ 78.00	/ ea.

Fare Collection/APC/AVL/GPS

Genfare Odyssey Fare Collection	\$ 15,890.00	/ ea.
Genfare Fast Fare Collection	\$ 15,920.00	/ ea.
Diamond D SV Fare Collection	\$ 1,690.00	/ ea.
Transign LED Destination Signs	\$ 3,400.0	/ ea.
Luminator LED Destination Signs	\$ 5,600.00	/ ea.
Trapeze AVL/APC/GPS System	\$ 27,000.00	/ ea.
TSO Mobile AVL/APC/GPS System	\$ 17,000.00	/ ea.



Solicitation

1. Solicitation #: SW797 Additional Items

2. Solicitation Issue Date: April 18, 2016

3. Brief Description of Requirement:

Request for Proposals for additional items to be added to the SW797 ADA Bus contract.

4. Response Due Date¹: May 11th, 2016

Time: 3:00PM CST/CDT

5. Issued By and RETURN SEALED BID TO²:

Personal, U.S. Postal or Common Carrier Delivery:

Office of Management and Enterprise Services
Central Purchasing
5005 N. Lincoln Blvd., Suite 300
Oklahoma City, OK 73105

6. Solicitation Type (type "X" at one below):

- ☐ Invitation to Bid
- ☒ Request for Proposal
- ☐ Request for Quote

7. Requesting Agency: OMES Central Purchasing

8. Contracting Officer:

Name: Gerald Elrod

Phone: 405/522-1037

Email: Gerald.Elrod@omes.ok.gov

¹ Amendments to solicitation may change the Response Due Date (read GENERAL PROVISIONS, section 3, "Solicitation Amendments")
² If "U.S. Postal Delivery" differs from "Carrier Delivery", use "Carrier Delivery" for courier or personal deliveries



Responding Bidder Information

"Certification for Competitive Bid and Contract" MUST be submitted along with the response to the Solicitation.

1. RE: Solicitation # SW797 Additional Items

2. Bidder General Information:

FEI / SSN : 58-1216021

VEN ID: _____

Company Name: National Bus Sales & Leasing Inc

3. Bidder Contact Information:

Address: 15580 Hwy 114

City: Justin

State: TX Zip Code: 76247

Contact Name: Brent Roy (sent c/o Jennifer Cobb)

Contact Title: Area Sales Manager

Phone #: 817-636-2365

FAX#: 817-636-2947

Email: broy@nationalbussales.com

Website: www.nationalbussales.com

4. Oklahoma Sales Tax Permit¹:

☐ YES – Permit #: _____

☐ NO – Exempt pursuant to Oklahoma Laws or Rules

5. Registration with the Oklahoma Secretary of State:

☒ YES - Filing Number: 2312158057

☐ NO - Prior to the contract award, the successful bidder will be required to register with the Secretary of State or must attach a signed statement that provides specific details supporting the exemption the supplier is claiming (www.sos.ok.gov or 405-521-3911).

6. Workers' Compensation Insurance Coverage:

Bidder is required to provide with the bid a certificate of insurance showing proof of compliance with the Oklahoma Workers' Compensation Act.

☒ YES – include a certificate of insurance with the bid

☐ NO - attach a signed statement that provides specific details supporting the exemption you are claiming from the Workers' Compensation Act (Note: Pursuant to Attorney General Opinion #07-8, the exemption from 85 O.S. 2011, § 311 applies only to employers who are natural persons, such as sole proprietors, and does not apply to employers who are entities created by law, including but not limited to corporations, partnerships and limited liability companies.)²

Authorized Signature

5/31/16

Date

Jennifer Cobb

Printed Name

Sales Coordinator

Title

¹ For frequently asked questions concerning Oklahoma Sales Tax Permit, see <http://www.tax.ok.gov/fag/fagbussales.html>

² For frequently asked questions concerning workers' compensation insurance, see <http://www.ok.gov/oid/fags.html#c221>



**Certification for Competitive Bid
and/or Contract
(Non-Collusion Certification)**

NOTE: A certification shall be included with any competitive bid and/or contract exceeding \$5,000.00 submitted to the State for goods or services.

Solicitation or Purchase Order #: SW797 Additional Items

Supplier Legal Name: National Bus Sales & Leasing Inc

SECTION I [74 O.S. § 85.22]:

A. For purposes of competitive bid,

1. I am the duly authorized agent of the above named bidder submitting the competitive bid herewith, for the purpose of certifying the facts pertaining to the existence of collusion among bidders and between bidders and state officials or employees, as well as facts pertaining to the giving or offering of things of value to government personnel in return for special consideration in the letting of any contract pursuant to said bid;
2. I am fully aware of the facts and circumstances surrounding the making of the bid to which this statement is attached and have been personally and directly involved in the proceedings leading to the submission of such bid; and
3. Neither the bidder nor anyone subject to the bidder's direction or control has been a party:
 - a. to any collusion among bidders in restraint of freedom of competition by agreement to bid at a fixed price or to refrain from bidding,
 - b. to any collusion with any state official or employee as to quantity, quality or price in the prospective contract, or as to any other terms of such prospective contract, nor
 - c. in any discussions between bidders and any state official concerning exchange of money or other thing of value for special consideration in the letting of a contract, nor
 - d. to any collusion with any state agency or political subdivision official or employee as to create a sole-source acquisition in contradiction to Section 85.45j.1 of this title.

B. I certify, if awarded the contract, whether competitively bid or not, neither the contractor nor anyone subject to the contractor's direction or control has paid, given or donated or agreed to pay, give or donate to any officer or employee of the State of Oklahoma any money or other thing of value, either directly or indirectly, in procuring this contract herein.

SECTION II [74 O.S. § 85.42]:

For the purpose of a contract for services, the supplier also certifies that no person who has been involved in any manner in the development of this contract while employed by the State of Oklahoma shall be employed by the supplier to fulfill any of the services provided for under said contract

The undersigned, duly authorized agent for the above named supplier, by signing below acknowledges this certification statement is executed for the purposes of:

☒ **the competitive bid attached herewith and contract, if awarded to said supplier;**

OR

☐ **the contract attached herewith, which was not competitively bid and awarded by the agency pursuant to applicable Oklahoma statutes.**



Supplier Authorized Signature

5/31/16

Certified This Date

Jennifer Cobb

Printed Name

Sales Coordinator

Title

817-636-2365

Phone Number

jicobb@nationalbussales.com

Email

817-636-2947

Fax Number



Amendment of Solicitation

Date of Issuance: 06/21/2016

Solicitation No. SW797 Additional Items

Requisition No. _____

Amendment No. 5

Hour and date specified for receipt of offers is changed: ☐ No ☒ Yes, to: July 12, 2016 3:00 PM CST/CDT

Pursuant to OAC 260:115-7-30(d), this document shall serve as official notice of amendment to the Solicitation identified above. Such notice is being provided to all suppliers to which the original solicitation was sent.

Suppliers submitting bids or quotations shall acknowledge receipt of this solicitation amendment prior to the hour and date specified in the solicitation as follows:

- (1) Sign and return a copy of this amendment with the solicitation response being submitted; or,
- (2) If the supplier has already submitted a response, this acknowledgement must be signed and returned prior to the solicitation deadline. All amendment acknowledgements submitted separately shall have the solicitation number and bid opening date printed clearly on the front of the envelope.

ISSUED BY and RETURN TO:

U.S. Postal Delivery or Personal or Common
Carrier Delivery:

Office of Management and Enterprise Services
Central Purchasing
5005 N. Lincoln Blvd., Ste. 300
Oklahoma City, OK 73105

Gerald Elrod
Contracting Officer

405 - 521 - 1037
Phone Number

Gerald.Elrod@omes.ok.gov
E-Mail Address

Description of Amendment:

a. This is to incorporate the following:

The following questions have been received and answered (see below and attached):

Question 1: (We have received several requests to extend)

Answer 1: Due to the delay in providing responses to the received questions, the RFP closing date has been extended to July 12, 2016. This will be the final extension.

Question 2: Award is "low bid", but they may negotiate & ask for BAFO - what does this mean?

Answer 2: All Suppliers should submit their lowest bid. Negotiation and BAFO terms are included in the event such a request is deemed necessary due to a conflict in terms and conditions or to clarify pricing, but in the case of such a request a Supplier will never be penalized for maintaining their lowest and best price.

Question 3: Bus quantity is indefinite - per FTA rules quantities must be identified mins and max numbers.

Answer 3: States are not required to give a minimum and maximum quantity. Furthermore, this is a Statewide contract from which individual purchase orders will be issued. Purchase orders will include the needed quantities.

Question 4: Bid expires 8-6-16; and has two 1-year renewals allowed with final expiration date as 8-6-18 - why not a 5 year agreement.

Answer 4: The contract period has been altered slightly (see below). The length of the contract term was decided at the discretion of the contract officer in order to keep the additional items in line with the rest of the contract.

Question 5: Delivery for the 30', 35', 40' CNG & Diesel buses is listed as 180 days; Trolley 120 days (if we are bidding on this one) - we cannot meet this delivery!

Description of Amendment - continuing

Answer 5: The delivery requirements are negotiable.

Question 6: There is an Administrative fee of 1% due from Gillig (not the customer) within 30 days after quarterly report is filled in by us (sample of form attached in specs) - Why?

Answer 6: This is an OMES Central Purchasing requirement on all statewide contracts and is used to cover the costs associated with managing contracts such as SW797.

Question 7: Missing in the specs are Acceptance & Payment terms, no PPI.

Answer 7: The State's Acceptance & Payment terms are listed in Section(s) A.17 and A.18, respectively.

Question 8: There have been several requests for deviation from the specifications requested in the RFP.

Answer 8: The State has listed their requirements in the solicitation, but a Supplier may submit alternate specifications. The State reserves the right to consider alternate specifications if they do not materially alter the scope of the RFP. In submitting an alternate bid, a Supplier must include a section in their response listing all deviations from the listed specifications and detailed explanations describing how the deviation is consistent with the scope of the RFP.

See attached for additional questions.

b. All other terms and conditions remain unchanged.

National Bus Sales & Leasing Inc
Supplier Company Name (PRINT)

7/8/16

Date

Jennifer Cobb
Authorized Representative Name (PRINT)

Sales Coordinator
Title


Authorized Representative Signature



Amendment of Solicitation

Date of Issuance: 6/17/2016

Solicitation No. SW797

Requisition No. SW797

Amendment No. 4

Hour and date specified for receipt of offers is changed: ☐ No ☒ Yes, to: 7/07/2016 3:00 PM CST/CDT

Pursuant to OAC 260:115-7-30(d), this document shall serve as official notice of amendment to the Solicitation identified above. Such notice is being provided to all suppliers to which the original solicitation was sent.

Suppliers submitting bids or quotations shall acknowledge receipt of this solicitation amendment prior to the hour and date specified in the solicitation as follows:

- (1) Sign and return a copy of this amendment with the solicitation response being submitted; or,
- (2) If the supplier has already submitted a response, this acknowledgement must be signed and returned prior to the solicitation deadline. All amendment acknowledgements submitted separately shall have the solicitation number and bid opening date printed clearly on the front of the envelope.

ISSUED BY and RETURN TO:

U.S. Postal Delivery or Personal or Common
Carrier Delivery:

Office of Management and Enterprise Services
Central Purchasing
5005 N. Lincoln Blvd., Ste. 300
Oklahoma City, OK 73105

Gerald Elrod
Contracting Officer

405 - 522 - 1037
Phone Number

Gerald.elrod@omes.ok.gov
E-Mail Address

Description of Amendment:

a. This is to incorporate the following:

The closing date has been Extended a couple weeks to July 7, 2016
An Amendment will be sent out next week, 6-21-16 with Q&A's

b. All other terms and conditions remain unchanged.

National Bus Sales & Leasing Inc

7/8/16

Supplier Company Name (PRINT)

Date

Jennifer Cobb

Sales Coordinator

Authorized Representative Name (PRINT)

Title


Authorized Representative Signature



Amendment of Solicitation

Date of Issuance: 06/02/2016

Solicitation No. SW797 Additional Items

Requisition No. _____

Amendment No. 3

Hour and date specified for receipt of offers is changed: ☐ No ☒ Yes, to: 06/21/2016 3:00 PM CST/CDT

Pursuant to OAC 260:115-7-30(d), this document shall serve as official notice of amendment to the Solicitation identified above. Such notice is being provided to all suppliers to which the original solicitation was sent.

Suppliers submitting bids or quotations shall acknowledge receipt of this solicitation amendment prior to the hour and date specified in the solicitation as follows:

- (1) Sign and return a copy of this amendment with the solicitation response being submitted; or,
- (2) If the supplier has already submitted a response, this acknowledgement must be signed and returned prior to the solicitation deadline. All amendment acknowledgements submitted separately shall have the solicitation number and bid opening date printed clearly on the front of the envelope.

