ATTACHMENT A

OCTA

AFFILIATED AGENCIES

Orange County Transit District

Local Transportation Authority

Service Authority for Freeway Emergencies

Consolidated Transportation Service Agency

Congestion Management Agency

Service Authority for Abandoned Vehicles

April 27, 2020

TO: ALL STATE OF CALIFORNIA, DEPARTMENT OF GENERAL SERVICES, ZERO EMISSION TRANSIT BUSES (ZEBs) BIDDERS

FROM: ORANGE COUNTY TRANSPORTATION AUTHORITY

SUBJECT: REQUEST FOR QUOTES (RFQ) 0-2165
DGS – 40-FOOT ZERO EMISSION TRANSIT BUSES

The Orange County Transportation Authority (OCTA) invites firms who are participants in the State of California, Department of General Services, Zero Emission Transit Buses (ZEBs), Contract Nos. 1-19-23-17B and 119-23-22B, to provide a quote for 40-foot battery powered buses. Firms are to submit quotes on only one bus type.

Quotes shall be received at or before 11:00 a.m. on Tuesday, June 2, 2020. Quotes received after the date and time specified will not be accepted.

Questions or clarifications shall be submitted in writing and shall be received by OCTA no later than 11:00 a.m. on Monday, May 11, 2020. OCTA will respond to written questions via an addendum.

Quotes shall be sent via electronic mail to *mbahadori@octa.net* and shall be submitted on the attached form entitled, "Exhibit E, Price Summary Sheet."

Bidder will be required to comply with all applicable Equal Employment Opportunity Laws and Regulations.

Sincerely,

Masih Bahadori
Principal Contract Administrator
Contracts Administration and Materials Management

Enclosures:

Exhibit A: Scope of Work
Exhibit B: Quality Assurance
Exhibit C: Warranty Table
Exhibit D: Quotation Form
Exhibit E: Price Summary Sheet
Exhibit F: Insurance Requirements
Exhibit G: General Provisions
Exhibit H: Required Federal Clauses
Exhibit I: Buy America Certification
Exhibit J: Federal Motor Vehicle Safety Standards Certification
Exhibit K: Disadvantaged Business Enterprise (DBE) Approval Certification
Exhibit L: Certification of Consultant, Commission & Fees
Exhibit M: Certificate of Compliance with Bus Testing Requirement
Exhibit N: Contractor Service and Parts Support Data
Exhibit O: Non-Collusion Affidavit
Exhibit P: Request for Pre-Offer Change or Approved Equal

SCOPE OF WORK

The Authority intends to purchase up to 10, 40-foot battery powered buses as part of the State of California, Department of General Services, zero-emission buses (ZEB) award.

It is the Authority's intention to purchase new low floor buses that are fully compliant with the Americans with Disabilities Act (ADA) of 1990. If ADA's requirement exceeds these specifications, the contractor shall comply with ADA. Buses shall incorporate features essential for safe, fast, efficient, and comfortable operation by the operator to ensure excellent road and traffic visibility, as well as adequate means for safe passenger movement, under all driving conditions. Buses shall be easily maneuverable in normal and heavy traffic.

The technical requirements are intended to provide a general description of a 40-foot, low floor, battery powered bus designed for general service in all areas of Orange County for both, suburban express service and general service, on urban arterial streets in addition to potential express service into any of the neighboring Counties of Los Angeles, Riverside, San Bernardino, etc. These buses are intended for use by the widest possible spectrum of passengers, including children, adults, the elderly and handicapped. The bus shall have a minimum expected life of twelve (12) years or 500,000 miles, whichever comes first.

These buses shall provide maximum passenger appeal in appearance, comfort, and safety; combined with excellence in operating characteristics, optimum seating and conformity with state and federal bus regulations and zero-emission standards. These buses shall incorporate a high level of subsystem integration coordinated with central diagnostic functions and single point operator interface.

The basic vehicle, both chassis and body, shall be 2020/21 model year, factory production, heavy duty, Altoona tested 40-foot battery powered bus.

The specification is intended for use in the purchase of a new and complete vehicle unit and all equipment and accessories necessary for its operation. All parts, equipment and accessories shall be completely installed, assembled and/or adjusted as required. The buses are required to meet all regulations, standards and laws including revisions, at time of bus acceptance and through the term of the contract.

Contractor shall begin production of the First Article (FA) bus upon receipt of the Notice to Proceed (NTP) in accordance with the schedule provided by the Contractor and approved by the Authority. Upon approval of the FA, there will be a secondary NTP for the production run.

The schedule provided by Contractor shall be realistic and meet or exceed the Authority's requirements. **The 40-foot battery powered bus deliveries shall be completed no later than May 31, 2022**.

Contractor, prior to delivery, shall be responsible for the licensing and registration of each vehicle. All buses shall be delivered, clean and with a fully charged on-board battery storage/pack system.

As part of the quote submittal, Contractor shall provide:

1. Manufacturer's signed letter stating that the bus proposed is in full compliance with California's zero-emission bus requirements for transit buses, at the time of manufacturing and delivery to the Authority.

2. Table/Chart with Gross Vehicle Weight Rating (GVWR), unladen axle weight (front and rear), weight calculations shall include ADA equipment, components, accessories, seated and standee passengers and driver.

3. Scaled elevation drawings depicting exterior, interior views and two (2) ADA accommodations.

4. Due to the Authority's operational needs, including deadheading miles and route assignments, battery powered buses shall be capable of being at a top speed of 65 mph for an unlimited amount of time on a straight, level road at GVWR with all accessories operating.

5. Proposed bus shall be of the longest available range in miles, minimum 200 miles, indicating battery pack capacity and estimated vehicle range at GVWR on the following Design Operating Profiles.

    a) The duty cycle consists of four phases to be repeated in sequence:

        i. A central business district (CBD) phase of 2 miles with 7 stops per mile and a top speed of 20 mph.
        ii. An arterial route phase of 2 miles with 2 stops per mile and a top speed of 40 mph, and
        iii. A commuter phase of 4 miles with 1 stop and a maximum speed of 65 mph and a 5-minute idle phase and,
        iv. Maximum mileage range at sustained freeway speed of 65 mph having the driver and a seated passenger load on board the bus.

6. Maintenance and Operational Arc Flash assessment shall include personal protective equipment category required for technicians working on high voltage components.