ISSUED BY and RETURN TO:

U.S. Postal Delivery or Personal or Common
Carrier Delivery:

Office of Management and Enterprise Services
Central Purchasing
5005 N. Lincoln Blvd., Ste. 300
Oklahoma City, OK 73105

Gerald Elrod
Contracting Officer

405 - 521 - 1037
Phone Number

Gerald.Elrod@omes.ok.gov
E-Mail Address

Description of Amendment:

a. This is to incorporate the following:

The RFP closing date has been extended. The new closing date will be June 21, 2016.

b. All other terms and conditions remain unchanged.

National Bus Sales & Leasing Inc

Supplier Company Name (PRINT)

6/7/16

Date

Jennifer Cobb

Authorized Representative Name (PRINT)

Sales Coordinator

Title

Authorized Representative Signature



Amendment of Solicitation

Date of Issuance: 05/27/2016

Solicitation No. SW797 Additional Items

Requisition No. _____

Amendment No. 2

Hour and date specified for receipt of offers is changed: ☐ No ☒ Yes, to: 06/09/2016 3:00 PM CST/CDT

Pursuant to OAC 260:115-7-30(d), this document shall serve as official notice of amendment to the Solicitation identified above. Such notice is being provided to all suppliers to which the original solicitation was sent.

Suppliers submitting bids or quotations shall acknowledge receipt of this solicitation amendment prior to the hour and date specified in the solicitation as follows:

- (1) Sign and return a copy of this amendment with the solicitation response being submitted; or,
- (2) If the supplier has already submitted a response, this acknowledgement must be signed and returned prior to the solicitation deadline. All amendment acknowledgements submitted separately shall have the solicitation number and bid opening date printed clearly on the front of the envelope.

ISSUED BY and RETURN TO:

**U.S. Postal Delivery or Personal or Common
Carrier Delivery:**

Office of Management and Enterprise Services
Central Purchasing
5005 N. Lincoln Blvd., Ste. 300
Oklahoma City, OK 73105

Gerald Elrod
Contracting Officer

405 - 521 - 1037
Phone Number

Gerald.Elrod@omes.ok.gov
E-Mail Address

Description of Amendment:

a. This is to incorporate the following:

The RFP closing date has been extended. The new closing date will be June 9, 2016.

b. All other terms and conditions remain unchanged.

National Bus Sales & Leasing Inc

5/31/16

Supplier Company Name (PRINT)

Date

Jennifer Cobb

Sales Coordinator

Authorized Representative Name (PRINT)

Title

Authorized Representative Signature



Amendment of Solicitation

Date of Issuance: 05/02/2016

Solicitation No. SW797 Additional Items

Requisition No. _____

Amendment No. 1

Hour and date specified for receipt of offers is changed: ☐ No ☒ Yes, to: 06/02/2016 3:00 PM CST/CDT

Pursuant to OAC 260:115-7-30(d), this document shall serve as official notice of amendment to the Solicitation identified above. Such notice is being provided to all suppliers to which the original solicitation was sent.

Suppliers submitting bids or quotations shall acknowledge receipt of this solicitation amendment prior to the hour and date specified in the solicitation as follows:

- (1) Sign and return a copy of this amendment with the solicitation response being submitted; or,
- (2) If the supplier has already submitted a response, this acknowledgement must be signed and returned prior to the solicitation deadline. All amendment acknowledgements submitted separately shall have the solicitation number and bid opening date printed clearly on the front of the envelope.

ISSUED BY and RETURN TO:

U.S. Postal Delivery or Personal or Common
Carrier Delivery:

Office of Management and Enterprise Services
Central Purchasing
5005 N. Lincoln Blvd., Ste. 300
Oklahoma City, OK 73105

Gerald Elrod
Contracting Officer

405 - 521 - 1037
Phone Number

Gerald.Elrod@omes.ok.gov
E-Mail Address

Description of Amendment:

a. This is to incorporate the following:

The RFP closing date has been extended. The new closing date will be June 2, 2016. Additional time has also been given for questions and answers. The new deadline for all questions is 3:00PM, May 17, 2016. All questions should be submitted to the listed contract officer, in writing, prior to the question submission deadline.

b. All other terms and conditions remain unchanged.

National Bus Sales & Leasing Inc

Supplier Company Name (PRINT)

5/4/16

Date

Jennifer Cobb

Sales Coordinator

Authorized Representative Name (PRINT)

Title


Authorized Representative Signature

OKLAHOMA MOTOR VEHICLE COMMISSION



Certificate of License

282

THE OKLAHOMA MOTOR VEHICLE COMMISSION
has licensed

NATIONAL BUS SALES & LEASING, INC.
800 PICKENS DRIVE EXTENSION
MARIETTA, GEORGIA 30062

AS AN AUTHORIZED
Distributor

And is responsible for the management of its operations and
personnel as provided by the laws of the State of Oklahoma.

IN TESTIMONY WHEREOF WE SET OUR HAND AND CAUSE TO BE AFFIXED

THE SEAL OF THE
OKLAHOMA MOTOR VEHICLE COMMISSION

Dan Mullins
Chairperson

Roy K Dockum
Executive Director

Issue Date: 05/11/2015

Expires: 06/30/2016



NATIBUS-03

PATELV5

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

5/31/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Willis Insurance Services of Georgia, Inc. c/o 26 Century Blvd P.O. Box 305191 Nashville, TN 37230-5191	CONTACT NAME: Willis Towers Watson Certificate Center PHONE (A/C, No, Ext): (877) 945-7378 FAX (A/C, No): (888) 467-2378 E-MAIL ADDRESS: certificates@willis.com																					
INSURED National Bus Sales and Leasing, Inc. PO BOX 6549 Marietta, GA 30065	<table border="1"><thead><tr><th colspan="2">INSURER(S) AFFORDING COVERAGE</th><th>NAIC #</th></tr></thead><tbody><tr><td>INSURER A :</td><td>Travelers Indemnity Company</td><td>25658</td></tr><tr><td>INSURER B :</td><td>Travelers Property Casualty Company of America</td><td>25674</td></tr><tr><td>INSURER C :</td><td>Travelers Indemnity Company of CT</td><td>25682</td></tr><tr><td>INSURER D :</td><td></td><td></td></tr><tr><td>INSURER E :</td><td></td><td></td></tr><tr><td>INSURER F :</td><td></td><td></td></tr></tbody></table>	INSURER(S) AFFORDING COVERAGE		NAIC #	INSURER A :	Travelers Indemnity Company	25658	INSURER B :	Travelers Property Casualty Company of America	25674	INSURER C :	Travelers Indemnity Company of CT	25682	INSURER D :			INSURER E :			INSURER F :		
INSURER(S) AFFORDING COVERAGE		NAIC #																				
INSURER A :	Travelers Indemnity Company	25658																				
INSURER B :	Travelers Property Casualty Company of America	25674																				
INSURER C :	Travelers Indemnity Company of CT	25682																				
INSURER D :																						
INSURER E :																						
INSURER F :																						

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:		630- 8194B162-JND-15	10/01/2015	10/01/2016	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS					COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 10,000		CUP- 8194B162-TIL-15	10/01/2015	10/01/2016	EACH OCCURRENCE \$ 1,000,000 AGGREGATE \$ 1,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N Y N/A	UB-3F454246-16	01/01/2016	01/01/2017	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
B	Garage Liability		AD- 8194B162-15-CAG	10/01/2015	10/01/2016	See Attached

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

THIS CERTIFICATE VOIDS AND REPLACES PREVIOUSLY ISSUED CERTIFICATE DATED: 5/31/2016.

Contractual Liability is included under the General Liability policy.

Auto Liability is included in Garage Liability.

CERTIFICATE HOLDER

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

© 1988-2014 ACORD CORPORATION. All rights reserved.



**Oklahoma Department
of Transportation**

**TRANSIT
PROGRAMS
DIVISION**

**FTA'S
SPECIAL PROVISIONS
FOR THE PROCUREMENT OF CAPITAL EQUIPMENT
WITH AN ESTIMATED CUMULATIVE COST
IN EXCESS OF \$100,000**

STATEMENT OF FEDERAL PARTICIPATION

THIS PROCUREMENT IS DEPENDENT UPON THE AVAILABILITY OF FEDERAL FUNDS THROUGH THE FEDERAL TRANSIT ADMINISTRATION (FTA)

***PAGES 2 THRU 15 OF THIS DOCUMENT ARE TO BE COMPLETED BY
BIDDER/VENDOR***

***PAGES 18 THRU 24 OF THIS DOCUMENT ARE TO BE COMPLETED BY ODOT AT
TIME OF THE BID AWARD***

***PAGES 26 THRU 32 ARE TO BE COMPLETED BY THE PURCHASER AT THE
TIME OF VEHICLE DELIVERY***

**SPECIAL PROVISIONS FOR THE PROCUREMENT OF CAPITAL EQUIPMENT
USING FEDERAL FUNDS**

**THE FOLLOWING REQUIREMENTS AND CONDITIONS ARE INCLUDED AS AN
ESSENTIAL PART OF THE SPECIFICATIONS ATTACHED HERETO.**

SECTION I. FOR ALL BIDS:

**FMVSS CERTIFICATION - 49 CFR 571 Part D
(Circle all applicable standard #s)**

#	Title	#	Title
101	#*Controls and Displays	102	#*Transmission shift lever sequence, starter, interlock, transmission braking effect
103	#*Windshield defrost and defogging system	104	#*Windshield wiping and washing system.
105	#*Hydraulic brake system.	106	#*Brake hoses
107	#*Reflecting surfaces	108	#*Lamps, reflective devices, and assoc. equip.
109	#New pneumatic tires	110	#Tire selection and rims.
111	#*Rearview mirrors	112	#*Headlamps concealment devices.
113	#*Hood latch system	114	#Theft Protection (not for walk-in vans)
115	#*VIN -basic requirements.	116	#*Motor vehicle brake fluids.
117	#Re-treaded pneumatic tires (to be used on rear wheels only)	118	#Power-operated window, partition, roof panel system (GVWR < 10K)
119	*New pneumatic tires for vehicles other than passenger cars	119	*Tire selection & rims for vehicles other than passenger cars
121	*Air brake system	122	#*Accelerator control system.
129	#New non-pneumatic tires for passenger cars.	201	#@Occupant protection in interior impact
202	#@Head restraints	203	#@Impact protect, driver steering control system
204	#*Steering control rearward displace (not walk-in vans)	205	#*Glazing materials
206	#Doors, locks, and door retention components.	207	#*Seating system
208	#*Occupant crash protection	209	#*Seat belt assemblies.
210	#@Seat belt assembly anchorages.	211	#Wheels, nuts, wheel discs, and hub caps
212	#@Windshield mounting	213	#*Child restraint system.
214	#@Side Impact protection (not walk-in vans)	217	*Bus emergency. exits / window retention & release
219	#@Windshield zone intrusion	220	*School Bus rollover protection
301	#@Fuel system integrity (+School Bus >10K GVWR)	302	#*Flammability of interior materials.

The undersigned **BIDDER/VENDOR** hereby certifies that all vehicles furnished meet the **FMVSS IAW 49 CFR 571.**

Name of Company National Bus Sales & Leasing Inc	Date 5/27/16
Printed Name of Person Signing Form Jennifer Cobb, Sales Coordinator	Signature 

*Bus

@Bus with GVWR below 10,000 lbs.

#Passenger Car

In submitting this bid, the undersigned **BIDDER/VENDOR** as noted in Section III - Certification to Purchaser, certifies and agrees to the following clauses, assurances and certifications.

The **BIDDER/VENDOR** agrees to include these requirements in subcontracts financed in whole or in part by Federal Transit Administration funding. The bidder/vendor must execute all certifications below.

A. INCORPORATION of FEDERAL TRANSIT ADMINISTRATION (FTA) TERMS: The following provisions include, in part, certain Standard Terms and Conditions required by DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1E are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The **BIDDER/VENDOR** shall not perform any act, fail to perform any act, or refuse to comply with any **PURCHASER'S** requests which would cause the **PURCHASER** to be in violation of the FTA terms and conditions

B. FEDERAL CHANGES: **BIDDER/VENDOR** 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 Master Agreement between the **PURCHASER** and FTA, as they may be amended or promulgated from time to time during the term of this contract **BIDDER/VENDOR's** failure to so comply shall constitute a material breach in this contract.

C. DBE CERTIFICATION: The **BIDDER/VENDOR** complies with 49 CFR 26.49 regarding the transit vehicle manufacturer=s overall DBE goal.

D. AIR CONDITIONING PERFORMANCE: The **BIDDER/VENDOR** will provide vehicles that meet or exceed the performance requirements of the air conditioning system(s) as detailed in the specification.

E. INTEREST of MEMBERS of or DELEGATES to CONGRESS: The **BIDDER/VENDOR** certifies that no member of or delegate to the Congress of the United States shall be admitted to any share or part of this contract or to any benefit arising there from.

F. PROHIBITED INTEREST: The **BIDDER/VENDOR** certifies that no member, officer, or employee of the Public Body or of a local public body during his or her tenure or one year thereafter shall have any interest, direct or indirect, in this contract or the proceeds thereof.

G. CARGO PREFERENCE - USE of UNITED STATES-FLAG VESSELS: The **BIDDER/VENDOR** agrees: a. to use privately owned United States-Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to the underlying contract to the extent such vessels are available at fair and reasonable rates for United States-Flag commercial vessels; b. to furnish within 20 working days following the date of loading for shipments originating within the United States or within 30 working days following the date of leading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and to the FTA recipient (through the contractor in the case of a subcontractor's bill-of-lading.)

H. **ENERGY CONSERVATION:** The **BIDDER/VENDOR** agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

I. **CLEAN WATER & AIR:** The **BIDDER/VENDOR** agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. The **BIDDER/VENDOR** agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. 17401 et seq. The **BIDDER/VENDOR** agrees to report each violation to the **PURCHASER** and understands and agrees that the **PURCHASER** will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

J. **NO OBLIGATION by the FEDERAL GOVERNMENT:** The **PURCHASER** and **BIDDER/VENDOR** acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this contract and shall not be subject to any obligations or liabilities to the **PURCHASER**, **BIDDER/VENDOR**, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract.

K. **PROGRAM FRAUD and FALSE or FRAUDULENT STATEMENTS or REALTED ACTS:** The **BIDDER/VENDOR** acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this Project. The **BIDDER/VENDOR** certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the resultant contract or the FTA assisted project for which this work is being performed. The **BIDDER/VENDOR** further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the **BIDDER/VENDOR** to the extent the Federal Government deems appropriate. The **BIDDER/VENDOR** also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. 5307, the Government reserves the right to impose the penalties of 18 U.S.C. 1001 and 49 U.S.C. 5307(n)(1) on the **BIDDER/VENDOR**, to the extent the Federal Government deems appropriate.

L. **CONTRACT WORK HOURS:**

1. **Overtime requirements:** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. **Violation; liability for unpaid wages; liquidated damages:** In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefore shall be liable for unpaid wages. Such contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to

each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$ 10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

3. Withholding for unpaid wages and liquidated damages: The **PURCHASER** shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

4. Subcontracts: The contractor or subcontractor shall include the clauses set forth in this section and require the same from subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these clauses.

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

M. CIVIL RIGHTS:

1. Nondiscrimination: In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. ' 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. ' 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. ' 12132, and Federal transit law at 49 U.S.C. ' 5332, the **BIDDER/VENDOR** agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the **BIDDER/VENDOR** agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.

2. Equal Employment Opportunity: The following equal employment opportunity requirements apply:

Race, Color, Creed, National Origin, Sex - In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. ' 2000e, and Federal transit laws at 49 U.S.C. ' 5332, the **BIDDER/VENDOR** agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60 et seq ., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. ' 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The **BIDDER/VENDOR** agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the **BIDDER/VENDOR** agrees to comply with any implementing requirements FTA may issue. (b) Age - In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. ' ' 623 and Federal transit law at 49 U.S.C. ' 5332, the **BIDDER/VENDOR** agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the **BIDDER/VENDOR** agrees to comply with any implementing requirements FTA may issue. (c) Disabilities - In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. ' 12112, the **BIDDER/VENDOR** agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the **BIDDER/VENDOR** agrees to comply with any implementing requirements FTA may issue.

N. ALTOONA TEST CERTIFICATION: (Check one of the following):

- ☒ The vehicle has been Altoona tested, report number: LTI-BT-R1412
- ☐ The vehicle is exempt from testing in accordance with 49 CFR 665
- ☐ The vehicle is currently being tested at Altoona

O. DEBARMENT AND SUSPENSIONS: This contract is a covered transaction for purposes of 2 CFR Part 1200, which adopts and supplements the provisions of U.S. Office of Management and Budget (U.S. OMB) "Guidelines to Agencies on Governmentwide Debarment and Suspension (Nonprocurement)," 2 CFR Part 180. As such, the contractor is required to verify that none of the contractor, its principals, as defined at 2 CFR 180.995, or affiliates, as defined at 2 CFR 180.905, are excluded or disqualified as defined at 2 CFR 180.940, 180.935 and 180.945.

The **BIDDER/VENDOR** is required to comply with 2 CFR 180, Subpart C and must include the requirement to comply with 2 CFR 180, Subpart C in any lower tier covered transaction it enters into.

By signing and submitting its bid or proposal, the **BIDDER/VENDOR** or proposer certifies as follows:

The certification in this clause is a material representation of fact relied upon by the **Procuring Agency**. If it is later determined that the **BIDDER/VENDOR** or proposer knowingly rendered an erroneous certification, in addition to remedies available to **Procuring Agency**, the Federal Government may pursue available remedies, including but not limited to suspension and/or

FEDERAL TRANSIT BUS TEST

**Performed for the Federal Transit Administration U.S. DOT
In accordance with CFR 49, Volume 7, Part 665**

**Manufacturer: Double K Inc. dba Hometown Trolley
Model: Streetcar**

**Submitted for Testing in Service-Life Category
10Year /350,000 Miles**

JUNE 2015

Report Number: LTI-BT-R1412

PENNSSTATE



**The Thomas D. Larson
Pennsylvania Transportation Institute
201 Transportation Research Building
The Pennsylvania State University
University Park, PA 16802
(814) 865-1891**

**Bus Testing and Research Center
2237 Old Route 220 North
Duncansville, PA 16635
(814) 695-3404**

FEDERAL TRANSIT BUS TEST

Performed for the Federal Transit Administration U.S. DOT
1200 New Jersey Avenue, SE
Washington, DC 20590

In accordance with CFR 49, Volume 7, Part 665

Manufacturer: Double K Inc. dba Hometown Trolley

Manufacturer's address: 750 Industrial Parkway
PO Box 185
Crandon, WI 54520

Model: Streetcar

Submitted for Testing in Service-Life Category
10 Year /350,000 Miles

Report Number: LTI-BT-R1412




Quality Authorization

Director, Bus Research
and Testing Center
Title

6/24/15
Date

TABLE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	4
ABBREVIATIONS	6
BUS CHECK-IN	7
 1. MAINTAINABILITY	
1.1 ACCESSIBILITY OF COMPONENTS AND SUBSYSTEMS	22
1.2 SERVICING, PREVENTATIVE MAINTENANCE, AND REPAIR AND MAINTENANCE DURING TESTING	25
1.3 REPLACEMENT AND/OR REPAIR OF SELECTED SUBSYSTEMS	30
2. RELIABILITY - DOCUMENTATION OF BREAKDOWN AND REPAIR TIMES DURING TESTING	35
3. SAFETY - A DOUBLE-LANE CHANGE (OBSTACLE AVOIDANCE TEST)	38
 4. PERFORMANCE TESTS	
4.1 PERFORMANCE - AN ACCELERATION, GRADEABILITY, AND TOP SPEED TEST	41
4.2 PERFORMANCE – BUS BRAKING PERFORMANCE TEST	45
 5. STRUCTURAL INTEGRITY	
5.1 STRUCTURAL STRENGTH AND DISTORTION TESTS - STRUCTURAL SHAKEDOWN TEST	51
5.2 STRUCTURAL STRENGTH AND DISTORTION TESTS - STRUCTURAL DISTORTION	55
5.3 STRUCTURAL STRENGTH AND DISTORTION TESTS - STATIC TOWING TEST	67
5.4 STRUCTURAL STRENGTH AND DISTORTION TESTS - DYNAMIC TOWING TEST	68
5.5 STRUCTURAL STRENGTH AND DISTORTION TESTS - JACKING TEST	71
5.6 STRUCTURAL STRENGTH AND DISTORTION TESTS - HOISTING TEST	73
5.7 STRUCTURAL DURABILITY TEST	75
6. FUEL ECONOMY TEST - A FUEL CONSUMPTION TEST USING AN APPROPRIATE OPERATING CYCLE	90
 7. NOISE	
7.1 INTERIOR NOISE AND VIBRATION TESTS	105
7.2 EXTERIOR NOISE TESTS	110
8. EMISSIONS	116

EXECUTIVE SUMMARY

Double K Inc., dba Hometown Trolley submitted a model Streetcar, diesel-powered 30 seat (including the driver) 36-foot trolley, for a 10 yr./350,000 mile STURAA test. The odometer reading at the time of delivery was 4,921 miles. Testing started on January 5, 2015 and was completed on June 19, 2015. The Check-In section of the report provides a description of the bus and specifies its major components.

The primary part of the test program is the Structural Durability Test, which also provides the information for the Maintainability and Reliability results. The Structural Durability Test was started on January 15, 2015 and was completed on May 22, 2015.

The interior of the bus is configured with seating for 30 passengers including the driver. Note: This test trolley is not designed to accommodate standing passengers, therefore there is no free floor space. The resulting potential load is 30 persons. At 150 lbs. per person, this load results in a measured gross vehicle weight of 28,760 lbs. The first segment of the Structural Durability Test was performed with the bus loaded to a GVW of 28,760 lbs. The middle seated load weight segment was performed at the 28,760 lbs. Note; GVW and SLW are the same due to no standing passengers. And the final segment was performed at a curb weight of 23,920 lbs. Durability driving resulted in unscheduled maintenance and failures that involved a variety of subsystems. A description of failures, and a complete and detailed listing of scheduled and unscheduled maintenance are provided in the Maintainability section of this report.

Effective January 1, 2010 the Federal Transit Administration determined that the total number of simulated passengers used for loading all test vehicles will be based on the full complement of seats and free-floor space available for standing passengers (150 lbs. per passenger). The passenger loading used for dynamic testing will not be reduced in order to comply with Gross Axle Weight Ratings (GAWR's) or the Gross Vehicle Weight Ratings (GVWR's) declared by the manufacturer. Cases where the loading exceeds the GAWR and/or the GVWR will be noted accordingly. During the testing program, all test vehicles transported or operated over public roadways will be loaded to comply with the GAWR and GVWR specified by the manufacturer.

Accessibility, in general, was adequate. Components covered in Section 1.3 (Repair and/or Replacement of Selected Subsystems) along with all other components encountered during testing, were found to be readily accessible and no restrictions were noted.

The Reliability section compiles failures that occurred during Structural Durability Testing. Breakdowns are classified according to subsystems. The data in this section are arranged so that those subsystems with more frequent problems are apparent. The problems are also listed by class as defined in Section 2. The test bus encountered no Class 1 or Class 2 failures. Of the 15 reported failures, 9 were Class 3 and 6 were Class 4.

The Safety Test (a double-lane change, obstacle avoidance test) was safely performed in both right-hand and left-hand directions up to a maximum test speed of 45 mph. The performance of the bus is illustrated by a speed vs. time plot. Acceleration

and gradeability test data are provided in Section 4, Performance. The average time to obtain 50 mph was 27.40 seconds. Top speed obtained on the dynamometer was 67.5 mph. The Stopping Distance phase of the Brake Test was completed with the following results; for the Uniform High Friction Test average stopping distances were 26.16' at 20 mph, 51.00' at 30 mph, 86.12' at 40 mph and 112.95' at 45 mph. The average stopping distance for the Uniform Low Friction Test was 28.63'. There was no deviation from the test lane during the performance of the Stopping Distance phase. During the Stability phase of Brake Testing the test bus experienced no deviation from the test lane during both approaches to the Split Friction Road surface. The Parking Brake phase was completed with the test bus maintaining the parked position for the full five minute period with no slip or roll observed in both the uphill and downhill positions.

The Shakedown Test produced a maximum final loaded deflection of 0.045 inches with a permanent set ranging between -0.001 to 0.005 inches under a distributed static load of 11,250 lbs. The Distortion Test was completed with all subsystems, doors and escape mechanisms operating properly. No water leakage was observed throughout the test. All subsystems operated properly.

The test trolley was designed with no tow eyes or tow hooks, therefore the Static Towing Test was not performed. The Dynamic Towing Test was performed by means of a front-lift tow. The towing interface was accomplished using a hydraulic under-lift wrecker. The bus was towed without incident and no damage resulted from the test. The manufacturer does not recommend towing the bus from the rear, therefore, a rear test was not performed. The Jacking and Hoisting Tests were also performed without incident. The bus was found to be stable on the jack stands, and the minimum jacking clearance observed with a tire deflated was 3.7 inches.

A Fuel Economy Test was run on simulated central business district, arterial, and commuter courses. The results were 3.69 mpg, 4.29 mpg, and 7.87 mpg respectively; with an overall average of 4.56 mpg.

A series of Interior and Exterior Noise Tests was performed. These data are listed in Section 7.1 and 7.2 respectively.

The Emissions Test was performed. These results are available in Section 8 of this report.