7. One (1) copy of the final Altoona Bus Testing report.

8. Using as a reference the Notice to Proceed with the FA unit, Contractor shall indicate in number of weeks the proposed production and delivery schedule for the following:

9. One FA unit;
The FA shall be delivered to the Authority in a fully functional and fully operational state of completion, ready to be deployed in revenue service, having all systems and components in operation, **no later than thirty-six (36) weeks after receiving the NTP with the FA.**

a) Authority's delivery location:
Santa Ana Base
4301 West MacArthur Boulevard
Santa Ana, California 92704

b) Contractor shall produce one (1) FA bus with respect to the base order. The FA bus shall demonstrate that the bus fully meets all contractual requirements. The FA bus shall be inspected, tested and approved by the Authority prior to making the decision to move forward with the production of the remaining order.

c) An FA inspection shall include both a physical configuration inspection and a functional demonstration. FA inspections shall be conducted at the Contractor's facility and the Contractor shall furnish to the Authority, prior to each inspection, a written inspection and demonstration plan for each item intended for review. The Authority's inspectors shall attend each FA inspection unless the Authority provides a written waiver of its right to attend any such inspection. The results of each FA inspection shall be documented by the Contractor in a format deemed acceptable to the Authority and all documents relating to the inspection shall be forwarded to the Authority's Contract Administrator.

d) Additionally, upon arrival to the Authority's facilities, the FA build shall be evaluated/tested for a period up to four (4) weeks. The evaluation/testing shall start after the bus is licensed, registered and delivered to the Authority and all, if any detected discrepancies are repaired and/or corrected to the Authority's satisfaction. The four (4) week evaluation/testing shall include, at the Authority's discretion, compliance with specifications, compliance with regulations, California Highway Patrol inspection, ergonomics, driver's reach and controls, wheelchair locations, securement, placement, pressure and actions required to activate pedals, switches, knobs, access doors, driver's field of view, windshield glare, interior and exterior lighting, vehicle handling, vehicle's ability to maintain its intended course and direction of travel, steering, braking, turning radius, suspension, approach and break over angles, vehicle range, handling of slopes, power plant, to include entire and individual pieces of the electric system, energy consumption, maintenance logging of break downs, fittings, connections, and others as applicable.

e) At the Authority's discretion, the evaluation period may be extended based on exhibited vehicle performance and, required timelines to complete the evaluation processes.

f) Upon acceptance of the FA, a second Notice to Proceed (NTP) letter will be provided to authorize the startup of production of the remaining vehicles.

10. Production Buses

a) Using the second NTP with the production buses as a reference, Contractor shall indicate the number of weeks that it will take to commence and complete the manufacturing and final delivery, to the Authority's Santa Ana Base, of the complete production run.

b) Manufacturing Location(s) – Contractor shall indicate all the intended location(s) where the vehicles will be manufactured, assembled, integrated, etc., including the address, city and state of each location.

c) The Authority intends to secure contracted inspection services to provide the in-plant manufacturing inspection services for these vehicles. As such, the Contractor shall assume the financial responsibility for compensating the Authority's contracted inspection services resulting for any delays or deviations, from the proposed, and/or agreed upon manufacturing and production schedule and working weekends.

11. Wheel housings shall be constructed of heavy gauge steel and provide ample tire clearance during all operating conditions. Contractor shall provide structural drawings depicting the proposed structural configuration including steel plates and framing intended to protect the passengers from a broken driveshaft breaking through the floor into the passenger compartment.

12. Buses shall be delivered with complete Authority decal package using the Authority's identity package for zero-emission, 40-foot buses in accordance with **Attachment No. 1. Identity Package (*).**

(*) Referential only. Logos to read Battery Powered Bus.

Decals shall consist of 3M reflective 680 series material with 9700 series ink.

a) Authority logos and identification
b) Authority 4-digit vehicle ID numbers
c) Rooftop ID number, 48 inches
d) CA commercial carrier number (CA 43438)

Basic Exterior Sample

Signs shall be durable and fade, chip, and peel-resistant; they may be painted signs, decals, or pressure-sensitive appliqués. All decals shall be sealed with clear, waterproof sealant around all exposed edges if required by the decal supplier. Signs shall be provided in compliance with the ADA requirements defined in 49 CFR Part, Subpart B, 38.27.

13. Interior

The vehicles interior decal layout shall consist of the following basic items and the Authority reserves the right of final approval upon acceptance of the first article prototype:

a) Information required by Federal/State regulations
b) International graphic symbols typical of urban transit vehicles
c) Authority vehicle ID numbers
d) Driver/Passenger information typical to the proposed vehicle.

Note: All interior informational decals shall be bilingual (English/Spanish).

14. Modesty Panels

Sturdy, stainless steel for the lower sections and transparent melamine for the upper sections, divider panels constructed of durable, unpainted, corrosion-resistant material complementing the interior trim shall be provided to act as both a physical and visual barrier for seated passengers. Modesty panels shall be immune to vandalism or be of a design incorporating inexpensive/easily replaceable sacrificial panels, firms, etc.

Modesty panels shall be located at, when applicable, front and rear sections of doorways to protect passengers on adjacent seats, and along front edge of rear upper level. Design and installation of modesty panels located in front of forward-facing seats shall include a handhold/grab handle along its top edge. These dividers shall be mounted on the sidewall and shall project toward the aisle no farther than passenger knee projection in longitudinal seats or the aisle side of the transverse seats.

Modesty panels shall extend no higher than the lower daylight opening of the side windows and those forward of transverse seats shall extend downward to a level between 1½ and 1 inch below the floor. Panels forward of longitudinal seats shall extend to below the level of the seat cushion. Dividers positioned at the doorways shall provide no less than a 2½-inch clearance between the modesty panel and the opened door to protect passengers from being pinched. Modesty panels installed at doorways shall be equipped with yellow powder coated grab rails and, when applicable (e.g., rear doors), shall extend below the floor level to prevent door interaction with passenger's feet.

15. Passenger Seats

Passenger seats shall be United States Seating Company (USSC), American Seating or other approved equal, light weight seats to include vandal guard, ¾-inch or 1-inch padded/fabric replaceable seat and back inserts, 980 gray color,

Holdsworth Defender anti-bacterial, anti-fungal and anti-stain custom Authority fabric (sample shall be provided at the pre-production meeting) or equivalent and thermoplastic padded hand rails.