ABBREVIATIONS

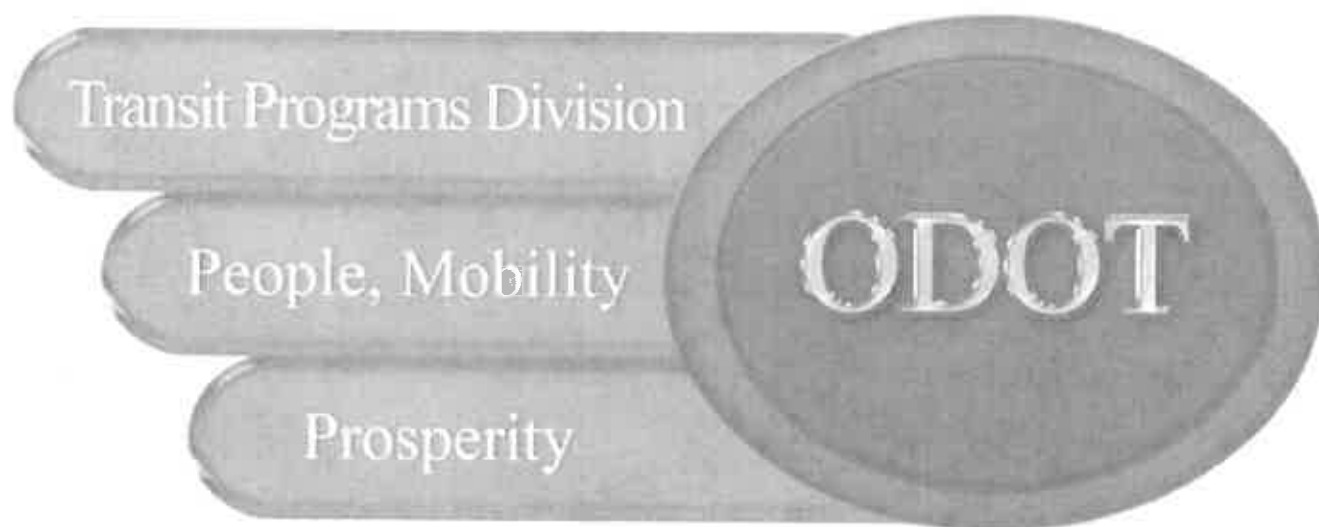
ABTC	- Altoona Bus Test Center
A/C	- air conditioner
ADB	- advance design bus
ATA-MC	- The Maintenance Council of the American Trucking Association
CBD	- central business district
CW	- curb weight (bus weight including maximum fuel, oil, and coolant; but without passengers or driver)
dB(A)	- decibels with reference to 0.0002 microbar as measured on the "A" scale
DIR	- test director
DR	- bus driver
EPA	- Environmental Protection Agency
FFS	- free floor space (floor area available to standees, excluding ingress/egress areas, area under seats, area occupied by feet of seated passengers, and the vestibule area)
GVL	- gross vehicle load (150 lb. for every designed passenger seating position, for the driver, and for each 1.5 sq. ft. of free floor space)
GVW	- gross vehicle weight (curb weight plus gross vehicle load)
GVWR	- gross vehicle weight rating
MECH	- bus mechanic
mpg	- miles per gallon
mph	- miles per hour
PM	- Preventive maintenance
PSTT	- Penn State Test Track
PTI	- Pennsylvania Transportation Institute
rpm	- revolutions per minute
SAE	- Society of Automotive Engineers
SCH	- test scheduler
SA	- staff assistant
SLW	- seated load weight (curb weight plus 150 lb. for every designed passenger seating position and for the driver)
STURAA	- Surface Transportation and Uniform Relocation Assistance Act
TD	- test driver
TECH	- test technician
TM	- track manager
TP	- test personnel

debarment. The bidder or proposer agrees to comply with the requirements of 2 CFR 180, Subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The **BIDDER/VENDOR** or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

The Procuring Agency agrees and assures that its third party contractors and lessees will review the "Excluded Parties Listing System" at <http://epls.gov/> before entering into any subagreement, lease or third party contract.

The Procuring Agency will be reviewing all third party contractors under the Excluded Parties Listing System at <http://epls.gov/> before entering into any contracts.

FEDERAL FUNDS WILL NOT BE RELEASED UNTIL THE PURCHASING AGENCY RECEIVES A COPY OF THE ALTOONA TEST REPORT IF REQUIRED IN ACCORDANCE WITH 49 CFR 665



SECTION II

A. BUY AMERICA CERTIFICATION:

BIDDER/VENDOR to complete the Buy America Certification listed below. **BIDDER/VENDOR** shall certify **EITHER COMPLIANCE OR NON-COMPLIANCE** (not both).

Certification requirement for procurement of buses, other rolling stock, and associated equipment.

Certificate of Compliance with 49 U.S.C. 5323(j)(2)(C)

The bidder/vendor or offer or hereby certifies that it **will meet** the requirements of 49 U.S.C. 5323(j)(2)(C) and the regulations at 49 C.F.R. Part 661.11.

Signature 

Company Name National Bus Sales & Leasing Inc

Title Sales Coordinator

Date 5/27/16

Certificate of Non-Compliance with 49 U.S.C. 5323(j)(2)(C)

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

Signature _____

Company Name _____

Title _____

Date _____

Instructions:

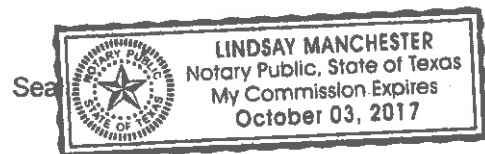
Special Note: Make sure you have signed only one of the above statements -- either Compliance OR Non-Compliance (not both).

Subscribed and sworn to before me this 27 day of May 2016.


Notary Public

129581683
My Commission Number

10/3/2017
Commission Expiration Date



This form MUST be prepared and signed by the offeror/vendor and submitted with all bids or offers on FTA-funded contracts. Bids or offers not accompanied by this form will be REJECTED

PRE-AWARD PURCHASER'S REQUIREMENTS CERTIFICATION

As required by Title 49 of the CFR, Part 663 – Subpart B, The Oklahoma Department of Transportation (the recipient) certifies that the buses to be purchased, (TBD) Trolley buses (number and description of buses) from Double K, Inc. (the manufacturer), are the same product described in the recipient's solicitation specification and that the proposed manufacturer is a responsible manufacturer with the capability to produce a bus that meets the specifications.

Date: 5.24.16

Signature:

A handwritten signature in cursive script that reads "Kristina Pence-Dunow".

Title: President

B. DOMESTIC CONTENT WORKSHEET:

(Typical Components of Buses from Appendix B to 49 CFR Sec. 661.11, an itemized component listing from the **manufacturer** that verifies compliance with the Buy America Provisions may be submitted in lieu of this form)

If you plan on using another components listing, you must include it with your bid and place an X in the following box. ☒

I. Components	% Domestic	X % Value	Dom. Value
engines			
transmissions			
front axle assemblies			
rear axle assemblies			
drive shaft assemblies			
front suspension assemblies			
rear suspension assemblies			
air compressor and pneumatic systems			
generator, alternator & electrical systems			
steering system assemblies			
front and rear air brake assemblies			
air conditioning compressor assemblies			
air conditioning evaporator/condenser assemblies			
heating systems.			
passenger seats			
driver's seat assemblies			
window assemblies			
entrance and exit door assemblies			
door control systems			
destination sign assemblies			
interior lighting assemblies			
front and rear end cap assemblies			
front and rear bumper assemblies			
specialty steel (structural steel tubing etc.) and aluminum extrusions			
aluminum, steel or fiberglass exterior panels and interior trim			
flooring and floor coverings			
TOTAL DOMESTIC CONTENT OF COMPONENTS (%)			

Oklahoma Department of Transportation**STREETCAR –REAR ENGINE LOW FLOOR TROLLEY****BUY AMERICA AUDIT**

Double K, Inc. dba Hometown Trolley is a family owned business of 35+ years and is 100% U.S. owned and operated, as well as certified WI Dot, WBE and DBE 100% owned and operated. Our facility is located in the USA. Our policy is to strive for use of products produced in the USA in our trolley buses.

Pursuant to 49CRF Part 661, no funds shall be originated under the Federal Transit Act of 1992, as amended, unless steel, iron and manufacturer's products used in such products are produced in the United States.

<u>Component</u>	<u>Supplier</u>	<u>Manufacturer Installer</u>	<u>Country of Origin</u>	<u>Percentage of total Material Cost</u>
Chassis and Drive Train (Chassis and Drive Train)	Freightliner	Hometown Trolley	USA	36%
Steel Framing/Fabrication				
Steel	Londerville	Hometown Trolley	USA	2%
Aluminum/Stainless Braatz		Hometown Trolley	USA	2%
Aluminum Sheets	Londerville	Hometown Trolley	USA	3%
Trim Work	AMC	Hometown Trolley	USA	1%
Flooring				
Transit Rubber	Altro	Hometown Trolley	USA	.5%
Sub Floor	Space Age	Hometown Trolley	USA	1%
Paint and Finish				
Paint	Paul's Paint	Hometown Trolley	USA	2.5%
Windows	TPI	Hometown Trolley	USA	3%
Oak Panels & Trim	Argonne Lumber	Hometown Trolley	USA	2.5%
Heating Systems	Pro Air	Hometown Trolley	USA	1.5%
Sound Systems	Radio Engineering Inc	Hometown Trolley	USA	.7%
Wiper System	Illinois Auto Electric	Hometown Trolley	USA	.7 %
Mirrors	Ramco	Hometown Trolley	USA	1%

**BIDDER'S CERTIFICATE
BUY AMERICA**

Pursuant to 49CRF Part 661, no funds shall be originated under the Federal Transit Act of 1992, as amended, unless steel, iron and manufacturer's products used in such products are produced in the United States.

<u>Component</u>	<u>Supplier</u>	<u>Manufacturer</u>	<u>Country of Origin</u>	<u>Percentage of total Material Cost</u>
Electrical	RC Tronics	Hometown Trolley	USA	.5%
	Apex	Apex	USA	2%
	Terminal Supply	Hometown Trolley	USA	3%
Doors Actuator/Bearings	A & M	Hometown Trolley	USA	.5%
	A & M	Hometown Trolley	USA	.5%
	Vapor	Hometown Trolley	USA	2%
Seating				
	Freedman Seating	Hometown Trolley	USA	1%
Gong Bell	WL Jenkins	Hometown Trolley	USA	.2%
Wheel Chair Lift	Ricon	Hometown Trolley	USA	2.5%
ADA Restraints	Q Straint	Hometown Trolley	USA	1%
Bike Rack	Sportsworks	Hometown Trolley	USA	.25%
Air Conditioning	MCC	Hometown Trolley	USA	2%
LED Destination Signs	Luminator	Hometown Trolley	USA	1%
APC,AVL, APU	Trapeze	Hometown Trolley	USA	5%
Fare Box	Gen Fare	Hometown Trolley	USA	2%
Cameras	Safety Vision	Hometown Trolley	USA	1%
Fire Suppression	Afex	Hometown Trolley	USA	.5%
Total				74.35%
Final Assembly, Shipping and Delivery Costs				25.65%

The following is a description of the actual location of the final assembly point including a description of the activities that will take place at the final assembly point and the cost of the final assembly:

All assembly takes place at the factory of Double K, Inc. at 750 Industrial Parkway Crandon, WI 54520.

All components are shipped to factory or fabricated by Double K, Inc.

Assembly is as follows:

Upon Receiving Chassis and all components and supplies fabrication begins by

1. Prep work to chassis, chassis low floor modification.
2. Fabrication of walls, floor, roof and small parts
3. Assembly all parts on chassis, fabricate supports and bushings, wheel tubs etc.
4. When all fabrication is complete, framing is washed and primed with 670 HS Azko Nobel Bridge Primer
5. Sika Flex 552 adhesive is applied to all tubes and sheeting is installed
6. All trim work is installed
7. Prep for paint
8. Paint process (see specifications)
9. Trolley is then brought to finishing
10. Flooring is prepped for RCA transit rubber flooring
11. All oak panels and trim work is installed
12. Windows installed
13. Heating, A/C, Electrical, Sound, and Wiper systems are installed.
14. All seating is installed
15. Pin striping and detail work is completed

*All stages of work are inspected and signed off on a detailed inspection sheet before moving on to the next stage. A 2-day final inspection and drive test will take place before Trolley is released for delivery.

***See attached specification for a further detailed building process of our Double K, Inc. trolley buses.**

DOUBLE K, INC. / HOMETOWN TROLLEY APPROVED VENDOR LIST

<u>VENDOR NAME</u>	<u>ADDRESS</u>	<u>CITY,STATE</u>	<u>ZIP CODE</u>
AMERHART	P.O. BOX 10097	GREEN BAY, WI	54307
A & M	P.O. BOX 89	ELKHART, IN	46517
AMC	440 RAMSEY AVE	CHAMBERSBURG, PA	17201
ALTRO	1735 TECHNOLOGY DR, SUITE 720	SAN JOSE, CA	95110
AFEX.	5808 LEASE LN	RALEIGH, NC	27617
APEX	N2812 ALPHORN LN	APPLETON,WI	54913
BRAATZ	P.O. BOX 208	SHAWANO, WI	54166
DEARCO	1495 E. GREEN BAY STREET	SHAWANO, WISCONSIN	54166
FREEDMAN SEATING	4545 W. AUGUSTA BLVD	CHICAGO, IL	60651
FREIGHTLINER	552 HYATT ST	GAFFNEY, SC	29341
GENFARE	751 PRATT BOULEVARD	ELK GROVE VILLAGE, IL	60007
ILLINOIS AUTO ELECTRIC	700 ENTERPRISE STREET	AURORA, IL	60504
IMPERIAL	P.O. BOX 23910	GREEN BAY, WI	54305
KINGS RIVER CASTINGS	1350 NORTH AVE,	SANGER, CA	93657
LONDERVILLE	12402 WOODLAND DR	WAUSAU, WI	54401
LUMINATOR	25969 NETWORK HOLDING LP	CHICAGO, IL	60673
PAUL'S PAINT	4710 CAMP PHILLIPS RD	SCHOFIELD, WI	54476

APPROVED
VENDOR LIST
(continued)

<u>VENDOR NAME</u>	<u>ADDRESS</u>	<u>CITY,STATE</u>	<u>ZIP CODE</u>
PRO AIR	28731 C.R.6	ELKHART, IN	46514
RAMCO	52965 FREDRIC DR	ELKHART, IN	46514
RCTRONICS	2573 EAST KERCHER RD.	GOSHEN, IN	46528
RICON	7900 NELSON RD	OPANORAMA CITY, CA	91402
SPACEAGE	1402 39 TH ST N.W	FARGO, ND	58102
SPORTWORKS	15540 WOOD RED RD NE/#A-200	WOODINVILLE, WA	98072
TPI	P.O. BOX 586	EVERGREEN, AL	36401
TERMINAL SUPPLY	1800 THUNDERBIRD	TROY, MI	48084
TRAPEZE GROUP	280 GOLDEN OAK COUT SUITE 250	VIRGINIA BEACH, VA	23452
WL JENKINS	1445 WIPPLE AVE SW	CANTON, OH	44710

PRE-AWARD BUY AMERICA COMPLIANCE CERTIFICATION

As required by Title 49 of the CFR, Part 663 – Subpart B, Oklahoma Department of Transportation (the recipient) is satisfied that the buses to be purchased, TBD Trolley Buses VIN#'S: TBD (number and description of buses) from Double K, Inc. dba Hometown Trolley, (the manufacturer), meet the requirements of Section 165(b)(3) of the Surface Transportation Assistance Act of 1982, as amended. Oklahoma Department of Transportation, or its appointed analyst the analyst – not the manufacturer or its agent), has reviewed documentation provided by the manufacturer, which lists (1) the proposed component and subcomponent parts of the buses identified by manufacturer, country of origin, and cost; and (2) the proposed location of the final assembly point for the buses, including a description of the activities that will take place at the final assembly point and the cost of final assembly.

Date: 5.24.16

Double K, Inc.


Signature:

Kristina Ponce-Munoz

Title: President

B. CONTINUED DOMESTIC CONTENT WORKSHEET:

II. Construction Activities (Describe Activities)	
Trolley Upfit	
Location of Construction Activities:	% OF DOMESTIC CONSTRUCTION ACTIVITIES:
Crandon, WI	74.35

Hometown Trolley	Streetcar	Current
Vehicle Manufacturer	Model	Model Year
National Bus Sales		5/27/16
Vendor Name	Signature	Date



C. LOBBYING:

The **BIDDER/VENDOR** certifies compliance with the Anti-Lobbying amendment, 31 U.S.C. ' 1352, as amended by the Lobbying Disclosure Act of 1995, Public Law 104-65 [to be codified at 2 U.S.C. ' 1601, et seq.]. The **BIDDER/VENDOR** also certifies that it will execute the following, "Certification Regarding Lobbying", as required by 49 CFR Part 20, AA New Restriction on Lobbying.e

EXECUTE THE FOLLOWING

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements
(To be submitted with each bid or offer exceeding \$100,000)

The undersigned,

National Bus Sales & Leasing Inc

(Bidder/Vendor)

certifies, to the best of his or her knowledge and belief, that:

A. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a 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.

B. If any funds other than Federal appropriated funds have been paid or will be paid to any person for making lobbying contacts to an officer or employee of any agency, a 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 [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/96). Note: Language in paragraph "B" herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (Public Law 104-65, to be codified at 2 U.S.C. ' 1601, et seq.)]

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

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. ' 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

C. CONTINUED LOBBYING:

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.

National Bus Sales & Leasing Inc

(Bidder/Vendor)

certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the **BIDDER/VENDOR** understands and agrees that the provisions of 31 U.S.C. § 3801, et seq., apply to this certification and disclosure, if any.



Signature of BIDDER/VENDOR's Authorized Official

Jennifer Cobb, Sales Coordinator

Name and Title of BIDDER's Authorized Official

5/27/16

Date



SECTION III


CERTIFICATION TO PURCHASER:

The undersigned **BIDDER/VENDOR** certifies that the vehicle(s) furnished will meet or exceed the specifications.

The **BIDDER/VENDOR** hereby certifies that it has attached all applicable documentation including:

- ✓ 1. Federal Motor Vehicle Safety Standards (FMVSS)
- ✓ 2. Altoona Test Certification
- ✓ 3. Buy America Certification Form
- ✓ 4. Domestic Content Worksheet
- ✓ 5. Lobbying Certification Form
- ✓ 6. Government wide Debarment & Suspension Certification Form
- ✓ 7. Certification to Purchaser Form
- ✓ 8. Drawing of proposed floor plan.
- ✓ 9. Printed product literature of the vehicle and all ancillary equipment

The undersigned **BIDDER/VENDOR** certifies that it has read all of the bid documents and agrees to abide by the terms, certifications, and conditions thereof.

Name of Company: National Bus Sales & Leasing Inc	Printed Name of Person Completing Form: Jennifer Cobb
Address: (City, State, Zip) 15580 Hwy 114 Justin, TX 76247	SS# or Tax ID #: 58-1216021
Telephone: (Area Code) 800.282.7981	Signature: 

Disadvantaged Business Enterprise Information (DBE)	Bidders type of organization (circle)	
Is your firm a DBE?	Sole Proprietorship	General Proprietorship
(yes) (no)	Corporation	Limited Partnership
If yes, what type?	Other? Please List	

BIDDER/VENDOR CHECKLIST

THE FOLLOWING CHECKLIST MUST BE COMPLETED BY THE BIDDER/VENDOR BEFORE THE BID IS SUBMITTED.

This checklist will be used to ensure that all required procurement clauses and certifications listed within these special provisions have been read, initialed, and signed by the Bidder/Vendor along with any necessary signed certifications.

Section I. FOR ALL BIDS:

Bidder's initial all lines below:

- FMVSS CERTIFICATION:** Circled all applicable Standards & Signed?
- A. **Incorporation of Federal Transit Administration Terms:** Read?
 - B. **Federal Changes:** Read?
 - C. **DBE Certification:** Read?
 - D. **Air Conditioning Performance:** Read?
 - E. **Interest of Members of or Delegates to Congress:** Read?
 - F. **Prohibited Interest:** Read?
 - G. **Cargo Preference:** Read?
 - H. **Energy Conservation:** Read?
 - I. **Clean Water and Air:** Read?
 - J. **No Obligation By the Federal Government:** Read?
 - K. **Program Fraud and False or Fraudulent Statements:** Read?
 - L. **Contract Work Hours:** Read?
 - 1. Overtime requirements:
 - 2. Violation; liability for unpaid wages:
 - 3. Withholding for unpaid wages:
 - 4. Subcontracts:
 - 5. Payrolls and basic records:
 - M. **Civil Rights:** Read?
 - 1. Nondiscrimination:
 - 2. Equal Employment Opportunity:
 - N. **Altoona Test Certification:** Completed the following?
 - 1. Report Summary enclosed? Attached?
 - 2. Report # LT1-BT-R1412 : Completed?
 - O. **Debarment and Suspensions:** Read & Understood?
 - 1. EPLS Report www.epls.gov (Must Not be Debarred)

CONTINUED BIDDER/VENDOR CHECKLIST

Section II.

- A. **Buy America Certification:** Completed and signed?
- B. **Domestic Content Worksheet:** Calculated, Completed & Signed?
- C. **Lobbying Certification signed:** Completed and signed?

Section III. **CERTIFICATION TO PURCHASER** Completed and signed?

I hereby attest that each item was reviewed and that my initials above indicate that the item was properly executed on this date.

National Bus Sales & Leasing Inc

Bidder/Vendor Company

5/27/16

Date

Jennifer Cobb, Sales Coordinator

Bidder/Vendor Representative

5/27/16

Date



Pre-Award Reviewer
Replace This Blank Page
With A Screen Print
Of The
EPLS Report

***NOTE: PAGES 18 THRU 24
ARE TO BE COMPLETED BY ODOT
AT TIME OF THE BID AWARD***

SECTION IV PRE AWARD AUDIT:

A. Purchaser's Certification - 49 CFR 663, subpart B:

The **bidder/vendor** has certified that the vehicle to be provided will be the same product as described in the advertised specification. (See attached consolidated certification form signed by the **bidder/vendor**, part III -A). ODOT certifies that the **bidder/vendor** is responsible and will provide a vehicle that will meet or exceed the specifications.

EXECUTE THE FOLLOWING

PRE-AWARD PURCHASER'S REQUIREMENTS CERTIFICATION

As required by Title 49 of the CFR, Part 663 – Subpart B,

(ODOT)

certifies that the buses to be purchased,

(Number and Description of Buses)

from

(The Manufacturer),

are the same product described in the recipient's solicitation specification and that the proposed **bidder/vendor** is a responsible **bidder/vendor** with the capability to produce a bus that meets the specifications.

Date:

Signature:

Title:

B. BUY AMERICA - 49 CFR 663, subpart B:

The total price of this purchase is less than the small purchase threshold of \$100,000 and is not subject to Buy America requirements. **OR**

The vehicles provided by the **bidder/vendor** (# of vehicles, make, and model) cannot comply with the Buy America requirements, but may qualify for an exception (see attached consolidated certification form signed by the **bidder/vendor**, part II-A).. **OR**

The **bidder/vendor** has certified that the vehicles (# of vehicles, make, and model) will comply with the Buy America requirements. (See attached consolidated certification form signed by the **bidder/vendor**, part II-A). The **bidder/vendor** has also completed the attached domestic content worksheet. (Or the **bidder/vendor** has provided a certificate from the manufacturer that lists the domestic content of each component, states that the vehicle is composed of at least 60% domestic content, describes construction activities, and gives the location of construction activities.) The agency certifies that the vehicles provided will meet the Buy America requirements.

NOTE: Only one of the following Certifications should be signed, not both.

PRE-AWARD BUY AMERICA COMPLIANCE CERTIFICATION:

As required by Title 49 of the CFR, Part 663 – Subpart B,

(ODOT)

is satisfied that the buses to be purchased,

(Number and Description of Buses)

from

(The Manufacturer)

meet all requirements of Section 165(b)(3) of the Surface Transportation Assistance Act of 1982, as amended. The recipient, or its appointed analyst

(The Analyst Not the Manufacturer or Its Agent)

has reviewed documentation provided by the **manufacturer**, which lists (1) the actual component and subcomponent parts of the buses identified by the **manufacturer**, country of origin, and cost; and (2) the actual location of the final assembly point for the buses, including a description of the activities that took place at the final assembly point and the cost of final assembly.

Date:

Signature:

Title:

OR

**If not applicable, execute the following exemption certification
On next page**

B. PRE-AWARD BUY AMERICA EXEMPTION CERTIFICATION

For the Procurement of vehicle(s) that require an FTA waiver:

As required by Title 49 of the CFR, Part 663 – Subpart B,

(ODOT)

certifies that there is a letter from FTA that grants a waiver to the buses to be purchased

(Manufacturer, Number and Description of Buses)

from the Buy America requirements under Section 165(b)(1), (b)(2), or (b)(4) of the Surface Transportation Assistance Act of 1982, as amended.

Date:

Signature:

Title:

C. FEDERAL MOTOR VEHICLE SAFETY STANDARDS (FMVSS) - 49 CFR 663, subpart D:

The **bidder/vendor** has certified that the vehicle complies with relevant **FMVSS** issued by the National Highway Traffic Safety Administration in 49 CFR Part 571 (see attached **FMVSS** certification form signed by **bidder/vendor**). The **PURCHASER** certifies that the vehicles that the vehicles will meet **FMVSS**.

EXECUTE THE FOLLOWING:

EXECUTE THE FOLLOWING (Only one of the following FMVSS Certifications should be signed, not both.

PRE-AWARD FMVSS COMPLIANCE CERTIFICATION:

As required by Title 49 of the CFR, Part 663 – Subpart D,

(ODOT)

certifies that it received, at the post-delivery stage, a copy of

(The Manufacturer)

self-certification information stating that the buses,

(Manufacturer, Number and Description of Buses)

comply with the relevant Federal Motor Vehicle Safety Standards issued by the National Highway Traffic Safety Administration in Title 49 Code of Federal Regulations, Part 571.

Date:

Signature:

Title:

OR

NEXT PAGE

C. PRE-AWARD FMVSS EXEMPTION CERTIFICATION:

As required by Title 49 of the CFR, Part 663 – Subpart D,

(ODOT)

certifies that it received at the pre-award stage, a statement from

(The Manufacturer)

indicated that the buses,

(Number and Description of Buses)

will not be subject to the Federal Motor Vehicle Safety Standards issued by the National Highway Traffic Safety Administration in Title 49 Code of Federal Regulations, Part 571.