Passenger seats shall be arranged in a transverse, forward facing configuration, except at the wheel housings where aisle-facing seats may be arranged as appropriate with due regard for passenger access and comfort. Other areas where aisle-facing seats may be provided are at wheelchair securement areas and platforms.

The last row of passenger seats shall accommodate five (5) passengers and the center seat shall be equipped with handholds on each side of the seat. The center seats shall securely latch in the closed position and shall be hinged to fully open for easy access to the engine compartment. A gas spring shall be provided to assist lifting to the fully open position. A prop rod, with a latch, shall be provided to securely hold the seat in the fully opened position. An engine access door shall be provided under the last row of seats in the bus. Such removable door/cover shall be noise and thermally insulated.

Contractor shall submit a copy of the proposed seat layout consistent with these specifications showing hip-to-knee and foot room dimensions, stanchion layout and wheelchair maneuverability layout with bid for the Authority's review and approval. Contractor shall also indicate on this layout the Free Floor Space available to standees and include the calculation of the Free Floor Space area.

16. Driver and Passenger Windows shall be flush mounted, 6 mm tempered glass, having a window glazing, grey 44% light transmittance.

17. Wheels and rims shall be hub-piloted with two-sided polished aluminum Alcoa, Dura-Flange, or approved equal and shall resist rim flange wear. All wheels shall be interchangeable and shall be removable without a puller. Wheels shall be compatible with tires in size and load-carrying capacity. Front wheels and tires shall be balanced as an assembly per SAE J1986. Front, rear and spare wheel/tire assemblies shall be alike. Each bus unit shall be equipped with one spare wheel-tire assembly mounted and balanced as previously described.

18. Tires shall be suitable for the conditions of transit service and sustained operation at the maximum speed capability of the bus. Load on any tire at GVWR shall not exceed the tire supplier's rating. The tires shall be of the radial type, capable of sustained speeds of 65 mph. Contractor shall be responsible for providing Bridgestone tires (*).

(*) Bridgestone is the current tire supplier for the Authority. Due to the Authority's contracting services with tire suppliers/manufacturers, the applicable tire's brand name, if changed by the time of manufacturing, shall be provided during the pre-production meeting.

19. Front doors, or the entry area, shall be fitted with ADA-compliant assists. Assists shall be as far outward as practicable but shall be located no farther inboard than six inches from the outside edge of the entrance step and shall be easily grasped by a 5th-percentile female boarding from street level. Door assists shall be functionally continuous with the horizontal front passenger assist and, the vertical assist and the assists on the wheel housing or, on the front modesty panel. The steps shall be designed so water will not pool at any time.

20. Contractor shall be responsible for providing detailed, scaled drawings with dimensions, including all views (front, rear, top and both sides) in electronic AutoCAD and Adobe Illustrator format. These files will be used by the Authority's Marketing Department to evaluate and perform a design review, if applicable, of Authority's existing zero-emission identity package with the proposed bus.

21. Piping and all cables shall be routed in a parallel fashion and be retained by split type mounting blocks using pinch bolts; therefore, the use of "P" clamps shall not be allowed, and the use of traditional tie straps shall not be permitted. As an alternative, Hellermann Tyton type/style of fasteners, clamps are acceptable.

22. Engine compartment hoses shall be Aeroquip, or approved equal, designed, proven and rated to operate in the environment in which they are intended to function/perform.

23. In addition to thermal protection for the high voltage batteries, a Kidde automatic fire suppression system shall be installed**.** The fire suppression system shall be wired into the Intelligent Transportation Management System (ITMS) radio system IVU, so that fire alarms are broadcast through the ITMS radio.

    A Kidde, or approved equal, fire detection/suppression system shall be provided, to include, control module, UPS (48-hour minimum stand-alone back-up), minimum of three (3) optical detectors, minimum 22-pound purple K agent, discharge nozzles and required harnesses, brackets, etc. The subject supplier shall also be responsible for providing installation guidelines and certification and approval by a professional registered fire protection engineer and approval of final installation/operation. The control module shall be capable of recording events (time stamp log), sensor ID and provide a standard data communication port to facilitate the computer interface for diagnostics, data retrieval and others not broadcasted via the system's interface. The fire detection system may also include a local means of thermal detection via armored linear thermal device, ALTD, in addition to the optic sensors. The ALTD element shall be capable of providing continuous operation and shall be routed, mounted, secured and attached to all high-power cables in the engine compartment, e.g., DC/DC alternator, battery cables, HVAC, all cooling system, etc., in accordance with the Authority standards. The fire suppressing agent's delivery lines/plumbing, starting at the fire extinguisher container and ending at the discharge nozzles, shall all be made of stainless steel and shall be properly secured using split-blocks.

The operator's area at a clearly visible location shall be equipped with a Floyd Bell, or approved equal, whoop fire alarm, part # TXO-86-515-Q and TLM-87R-930-Q, that shall emit a distinctive sound and warning light to alert the driver in case of an impending or detected fire related event. The feed for this alarm shall be provided through the fire-suppression's control panel and it shall be muted upon driver's acknowledgment of the event.

The following components, at a minimum, shall be part of the Kidde, or approved equal, fire monitoring and suppression system:

a) Driver's display and Control Panel with datalogging and diagnostic capabilities
b) ALTD, armored linear thermal device type sensing element
c) Module for Thermal sensing element
d) Installation kit for ALTD
e) 22 Lbs. extinguisher bottle w/pressure sensing device
f) Distribution manifolds
g) Nozzles
h) PM-3M Optical Sensors
i) Stainless steel plumbing

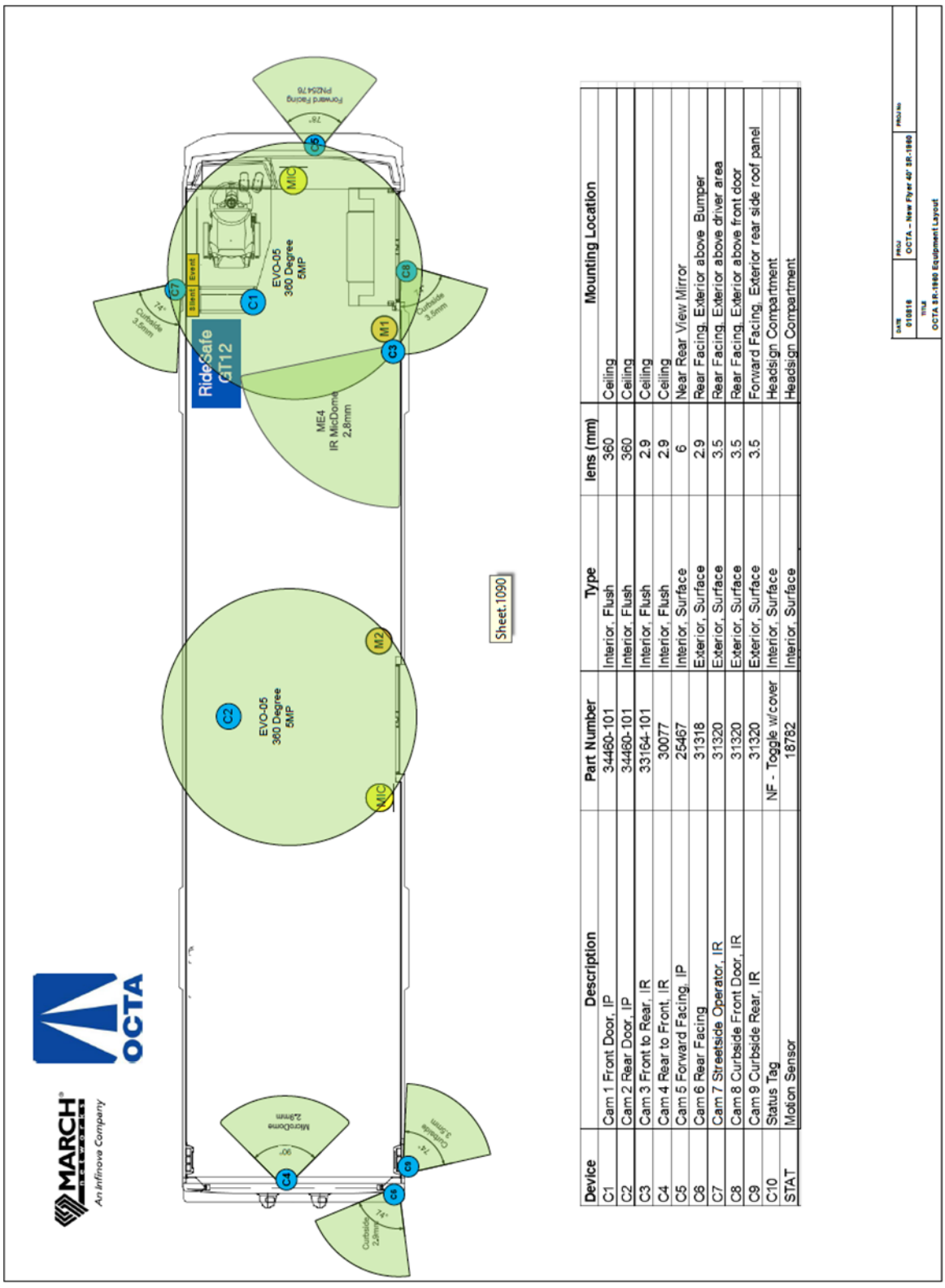
See Attachment No. 2 - Kidde Automatic Fire Detection and Suppression System

24. Contractor shall provide a March Networks, Inc. (March Networks) on board video surveillance system (OBVSS) with nine color cameras (five interior and four exterior), GPS antenna or applicable, cables and all others in compliance with the Authority's current standard OBVSS, to include the mobile digital video recorder, 3-axis accelerometer, two (2) interior microphones, two (2) interior motion detectors among others. Contractor shall be responsible for contacting March Networks and secure an updated list of parts and materials intended.

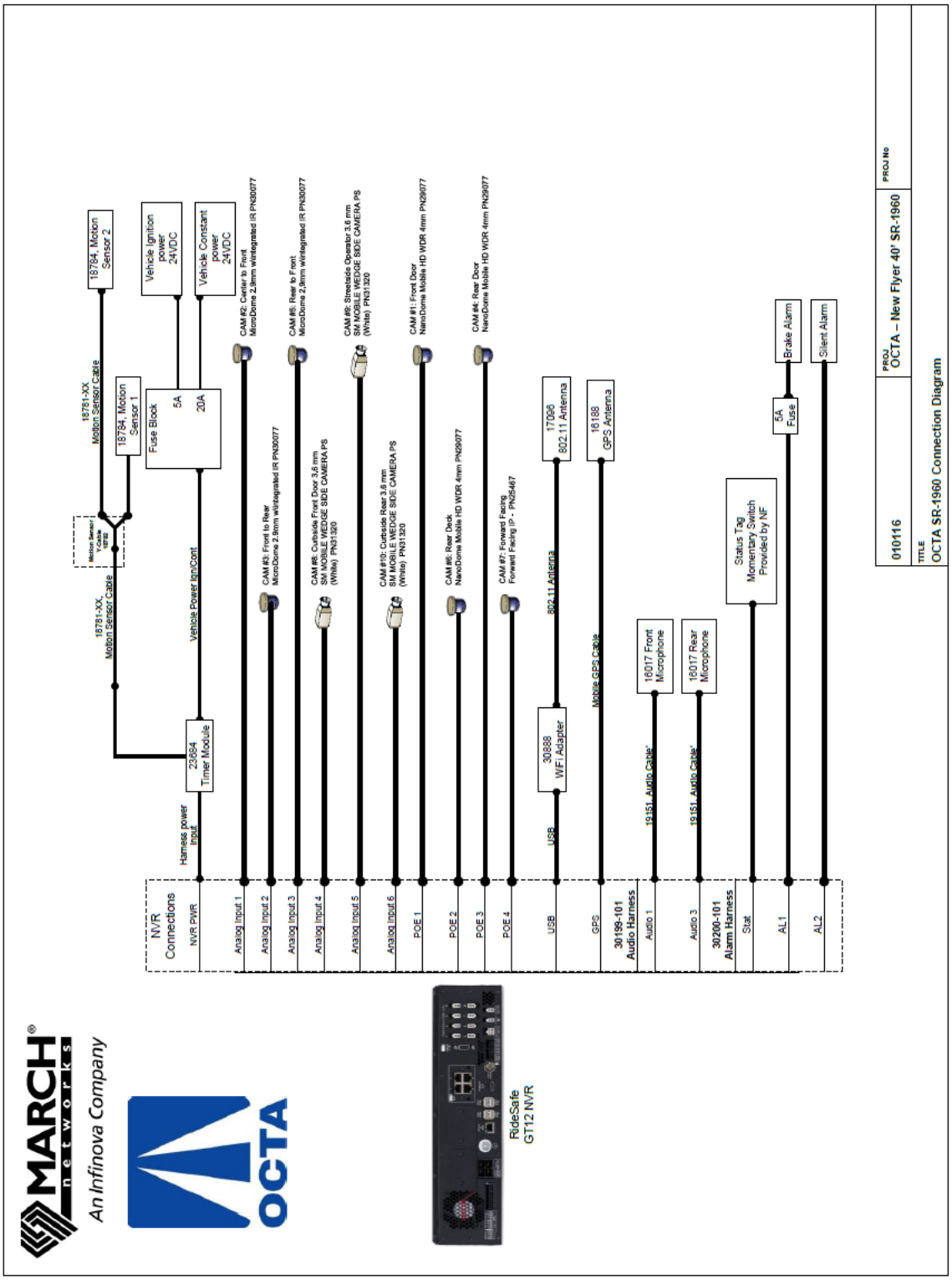
The below list is to be used as a reference only from the most recent March Networks' Authority build; however, Contractor shall contact March Networks to secure the latest Authority Configuration for 40-foot buses.