Date:

Signature:

Title:

PRE- AWARD CHECKLIST:

THE FOLLOWING CHECKLIST IS TO BE COMPLETED BY THE BUYER AND ODOT PERSONNEL BEFORE BID IS AWARDED.

This checklist will be used to ensure that all required clauses and certifications are included in the vendor=s returned bid packet and that all required certifications have been signed by the vendor.

Section I. FOR ALL BIDS:

Buyer's initial all lines below:

FMVSS CERTIFICATION: Signed by Bidder/Vendor?

- A. **Incorporation of Federal Transit Administration Terms:** Initialed by Bidder? _____
- B. **Federal Changes:** Initialed by Bidder? _____
- C. **DBE Certification:** Initialed by Bidder? _____
- D. **Air Conditioning Performance:** Initialed by Bidder? _____
- E. **Interest of Members of or Delegates to Congress:** Initialed by Bidder? _____
- F. **Prohibited Interest:** Initialed by Bidder? _____
- G. **Cargo Preference:** Initialed by Bidder? _____
- H. **Energy Conservation:** Initialed by Bidder? _____
- I. **Clean Water and Air:** Initialed by Bidder? _____
- J. **No Obligation By the Federal Government:** Initialed by Bidder? _____
- K. **Program Fraud and False or Fraudulent Statements:** Initialed by Bidder? _____
- L. **Contract Work Hours:** Initialed by Bidder? _____
 - 1. Overtime requirements: _____
 - 2. Violation; liability for unpaid wages: _____
 - 3. Withholding for unpaid wages: _____
 - 4. Subcontracts: _____
 - 5. Payrolls and basic records: _____
- M. **Civil Rights:** Initialed by Bidder? _____
 - 1. Nondiscrimination: _____
 - 2. Equal Employment Opportunity: _____
- N. **Altoona Test Certification completed:** Initialed by Bidder? _____
 - 1. Report Summary enclosed? Attached to bid? _____
 - 2. Altoona Test Report # listed by Bidder? _____
- O. **Debarment and Suspensions:** Initialed by Bidder? _____
 - 1. **EPLS Report** from www.epls.gov: Attached to bid by Procuring Agency? _____

CONTINUED PRE- AWARD CHECKLIST:

Section II.

- A. **Buy America Certification signed:** Signed by Bidder/Vendor? _____
- B. **Domestic Content Worksheet signed:** Signed by Bidder/Vendor? _____
- C. **Lobbying Certification signed:** Signed by Bidder/Vendor? _____

Section III. CERTIFICATION TO PURCHASER:

- A. **Completed and signed?** _____

The previous checklist was to determine if the Bidder/Vendor read and completed all required necessary documentation. The following checklist is to determine if ODOT signed and completed the required Certifications.

Section IV. PRE AWARD AUDIT (signed by ODOT STAFF)

- A. **Purchaser=s Certification - 49 CFR 663, subpart B: Executed by ODOT?**
Pre-Award Purchaser's Requirements Certification: _____
- B. **Buy America - 49 CFR 663, subpart B: Executed by ODOT?**
Pre-Award Buy America Compliance Certification, or
Pre-Award Buy America Exemption Certification: _____
- C. **FMVSS - 49 CFR 663, subpart D: Executed by ODOT?**
Pre-Award FMVSS Compliance Certification, or
Pre-Award FMVSS Exemption Certification: _____

I hereby attest that each item was reviewed and that my initials above indicate that the item was properly executed on this date.

ODOT Date _____

ODOT Reviewer Date _____

***NOTE: PAGES 26 THRU 32
ARE TO BE COMPLETED BY THE PURCHASER
AT TIME OF VEHICLE DELIVERY***

SECTION V POST DELIVERY AUDIT:

A. Purchaser's Certification - 49 CFR 663, subpart C:

After visually inspecting and road testing the contract buses, the agency certifies that the (# of vehicles, make, and model) meet the contract specifications.

- or, Grantees in areas with populations of 200,000 or less that purchase more than 20 buses.

The agency's resident inspector monitored manufacturing and completed a report providing accurate records of all construction activities. The report addresses how the construction and operation of the vehicles fulfill the contract specifications. After reviewing the report, visually inspecting and road testing the contract buses, the agency certifies that the (# of vehicles, make, and model) meet the contract specifications.

EXECUTE THE FOLLOWING:

NOTE: Only one of the following Certifications should be signed, not both.

POST-DELIVERY PURCHASER'S REQUIREMENTS CERTIFICATION

As required by Title 49 of the CFR, Part 663 – Subpart C, after visually inspecting and road testing the contract buses,

(The Purchaser)

certifies that the buses,

(Number and the Description of Buses)

from

(The Manufacturer),

meet the contract specifications.

Date:

Signature:

Title:

OR

NEXT PAGE

A. POST-DELIVERY PURCHASER'S REQUIREMENTS CERTIFICATION:

As required by Title 49 of the CFR, Part 663 – Subpart C,

(The Purchaser)

certifies that a resident inspector,

(Not an Agent or Employee of the Manufacturer),

was at manufacturing site during the period of manufacture of

(Number and Description of Buses)

The inspector monitored manufacturing and completed a report on the manufacture of the buses providing accurate records of all bus construction activities. The report addresses how the construction and operation of the buses fulfill the contract specifications. After reviewing the report, visually inspecting the buses, and road testing the buses, the recipient certifies that the buses meet the contract specifications.

Date:

Signature:

Title:

B. BUY AMERICA - 49 CFR 663, subpart C:

The total price of this purchase is less than the small purchase threshold of \$100,000 and is not subject to Buy America requirements. **OR**

The agency certifies that there is a letter from FTA, which grants a waiver to the vehicles provided by the vendor (# of vehicles, make, and model) from the Buy America requirements, under Section 165 (b)(1), (b)(2), or (b)(4) of the Surface Transportation Assistance Act of 1982, as amended. **OR**

The agency certifies that it is satisfied that the (# of vehicles, make, and model) meet the requirements of Section 165 (b)(3) . The agency has reviewed documentation provided by the **manufacturer** that lists the domestic content of each component, states that the vehicle is composed of at least 60% domestic content, describes construction activities, and gives the location of final construction activities.

NOTE: Only one of the following Certifications should be signed, not both.

POST-DELIVERY BUY AMERICA COMPLIANCE CERTIFICATION:

As required by Title 49 of the CFR, Part 663 – Subpart C,

(The Purchaser)

certifies that the buses received are in fact what they ordered and are satisfied with the,

(Number and Description of Buses)

from

(The Manufacturer)

meet the requirements of section 165(b)(3) of the Surface Transportation Assistance Act of 1982, as amended. The recipient or its appointed analyst

(The Analyst Not the Manufacturer or Its Agent)

has reviewed documentation provided by the **manufacturer**, which lists (1) the actual component and subcomponent parts of the buses identified by the **manufacturer**, country of origin, and cost; and (2) the actual location of the final assembly point for the buses, including a description of the activities that took place at the final assembly point and the cost of final assembly.

Date:

Signature:

Title:

OR

If not applicable, execute the following exemption certification

On next page

C. FEDERAL MOTOR VEHICLE SAFETY STANDARDS (FMVSS) - 49 CFR 663, subpart D:

The vendor has certified that the vehicle complies with relevant FMVSS issued by the National Highway Traffic Safety Administration in 49 CFR Part 571 (see attached FMVSS certification form provided by the bidder upon vehicle delivery). The agency certifies that the vehicles provided meet FMVSS.

EXECUTE THE FOLLOWING:

NOTE: Only one of the following Certifications should be signed, not both.

POST-DELIVERY FMVSS COMPLIANCE CERTIFICATION:

As required by Title 49 of the CFR, Part 663 – Subpart D,

(The Purchaser)

certifies that it received, at the post-delivery stage, a copy of

(The Manufacturer)

self-certification information stating that the buses,

(Manufacturer, Number and Description of Buses)

comply with the relevant Federal Motor Vehicle Safety Standards issued by the National Highway Traffic Safety Administration in Title 49 Code of Federal Regulations, Part 571.

Date:

Signature:

Title:

OR

NEXT PAGE

C. POST-DELIVERY FMVSS EXEMPTION CERTIFICATION:

As required by Title 49 of the CFR, Part 663 – Subpart D,

(The Purchaser)

certifies that it received, at the Post-delivery stage, a statement from

(The Manufacturer)

indicating that the buses,

(Number and Description of Buses)

are not subject to the Federal Motor Vehicle Safety Standards issued by the National Highway Traffic Safety Administration in Title 49 Code of Federal Regulations, Part 571.

Date

Signature

Title

POST DELIVERY AUDIT

THE FOLLOWING CHECKLIST IS TO BE COMPLETED BY THE BUYER AND ODOT PERSONNEL BEFORE THE VEHICLE(S) ARE ACCEPTED.

Section V VEHICLE DELIVERY CHECKLIST: (to be signed by buyer upon acceptance of vehicle)

Buyer initials all lines below:

A. Purchaser's Certification - 49 CFR 663, subpart C:

Post-Delivery Purchaser's Requirements Certification or
Post-Delivery Purchaser's Requirements Certification (Inspector): _____

B. Buy America - 49 CFR 663, subpart C:

Post-Delivery Buy America Compliance Certification or
Post-Delivery Buy America Exemption Certification: _____

B. FMVSS - 49 CFR 663, subpart D:

Post-Delivery FMVSS Compliance Certification or
Post-Delivery FMVSS Exemption Certification: _____

Section VI CERTIFICATION OF DELIVERY:

By executing this document,

- A. You hereby request that a Lien Entry Form – Motor Vehicle be issued naming the Oklahoma Department of Transportation as Secured Party and that said form(s) will be delivered by the purchaser to a local tag agent for executing and**
- B. Assure the vehicle be used in accordance with the federal regulations and current provisions, as applicable.**

I hereby attest that each item was reviewed and that my initials above indicate that the item was properly executed.

Purchaser

Date

ODOT Reviewer

Date



15580 Hwy 114
Justin, TX 76247
800.282.7981 or 817.636.2365
Fax: 817.636.2947
www.nationalbussales.com

VENDOR INTRODUCTION

NATIONAL BUS SALES AND LEASING SERVICING CAPABILITY

OVERVIEW:

Founded in 1974, National Bus has experienced tremendous growth over the last 40 years. The senior management of the company recognized from a very early stage that competent, ethical and skilled employees coupled with investment in service structure were two things that were absolutely essential in growing a successful business. National has remained steadfast on these core competencies as well as other benefits to give the end user the best overall value when purchasing a bus.

NBS SERVICE LOCATIONS

National currently has 12 locations throughout the Southeast, Southwest and Mid Atlantic. Potentially of greater value, NBS has hundreds of satellite service centers in all 50 states as well as Canada and many islands in the Caribbean. This infrastructure allows us to service accounts all over the US, without sacrifice of time or quality of service. Our company owned service locations include:

- | | | |
|----------------------------|-------------------------|------------------------|
| -Marietta Georgia | -Jackson Mississippi | -Conway Arkansas |
| -Justin Texas | -Albuquerque New Mexico | -Bradenton Florida |
| -Charlotte, North Carolina | -Fishersville Virginia | -Waynesboro Virginia |
| -Capital Heights Maryland | -Elkhart, Indiana | -New Orleans Louisiana |

MOBILE SERVICE VEHICLES

National recognizes that it may not be convenient for our customers to bring their bus to us for periodic maintenance or repairs. As such, in the interest of providing the very best support to our customer base, National has invested in a fleet of mobile service trucks/vehicles. The service vehicles are equipped with state of the art equipment to handle most common repair issues at the customer's location. More importantly, the technicians that arrive with the vehicles are knowledgeable, friendly, efficient, and incredibly skilled at getting buses back on the road. National currently employs 12 mobile service vehicles, 4 of which are based out of our Texas office.

Quality Management System

We represent many renowned bus manufacturers, all of which are focused on continual improvement of their product offering. With that in mind, the majority of the manufacturers are ISO 9001 certified and have adopted a lean methodology in their manufacturing process. This focus on quality allows National to provide a superior finished product to its customers. As a follow to the manufacturers quality processes National has formed an Executive Management team (EMT) headed by our Chairman John Smith and comprised of senior leadership within the company. The core responsibilities of the EMT revolve around continual improvement of the buying experience and ensuring service after the sale meets the expectations of the client.

PARTS AVAILABILITY

Part sales are a part of the bus sale business that National has fully embraced. NBS understands that if a vehicle is down and waiting on a part, it is most likely losing valuable revenue every day the part is delayed. National hosts a team of over 20 full time employees that are dedicated to fielding phone calls relating to parts and fulfilling order (s) in the most efficient and effective way possible. Our team is knowledgeable and passionate about getting you the right part at the right price as quickly as possible.