March Networks contact information:
Keith O. Winchester
kwinchester@MarchNetworks.com
North America Mobile Solutions – Director
(800) 563-5564 x 5430

March Networks Part Numbers #	Description	Quantity
29803-105	DVR-MARCH GT12, 1TB SSD	1
30200-101	CABLE-ALARM INPUT, GTXX	1
30199-101	CABLE-AUDIO INPUT, GTXX	1
18784	SENSOR-MOTION NO. 1, CAMERA	2
18782	CABLE-Y, MOTION SENSOR	1
18790	MIC-RECORDER, BLK (MARCH NETWORKS)	2
23684	MODULE-TIME DELAY, CAMERA	1
32049	CAM C2001A MOBILE HDR FF (4.0mm)	1
30077	CAMERA-MICRODOME, IR, 2.9MM LENS	1
34460-101	CAM EVO-05 MINI OUT 360deg 5MP RJ45 WHT	2
31320	CAMERA-3.6MM, CLR, EXTERIOR, WHITE	3
31318	CAM C0401A MOBILE IR WEDGE 2.9mm WHT	1
33164-101	CAM C2401A ME4 IR MicDOME 2.8mm	1



Device	Description	Part Number	Type	lens (mm)	Mounting Location
C1	Cam 1 Front Door, IP	34460-101	Interior, Flush	360	Ceiling
C2	Cam 2 Rear Door, IP	34460-101	Interior, Flush	360	Ceiling
C3	Cam 3 Front to Rear, IR	33164-101	Interior, Flush	2.9	Ceiling
C4	Cam 4 Rear to Front, IR	30077	Interior, Flush	2.9	Ceiling
C5	Cam 5 Forward Facing, IP	25467	Interior, Surface	6	Near Rear View Mirror
C6	Cam 6 Rear Facing	31318	Exterior, Surface	2.9	Rear Facing, Exterior above Bumper
C7	Cam 7 Streetside Operator, IR	31320	Exterior, Surface	3.5	Rear Facing, Exterior above driver area
C8	Cam 8 Curbside Front Door, IR	31320	Exterior, Surface	3.5	Rear Facing, Exterior above front door
C9	Cam 9 Curbside Rear, IR	31320	Exterior, Surface	3.5	Forward Facing, Exterior rear side roof panel
C10	Status Tag	NF - Toggle w/cover	Interior, Surface		Headsign Compartment
STAT	Motion Sensor	18782	Interior, Surface		Headsign Compartment


MARCH networks
An Infinova Company
OCTA
RideSafe GT12 NVR
NVR Connections
NVR PWR
Analog Input 1
Analog Input 2
Analog Input 3
Analog Input 4
Analog Input 5
Analog Input 6
POE 1
POE 2
POE 3
POE 4
USB
GPS
30199-101 Audio Harness
Audio 1
Audio 3
30200-101 Alarm Harness
Stat
AL1
AL2
Harness power input
23684 Timer Module
Vehicle Power Ign/Cont
Fuse Block
5A
20A
18781-XX Motion Sensor Cable
18784, Motion Sensor 1
18784, Motion Sensor 2
Vehicle Ignition power 24VDC
Vehicle Constant power 24VDC
CAM #2: Center to Front MicroDome 2.8mm wi/integrated IR PN30077
CAM #3: Front to Rear MicroDome 2.8mm wi/integrated IR PN30077
CAM #5: Rear to Front MicroDome 2.8mm wi/integrated IR PN30077
CAM #8: Outside Front Door 3.6 mm SM MOBILE WEDGE SIDE CAMERA PS (White) PN31320
CAM #9: Streetside Operator 3.6 mm SM MOBILE WEDGE SIDE CAMERA PS (White) PN31320
CAM #10: Outside Rear 3.6 mm SM MOBILE WEDGE SIDE CAMERA PS (White) PN31320
CAM #1: Front Door NanoDome Mobile HD WDR 4mm PN29077
CAM #6: Rear Deck NanoDome Mobile HD WDR 4mm PN29077
CAM #4: Rear Door NanoDome Mobile HD WDR 4mm PN29077
CAM #7: Forward Facing Forward Facing IP - PN25467
30688 WiFi Adapter
802.11 Antenna
17096 802.11 Antenna
Mobile GPS Cable
16188 GPS Antenna
19151 Audio Cable
19151 Audio Cable
18017 Front Microphone
18017 Rear Microphone
Status Tag Momentary Switch Provided by NF
5A Fuse
Brake Alarm
Silent Alarm
PROJ
OCTA – New Flyer 40' SR-1960
PROJ No
010116
TITLE
OCTA SR-1960 Connection Diagram

25. On-Board Vehicle Surveillance System (OBVSS)

The following general requirements shall be used to define the overall OBVSS. The OBVSS shall include the most current model of mobile digital video recording system manufactured by March Networks. The objective and general guidelines are as follows:

The system shall be a turnkey, digital OBVSS, fully supported by March Networks, an integrator, or both. The system at a minimum shall include the following:

a) The system shall operate on input vehicle power between 9-32 vdc.
b) Include a DVR with an internal Solid State Device (SSD) data storage capacity of 150 hours minimum at four (4) frames per second recording speed and 352 x 240 resolution with up to minimum of nine (9) analog/digital video input channels and two (2) analog/digital audio input channels utilized and operating simultaneously.
c) Data review via all the following: remote wireless connectivity, direct Ethernet/serial interface via laptop, and removable hard drive utilizing an external docking station.
d) The system shall use MPEG-4 audio/video compression algorithm for data downloading.
e) Data download via secured WPA encrypted standard 802.11g protocols that permit remote wireless downloading of thirty (30) minutes of video and audio data from all audio/video channels (per item number 2 above) in ten (10) minutes or less.
f) The OBVSS shall be equipped with one (1) impact sensor specifically designed for transit that responds to changes in acceleration on its X and Y axis. The OBVSS supplier shall provide engineering support to properly position, locate, and calibrate the impact sensor for proper circuit closure, approximately 4g's.
g) Events shall be "flagged" via a variety of programmable inputs, to include, operator activation of a switch, operator activation of the ITMS silent alarm function and automated inputs, such as, speed, acceleration, etc.
h) The on-board system shall be equipped with GPS and a means of synchronizing with actual time.
i) The on-board system shall be equipped with a UPS system capable of ten (10) minutes of back up.
j) The vehicle shall be equipped with a silent alarm / event flagging button for triggering events.
k) To the extent practical, all OBVSS devices mentioned in this section shall be installed within a single enclosure, excluding cameras, and located behind the driver above the left front wheel housing.

MOBILE DIGITAL VIDEO RECORDER (DVR)

The March Networks OBVSS DVR shall utilize an internal SSD hard drive with a minimum 150 hours of storage space, recording at least four (4) frames per second and a minimum 352 x 240 resolution with minimum of nine (9) analog/digital video

input channels and minimum of two (2) analog/digital audio input channels utilized and operating simultaneously. The DVR shall include a compatible hard drive docking station for data retrieval and review. The DVR shall provide built-in secured file format using digital encryption security features to protect system and data integrity as well as system settings and cabling connections. Further, the DVR shall include the following features and functionality:

a) The DVR shall be of a size and weight to permit installation and operation on board fixed route or Paratransit type vehicle and operate in an ambient temperature environment of 30°F – 130°F.

b) DVR shall be certified to durability testing as defined in SAE J1455 for shock, vibration, J1113 for EMI/RFI, and meet NEMA 4 standards as defined in NEMA Standards Publication 250-2003 Enclosures for Electrical Equipment.

c) The DVR shall capture data at vehicle startup and continue recording after shutdown (ignition off). The recording after shutdown shall be user programmable up to maximum of ninety (90) minutes.

d) At a minimum two (2) motion detection sensors shall be installed for capturing movement on the vehicle when recording is necessary after fifteen (15) minutes of vehicle shutdown. The motion detectors shall be mounted on the curbside of vehicle and capable of capturing any movement within the vehicle.

e) The DVR shall digitally capture and store data to its hard drive in a linear continuous indefinite sequence that as disk space fills writes over old information not stored as a flagged event.

f) The DVR shall record the time/date/latitude/longitude from the GPS and attach to the audio/video file.

g) Include on separate channels, a minimum of six (6) video inputs.

h) Each of the video channels shall independently permit user selectable frame rate recording speed up to thirty (30) frames per second.

i) Minimum of one (1) audio input recording at full-motion rate fully synchronized with the video. Each audio input shall provide filtering for vehicle noises while recording.

j) The DVR shall utilize a secured removable SSD hard drive for optional physical removal/exchange of the hard drive cartridge enclosure for review.

k) The DVR shall capture and catalog a user-defined quantity of events that are time/date stamped and filed for easy removal/access. Events shall be stored in a non-volatile memory location that cannot be overwritten without proper system administration access.

l) The DVR shall include a user programmable pre-alarm and post-alarm recording buffer up to maximum ten (10) minutes for all connected inputs.

m) The DVR shall receive impact sensor data, Authority selected discrete ON/OFF or J1708, J1939/CAN vehicle signals, operator-initiated incident/event trigger, and silent alarm activation (panic button) via auxiliary inputs (minimum 4 inputs).

n) The DVR shall be capable of providing wireless live-feed or image transfer to a remotely accessed vehicle fitted with appropriate optional router equipment.

o) The DVR shall include a health monitoring / system diagnostic function that during system startup checks functionality of all connected inputs, backup system, network connection, and hard drive integrity. The system supplier is encouraged to deploy methods that can determine if camera lenses are dirty, etched, or partially covered. The system shall include a system fault indicator, which provides indication only during system faults. System faults shall be transferred automatically via wireless download upon site/vehicle interface.

p) The DVR shall be capable of communicating and synchronizing with an on-board event data recorder.

SOFTWARE

The DVR and system support software shall include, but not be limited to the following minimum capabilities and functionalities:

a) Software provides intuitive, user-friendly viewing with an Administrator controlled hierarchy level password, protecting DVR and camera access.

b) System creates designated event files and inserts searchable markers or flags for ease of data mining and review.

c) The system software shall be capable of converting the audio/video file into a non-proprietary video format (i.e. avi) to permit viewing via a standard Windows Media Player. The converted file shall include audio/video synchronization from either single or multiple video channels.

d) System software includes user programmable start time, before actual event, and stop time, after event, for all connected input devices to all flagged event files.

e) System software permits synchronized concurrent viewing of GPS mapping and all audio/video channels.

f) System software features image enhancement capabilities, including full screen view, zoom, play forward and play reverse, pause, single frame forward and single frame reverse, up to 16x normal view fast forwarding, still image file save, brightness and color balance, etc.

g) System shall include an auto extraction feature allowing the Authority to schedule an audio/video search by either one (1) or more search criteria. The search criteria are from at least one (1) of the following GPS long/lat coordinates. The extracted audio/video file shall be addressed for easy access. The auto extraction feature shall have the ability to alert the originator of the search with a message indicating “failed/successful” search results.

h) System software provides remote data review, download, system configuration, diagnostics, and management.

i) System software provides encryption of recorded data (or other secure method for ensuring data integrity).

j) System maintains a secure log file of DVR system errors, usage, and history.

k) System shall be expandable and if available, open/publicly available standards with unlimited software upgrades.

l) Software shall be user-configurable and licensed to the Authority for its use.