VERTICAL SALE AND SUPPORT PROCESS

Customers will be given one primary point of contact (POC) for the entire sale and support process. National believes it is important that customers have clear communication channels should they have questions regarding any part of the consulting, sales or support process. Brent Roy will be the primary contact for all sub-grantees of NCTCOG. Brent has 13 years of transit bus sales experience with National Bus Sales with primary focus on the public transit market. His excellent reputation in the industry reflects the integrity and aggression he exhibits in the support of his customer base. Secondary contacts include Kevin Rupe – Service Manager, Erica Ellison – Warranty Administrator, Jennifer Cobb – Sales Coordinator, and Ray Healy – Regional VP. Having a primary POC and the support staff of NBS means the customer will never have to be involved in dealing directly with the body manufacturer, chassis dealer or any of the many component manufacturers on your vehicle.

Your New Bus

AFTER-PURCHASE SERVICE PLAN



NATIONAL BUS SALES & LEASING, INC.

Texas Shipping Address: 15580 Texas 114 ■ Justin, TX 30062
(817) 636-2365 ■ (800) 282-7981

VISIT US ON THE WEB: www.NationalBusSales.com
Or order your parts online at www.NationalBusParts.com

*Now that we're partners, we want you to know
how you can count on us for support.*

PLEASE READ ON...

Table of Contents

DELIVERY INFORMATION

Questions and Answers regarding the delivery of your new bus	4
--	---

SERVICE INFORMATION

Questions and Answers about Service	5-6
-------------------------------------	-----

PARTS INFORMATION

Questions and Answers about Parts	7
-----------------------------------	---



Delivery

QUESTIONS AND ANSWERS REGARDING THE DELIVERY OF YOUR NEW BUS

What can I expect when my bus is delivered?

All buses will be delivered to the Justin Service Center prior to shipping to your location. A Pre-Delivery Inspection (PDI) will be performed on each vehicle by the Service Support Manager team at the Service Center to make certain the bus is equipped per the order and that any minor items that might need to be addressed, are corrected. You will also have the opportunity to go to the Justin Service Center to review the bus during the PDI.

At the time of delivery or soon afterwards (based on your preference), you can expect an orientation on the bus. The National Bus Sales representative with whom you have been working will provide the orientation.

What do I do if I have problems or questions regarding the delivery of my bus?

Call your Sales Manager, Brent Roy at (817) 909-6706 or Service Manager, Kevin Rupe at (817) 636-2365. We will see that your needs will be promptly met!

What kind of maintenance procedures do I need to follow as soon as the bus is delivered to my facility?

You will want to perform routine checks such as fluid levels, belts, hoses, and proper tire pressure. You will want to ensure all safety and operational systems are functioning properly.

National Bus Sales and/or the bus manufacturer, as part of our standard procedures, have thoroughly checked all these items before delivery to you.

National's Sales Directory

Commercial Sales Staff (Please see Org Chart for more detail)

Blake Beach	President	Office 1-770-795-4214 bbeach@nationalbussales.com
Ray Healy	Regional Vice President	Mobile 949-307-6865 rhealy@nationalbussales.com
Brent Roy	Regional Sales Manager	Mobile 512-909-6706 broy@nationalbussales.com
CJ Marks	Service Support Manager	Mobile 940-205-8979 cmarks@nationalbussales.com
Whitney Ramsey	Warranty Administrator	Office 817-636-6340 wfox@nationalbussales.com
Jennifer Cobb	Sales Coordinator	Office 817-636-6314 jcobb@nationalbussales.com

Service

QUESTIONS AND ANSWERS REGARDING SERVICE

Who do I call if one of my buses needs maintenance, repair, body work, an option installed, or some other kind of service?

Call Brent Roy, or our Texas Service Department at Toll Free 1 800-282-7981. Our robust service offering and resource base allows for flexibility to deploy quickly and efficiently to any of our client locations. Our focus is on after sales support; we sell through service and support and are pleased to help you!

What kinds of service work can I expect the National Bus Sales Service Facility to perform?

National is fully prepared to meet your bus service needs. We are experts in installing special options like wheelchair lifts, wheelchair securement, air conditioners, and roof vents. We can, also, provide service as it relates to chassis and body repair.

Our service facility can meet your extremely important routine maintenance functions, ensuring all Warranty prerequisites are met.

If you need major repairs, like engine work, transmission or brake repairs, we will make sure your bus is operational as soon as possible.

If you have sustained body damage and need repairs, your needs can be met at the National Bus Sales service facility and/or Body Repair Facility.

How long will it take to get my bus repaired?

Of course, the length of time necessary to repair your bus will depend on the type of repair necessary, its severity, and the availability of parts.

It is the goal of National Bus Sales to expedite repairs. Once an assessment has been made, we will be able to give a more accurate estimate of repair time.

What can I expect to pay?

National's Service Department rates are both reasonable and competitive. Each job will be evaluated so that you receive the level of service needed to best accommodate the repair. We provide written estimates upon request.

Service

What kind of Warranty do I receive on the service work performed?

Our standard policy is to provide a 90 day Warranty covering parts and labor on any service work we perform. Any other arrangements for specialized services need to be agreed upon in writing prior to the work being performed.



Parts

QUESTIONS AND ANSWERS REGARDING PARTS

Who do I call if I need parts for my bus?

There are 2 options, you can contact either of the following people and we will be happy to assist. Parts – Chris Cabrera, Parts Representative (940) 535-8701 or Regional Sales Manager- Brent Roy (817) 909-6706 and we will be happy to serve you!

How quickly can I expect to receive the parts I order?

Approximately 90% of all orders received by 3:00 p.m. will ship the same day. Our standard procedure is to ship parts via UPS or motor freight (F.O.B. Justin, TX or Marietta, Georgia if they are not stocked in Justin, TX). Should you require guaranteed service, inform your order analyst.

May I come by your facility and pick up the parts I need?

Of course! We would be happy to see you and get the parts you need while you wait. This would be an excellent time to meet face-to-face with the people responsible for servicing your account.

What if you do not have the parts I need in stock?

In most cases your order can be drop-shipped from the vendor. National can expedite shipping to meet your needs. Should the vendor or manufacturer not have the component you need, we will source the part with other manufacturers to expedite shipping.

Can I order parts online?

Yes at www.nationalbusparts.com.

National Bus Sales accepts checks and all major credit cards.



Thank you for making National Bus Sales your “One Stop Bus Shop!”

Be sure to visit our Web site: www.NationalBusSales.com

[And www.NationalBusParts.com](http://www.NationalBusParts.com)



Streetcar

Heavy Duty Rear Engine Low Floor Chassis



The Streetcar Trolley model combines the nostalgic features of the turn of the century passenger cable car with the modern technology of today's transit advancements. The Streetcar Trolley is a powerhouse heavy duty trolley capable of running in any mass transit, high passenger capacity applications. The Streetcar is a full stainless steel low floor monocoque chassis design, exceeding the required 1:6 ratio for the ADA loading with the fold out ADA ramp.

Hometown Trolley

Double K Incorporated

750 Industrial Parkway

Crandon, Wisconsin 54820

fax 205-478-5005

email: kristin@htrcnorth.net

hometowntrolley.com



Streetcar

VERSATILE PASSENGER CAPACITIES • 10-YEAR ALTOONA TESTED

CHASSIS & BODY FEATURES

- Low floor stainless chassis
- Cummins ISB 6.7 L Diesel engine
- Engine compartment light and switch
- Air-ride suspension
- Allison transmission B 300
- Side mount radiator
- 32,000# GVW
- Overall height 10'6" to 11'6"
- Overall length 29' to 40'
- Wheelbase 190", 208" or 228"
- Passenger capacity 26-38
- Stainless steel monocoque chassis
- Full welded steel cage framing
- Totally enclosed body style
- Galvanized 20 gauge panels
- Transit drop slider window
- Large Driver T slider
- 3 windshield front wiper system
- 2-tone Sikkens paint finish
- (choice of colors)
- Exterior stainless steel roll-out
- Battery tray
- Exterior stainless steel sealed fuse panel with multiplex wiring system and LED display
- Standard pin stripe package
- Remote control heated mirrors

SAFETY FEATURES

- Driver Operated Braun or Ricon Flip Ramp master disconnect for battery
- 5 lb. fire extinguisher
- Flare kit
- First aid kit
- Body fluid kit
- Egress windows per passenger count
- Back-up alarm
- Lighted step entrances
- DOT-approved lighting
- Center side turn signals
- All appropriate warning labels
- 250 amp ANL fuse system
- Transpec roof escape hatch

ADA EQUIPMENT

- Braun, Ricon Ramp ADA lifts available
- Q Straint or Sur-Loc
- restraint systems
- Restraint storage boxes
- Passenger buzzer with lighted stop request sign
- ADA interlock system

OPTIONAL EQUIPMENT

- LED destination sign
- GPS voice annunciation system
- Deceleration lights
- Fare box collection system
- Mahogany exterior trim package
- Custom vinyl lettering
- Sign brackets front and rear
- Kneeling system
- Vertical stanchions for perimeter seating
- Leather grab straps
- Seat cushions
- PA system with internal and external speakers
- Gooseneck mic, head set mic, lapel mic, 10' cord 2nd mic
- Emco Wheaton fueling system
- Etched design on windows
- Open air option
- Rear window guards for open air models
- Vapor Slide-Glide doors
- Freedman Citi Seat Pro



The Streetcar is also available in ELECTRIC

10 Year Altoona Tested, Meets or Exceeds FMVSS, DOT and SAE Standards, DBE/WBE Certified.

© 2011 Double K, Inc.



Hometown Trolley Price Quote 2016

P.O. Box 185-Grandon, WI 54520

P: 715-478-5090

F: 715-678-5395

www.hometowntrolley.com

Price Quote 2016 Created for: National Bus Sales & Leasing, Inc.			DATE:	5/26/2016
CUSTOMER NAME:		Oklahoma Department of Transportation	QUOTE #	5002601
Year	Model	STC190 - Streetcar 190 - HTLF- LOW FLOOR	GVW	Passengers
2016	STREET CAR	CHASSIS 6.7L DIESEL	22000	28-30
Date Requested:		No Specification		





Hometown Trolley Price Quote 2016

P.O. Box 185 Crandon, WI 54520

P: 715-478-5090

F: 715-478-5095

www.hometowntrolley.com

Price Quote 2016 Created for: National Bus Sales & Leasing, Inc.		DATE:	5/26/2016
CUSTOMER NAME:	Oklahoma Department of Transportation	QUOTE #	5002601

Trolley Upgrades/Options in addition to base price

(in some cases replaces what is listed as standard equipment)

Part # / Description	Each	QTY	Extension
CHASSIS OPTIONS			
CH0060 - BATTERY 8D IN PLACE OF 1300 cca		1	
CH0140 - B300 TRANSMISSION (USE WITH MAINSTREET MODEL)		1	
CH0180 - SIDE MOUNT RADIATOR (USE WITH MAINSTREET MODEL)		1	
CH0290 - 280 HP UPGRADE (FREIGHTLINER ONLY)		1	
Electrical Options:			
EL0220 - HT MULTIPLEX WIRING SYSTEM (standard in Streetcar)		1	
AUDIO VIDEO OPTIONS:			
AV0120 - PAGE SYSTEM REI W/ 4 SPEAKERS		1	
AV0160 - REI FLEX NECK GOOSENECK MIC		1	
AV0100 - PAGE, SPEAKER EXTERIOR (EACH)		1	
AV0180 - PA FOOT CONTROL		1	
AV0080 - PAGE, JACK REMOTE		1	
Flooring Options:			
Standard - FLOORING, RCA RUBBER #747 TAN OR BISON ALTRO TRANSIT		1	
HVAC OPTIONS:			
HC0080 - 130,000 btu TRANSIT STYLE REAR MOUNT AC W/ DUCTED AIR FLOW		1	
Exterior Options:			
EX0040 - FRONT BUMPER COW CATCHER WOVEN WIRE - BLACK		1	
EX0250 - RAMCO HEATED REMOTE MIRRORS		1	
EX0221 - VAPOR SWING OUT AIR OPERATED DOOR		2	
EX0260 - TPI TRANSIT LARGE DRIVER WINDOW 42" X 38" T SLIDER		1	
EX0260 - TPI TRANSIT HORIZONTAL DROP DOWN WINDOWS (EACH)		1	
Paratransit Options:			
ADA140 - LIFT, PACKAGE RICON 621SA RAMP (LOW FLOOR ONLY)		1	
ADA200 - Q'STRAITN SLIDE-N-CLICK (EACH POSITION)		2	
ADA260 - 3 POSITION FLIP SEAT PERIMETER FOLD UP WITH WOOD SLATS		2	
ADA221 - DUAL CHIME SIGNAL, PASSENGER STOP REQUEST BULKHEAD MOUNTED		1	
Safety Options:			
SA0040 - ESCAPE HATCH STANDARD VENT MODEL (TRANSPEC)		1	
SA0180 - DRIVERS STANCHION, w/LEXAN MODESTY BARRIER		1	
Interior Options:			
IN0340 - NEW VIEW ROLLUP BLINDS FOR DRIVER AREA (EACH)		1	
Graphics Options:			
Standard - 2 Tone PPG Paint and HT Stripe Package (stock vinyl colors only)		1	
Fare Collection Options:			
Passenger Seating Options:			
SE0020 - TRAM STYLE SEATS WITH OAK SLATS (per double seat)		1	
Driver Seating Options:			
DRS080 - USSC 9100 AIR SUSPENSION SEAT -BLACK VINYL		1	
Extended Warranty Options			
Delivery Options			
DLV060 - CUSTOMER SCHEDULED DELIVERY		1	