26. RADIO/ITMS/AVL/Announcement Passenger Counter Equipment

The Contractor shall be responsible for delivering a bus equipped with all components necessary for a fully functional ITMS radio system based on the IVU-4000 system including automatic vehicle location, automatic voice announcement, passenger counters, antennas, cables and others as configured and required by the Authority.

All other items required for a fully functional RADIO/ITMS/Voice/Passenger Counter/ AVL, etc., radio communication equipment shall be provided as manufactured or supplied by Conduent Transport Solutions, Inc. (Conduent) and this equipment shall be compatible with the Authority’s existing communication system. Hardware location shall be determined at the pre-production meeting and may require refinement during the evaluation of the prototype bus. The radio handset shall be located within reach of the coach operator and not interfere with the operator feet or walkway (for safety reason) with proper length of the cord.

Contractor shall be responsible for contacting Conduent and securing an accurate and updated part list to match the Authority configuration and the manufacturer’s bus’ platform/model.

The following list of Conduent's ITMS Radio/Voice/Passenger Counter and other items provided for the most recent Authority bus delivery is provided only as a reference. Contractor shall be responsible for contacting Conduent to secure the most up-to-date configuration build for the Authority, 40-foot bus platform in compliance with Conduent CAD/AVL hardware requirements, to be specified by Conduent upon request.

Contact information for Conduent:
Michael Smith
mike.smith6@xerox.com
(443) 259-7156
7160 Riverwood Dr.
Columbia, MD 21046

	CONDUENT AUTHORITY OEM BOM FOR THE IVU-4000 SYSTEM
CONDUENT PART #	**DESCRIPTON**
TBD	ANTENNA, GPS or applicable/WLAN
120004-5	HANDSET
120041-3	INTERNAL AGC MIC
131482-1	Bracket, Handset Dash Mount, GILLIG, San Diego
131623-1	Gasket, External AGC Microphone
140394-300	Cable Assembly, IVU to WLAN Antenna, w/SMA, W21
410001A	ASSY MDT-4000
410006A	ASSY IVU-4000 /TIB EQUIPMENT TRAY (INCLUDES IVU AND TIB)
420000-24	EXTERNAL AGC MIC
440007-72	Cable Assembly, IVU-4000 LAN Cable
440040-60	Cable Assembly, APC Analyzer, J1708 Van, Power, Door Open
440041-312	Cable Assembly, IVU-4000 TIB - Fare Box J1708, Term Strip
440043-48	Cable Assembly, Vehicle Power to IVU-4000 TIB
440044-36	Cable Assembly, Vehicle Power to IVU-4000
440047-18	Cable Assembly, External AGC Pigtail
440048-216	Cable Assembly, External AGC Pre-AMP - Audio Interface, TIB
440055-180	Cable Assembly, AGC Microphone to IVU4000 TIB Audio
440056-144	Cable Assembly, IVU-4000 to Destination Sign
440071-216	Cable Assembly, Handset to IVU-40000 TIB
440072-180	Cable Assembly, AVA LED Sign to J1708_TR, IVU-4000 TIB
4400XXX-18	Cable Assembly, Radio Tray Power, W14,
440XXX-144	Cable Assembly, Destination Sign to TIB
440XXX-240	CABLE MDT TERMINAL TO IVU-4000
440XXX-300	CABLE ASSY, GPS ANTENNA, IVU-4000 to GPS ANT
440XXX-48	Cable Assembly, Discrete Connections, IVU-4000 TIB
TBD	ANTENNA CELL ROUTER
TBD	IRMA MATRIX APC SYSTEM 2 DOOR
TMS-006042	NMO Mount (Tessco 23538)
TMS-006291	DB25 Male to Female 12"

TMS-006292	DB26 Male to Female 12"
TMS-006293	DB44 Male to Female 12"
TMS-006294	DB50 Male to Female 12"
TMS-006298	Mounting Base with Ball Vesa Base 3.625 sq
TMS-006299	Mounting Base Square 100 and 75 hole 4.75 sq
TMS-006300	Socket Arm Assembly, DBL Ball,
N/A	HANOVER Interior 2-Line Stop Request

Public Address System Speakers

Eight internal and one external low-profile speakers with baffles, mobile/page part #603/6FB, or approved equal (that can handle digital voice/annunciation). Speakers shall be installed at locations in the ceiling of the vehicle with all connecting wires available in a wire loom for easy replacement and protection. Speakers wired in series shall incorporate shunt resistors to prevent an open circuit in the event of a speaker failure.

Public Address System Switch

A foot operated momentary switch mounted to the floor to the left of the steering column shall activate the PA amplifier. This switch, along with the turn signal and headlight dimmer, shall be located on an inclined platform. Authority shall provide a standard sample at the pre-production meeting.

Mobile Router

a) Contractor shall provide and install a Cradlepoint, or approved equal, router, model number IBR1700, modular modem MC400-1200M plus five (5) year Advance licensing and a Cradlepoint 170654-000 five-way antenna for each bus. The router shall be mounted within the electronics cabinet using 3.5-inches of 1-inch wide 3M Dual Lock SJ3560 applied according to the manufacturer's directions along the mounting holes edge of each side of the mobile router. The antenna shall be mounted at a location approved by Authority's project manager. Power, ground, and ignition signal shall be sourced from the same points as the 12 Volts of the ITMS radio power source.