DWG NO. STREETCAR

SF

REV A

REVISIONS

REV	CHG. NO.	DESCRIPTION	DATE	BY	CHKR	ENGR
A		INITIAL RELEASE		TMW	JW	---
-		-	--/--/--	---		

34'

Overall Width
36'

190

Engine Area

Driver's Area

Wheel Chair 2

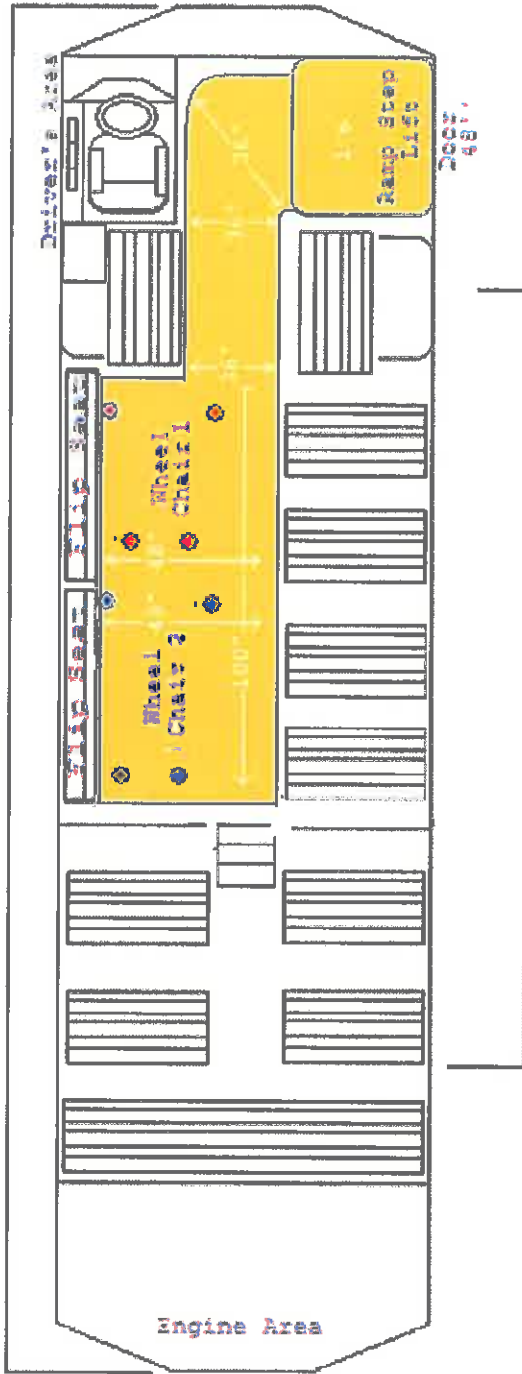
Wheel Chair 1

Flip Seat

Flip Seat

Ramp Step
Lift

2007
48"



PROPRIETARY

PROPRIETARY INFORMATION IN THIS DOCUMENT IS THE EXCLUSIVE PROPERTY OF DOUBLE K, INC. & MAY BE USED SOLELY FOR INSTALLATION OR SERVICE OF DOUBLE K'S PRODUCTS. ANY OTHER USE EXPRESSLY PROHIBITED. THIS DOCUMENT MUST NOT BE REPRODUCED WITHOUT DOUBLE K'S WRITTEN PERMISSION AND MUST BE RETURNED TO DOUBLE K, INC. UPON DEMAND.

DUAL DIMENSION TOLERANCE	APPROVED
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: INCHES ± DEC. DIM. .XX = + .02 DEC. DIM. .XXX = ± .010 ANGLES ± 2°	DRAWN BY: TMW DATE: CHECKED BY: JW ENGINEER: --/--/-- STANDARDS ENGINEER: --/--/-- MANUFACTURING ENG: --/--/-- QUALITY ASSURANCE: --/--/-- PART NO.:
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS () TOLERANCES ARE: MILLIMETERS ± DEC. DIM. .X = ± .5 DEC. DIM. .XX = ± .25 ANGLES ± 2°	DATE: DATE: DATE: DATE: DATE:

DOUBLE K, INC. / HOMETOWN TROLLEY

701 NORTH RAILROAD AVE

CRANDON, WI 54520

PH 715-478-5090

FAX 715-478-5095

TITLE:

FLOOR PLAN

HOMETOWN STREETCAR

SIZE

A

DRAWING NUMBER

STREETCAR

REV

A

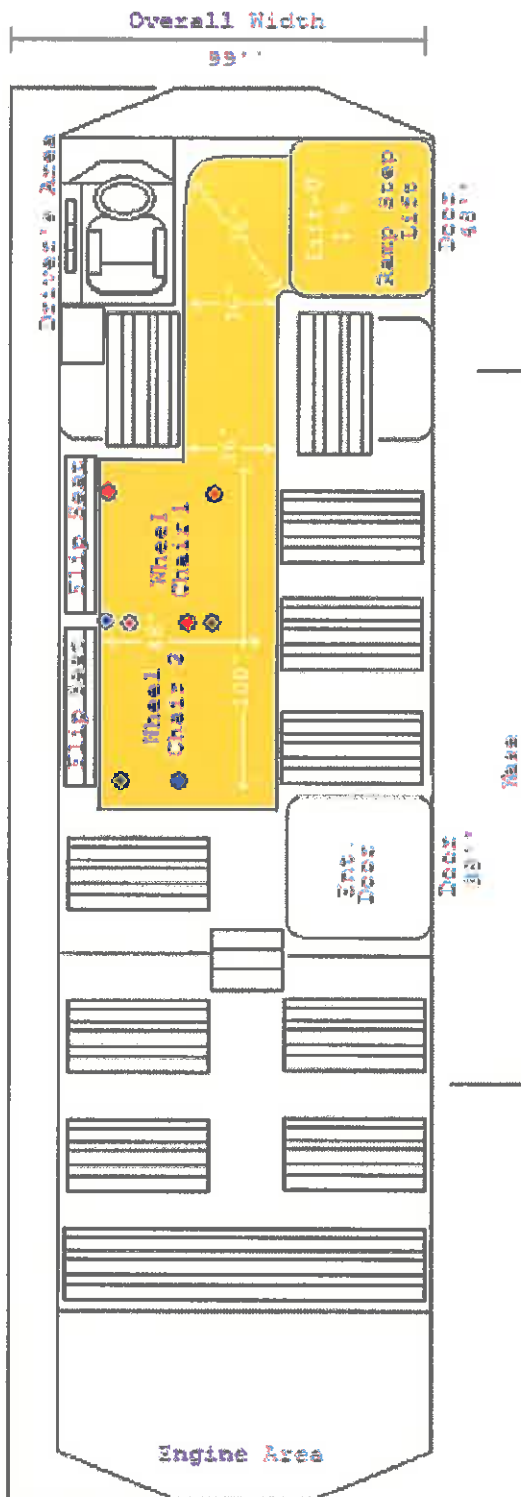
SCALE: NONE

SHEET 1 OF 1

REVISIONS

REV	CHG. NO.	DESCRIPTION	DATE	BY	CHKR	ENGR
A		INITIAL RELEASE		TMW	JW	---
-			--/--/--			

37'



208

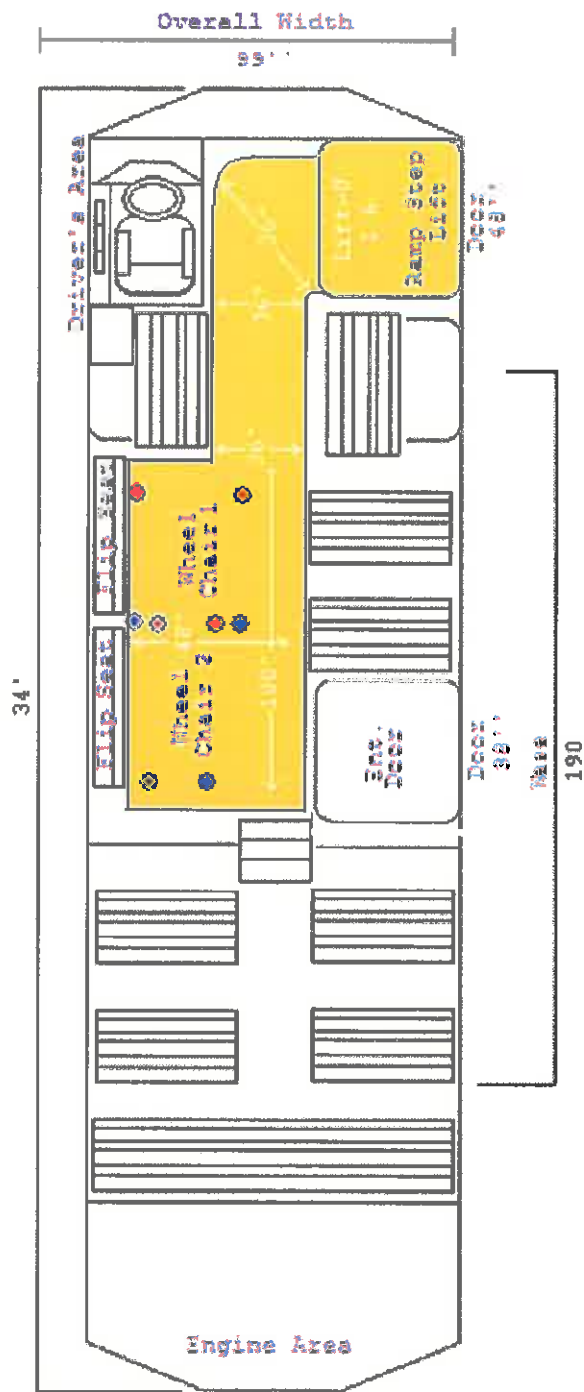
DUAL DIMENSION TOLERANCE	APPROVED	SIOBLE K, INC. / HOMETOWN TROLLEY 701 NORTH RAILROAD AVE. CRAWFORD, WI 54520 PH. 715-478-5090 FAX 715-478-5095	
	ENGINEER: TMW		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:	CHECKED BY: JW	TITLE: FLOOR PLAN HOMETOWN STREETCAR 208 34 PASSENGERS DRAWING NUMBER A STREETCAR 208	
INCHES ±	ENGINEER: --		REV A
DEC. DIM. XX ± .02	STANDARDS ENGINEER: --		SIZE
DEC. DIM. .XXX ± .010	MANUFACTURING ENG: --		DRAWING NUMBER
ANGLES ± 2°	QUALITY ASSURANCE: --	SCALE: NONE	
DO NOT SCALE DRAWING		SHEET 1 OF 1	

PROPRIETARY

PROPRIETARY INFORMATION IN THIS DOCUMENT IS THE EXCLUSIVE PROPERTY OF DOUBLE K, INC. & MAY BE USED SOLELY FOR ASSEMBLY OR SERVICE OF DOUBLE K'S PRODUCTS. ANY OTHER USE EXPRESSLY PROHIBITED. THIS DOCUMENT MUST NOT BE REPRODUCED WITHOUT DOUBLE K'S WRITTEN PERMISSION AND MUST BE RETURNED TO DOUBLE K, INC. UPON DEMAND.

REVISIONS

REV	CHG. NO.	DESCRIPTION	DATE	BY	CHKR	ENGR
A		INITIAL RELEASE		TMW	JW	---
-		-	---/---/---	---	---	---



PROPRIETARY PROPRIETARY INFORMATION IN THIS DOCUMENT IS THE EXCLUSIVE PROPERTY OF DOUBLE K, INC. & MAY BE USED SOLELY FOR INSTALLATION OR SERVICE OF DOUBLE K'S PRODUCTS. ANY OTHER USE EXPRESSLY PROHIBITED. THIS DOCUMENT MUST NOT BE REPRODUCED WITHOUT DOUBLE K'S WRITTEN PERMISSION AND MUST BE RETURNED TO DOUBLE K, INC. UPON DEMAND.		DUAL DIMENSION TOLERANCE UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: INCHES ± DEC. DIM. .XX = ± .02 DEC. DIM. .XXX = ± .010 ANGLES ± 2° UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE: MILLIMETERS ± DEC. DIM. X = ± .5 DEC. DIM. .XX = ± .25 ANGLES ± 2°		APPROVED DRAWN BY: TMW CHECKED BY: JW ENGINEER: - STANDARDS ENGINEER: - MANUFACTURING ENG: - QUALITY ASSURANCE: - DATE: -/-/		DOUBLE K, INC. / HOMETOWN TROLLEY 701 NORTH RAILROAD AVE. GRAYDON, WI 54520 PH. 715-478-5030 FAX 715-478-5085	
FLOOR PLAN HOMETOWN STREETCAR 208 34 PASSENGERS		SIZE A STREETCAR 208		REV A		SCALE NONE	
PART NO.		SCALE NONE		SHEET 1 OF 1			