b) In addition, each mobile router shall be pre-paid and added to Authority's Cradlepoint ECM Prime account and Authority's CradleCare account for a period of five (5) years. Cradlepoint ECM shall be at Prime service level and CradleCare shall be at full-service level to include:

    i. Twenty-four (24) hours per day, seven (7) days per week qualified phone support and twelve (12) hours per day, five (5) days per week

portal/chat support for Cradlepoint routers, NCM and NetCloud Gateway
ii. Next business day replacement
iii. Service level targets
iv. Knowledge Base access
v. NetCloud OS upgrades
vi. Extended router warranty for term of CradleCare license

c) Cloud Services – Cloud Services for management of the mobile routers for a period of five (5) years shall be provided. At minimum, the cloud services shall meet the following features, functionality, and specifications:

i. Open API such that third-party applications can interphase with the cloud service to provide added value functionality.
ii. Manage user access at multiple levels.
iii. Single point management of all mobile routers in Authority's fleet
iv. Fleet configurations that provide the ability to set-up and save a single router, then copy that configuration to another router, group, or fleet.
v. Group configurations that provide the ability to designate groups of routers with individual configurations to be managed together.
vi. Remote firmware management that provides the ability to download and apply firmware to a single router, group, or fleet.
vii. GPS based location services.
viii. Command line interface to individual routers in real-time.
ix. Historical storage of data for a minimum of ninety (90) days.

d) Alert System – Provides the ability for the router to alert the system administrator of critical issues with the router. The system shall be capable of alerting via the cloud interface, through SNMP trapping, and email. Alerts shall be configurable for the following:

i. Down time
ii. Security
iii. Data usage
iv. Hardware failure
v. Geo-fencing

e) Support – Technical support for the mobile routers for a period of five (5) years shall be provided. At minimum technical support shall meet the following features, functionality and specifications:

i. Unlimited twenty-four (24) hours per day, seven (7) days per week phone support
ii. Carrier specific support
iii. Dedicated assigned technical engineer

iv. Complete access to technical training on the router, networking and cloud services
v. Unlimited access to firmware, software, feature upgrades, and patches
vi. Priority consideration for advanced access to features and beta testing

27. Fluid Management System

a) The bus shall be equipped with a Fleet Watch combination bus mileage/fluid management system transponder that shall be installed and programmed with Authority vehicle's ID number and odometer mileage. The system shall be capable of communication at the fuel island, or other location to be determined. Use of this device will not impact or be impacted by other devices operating in the vehicle, or vehicles, on a CAN-bus network and/or platform.

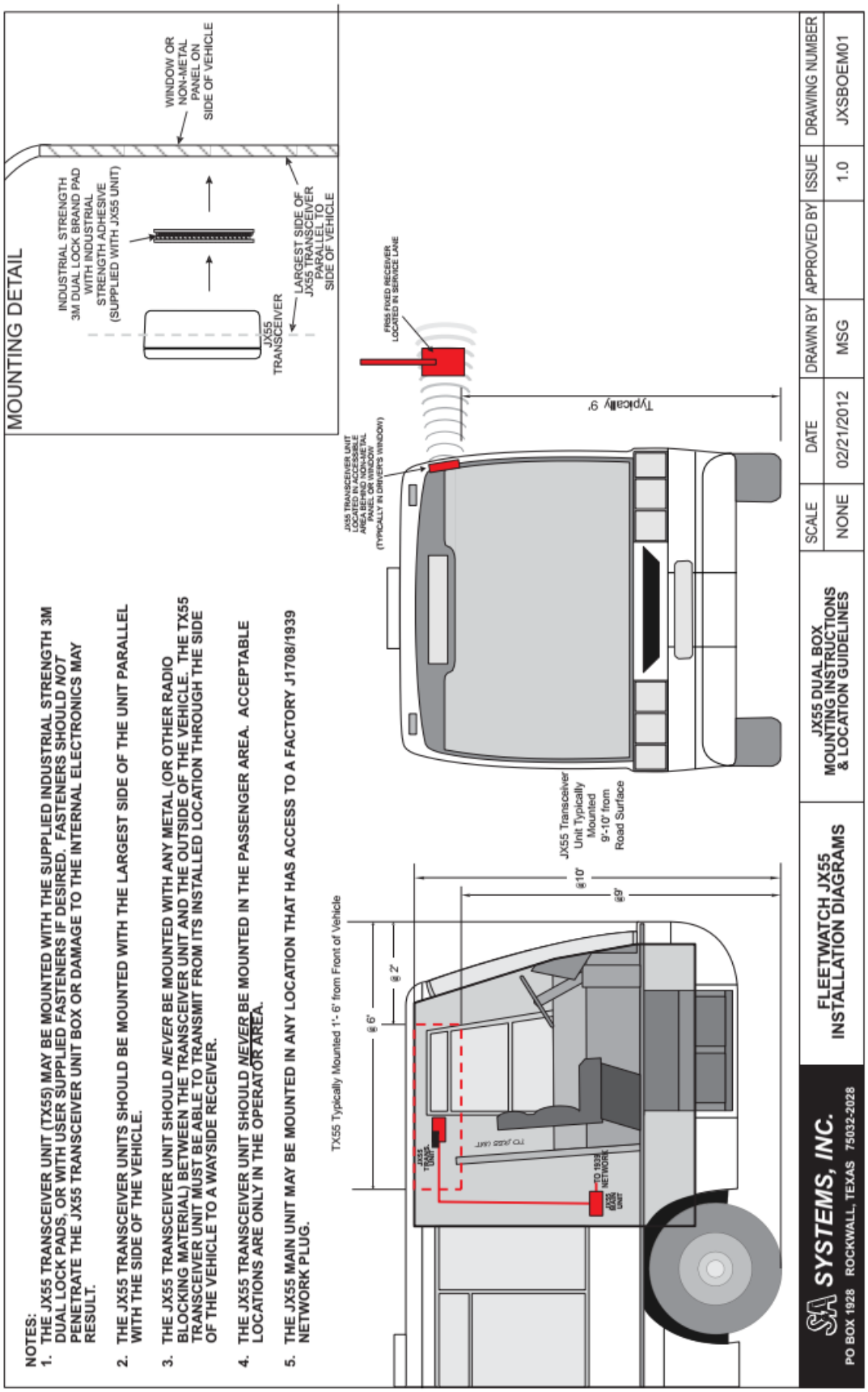
b) The module shall be accessible by a mechanic, without removing panels or other electronic devices or components. The Authority shall approve the location of the Fleetwatch dataloger/module/device during the presentation/evaluation of the first article bus. Contractor shall contact Fleetwatch to obtain the latest transponder/interface required for the Authority's existing configuration.

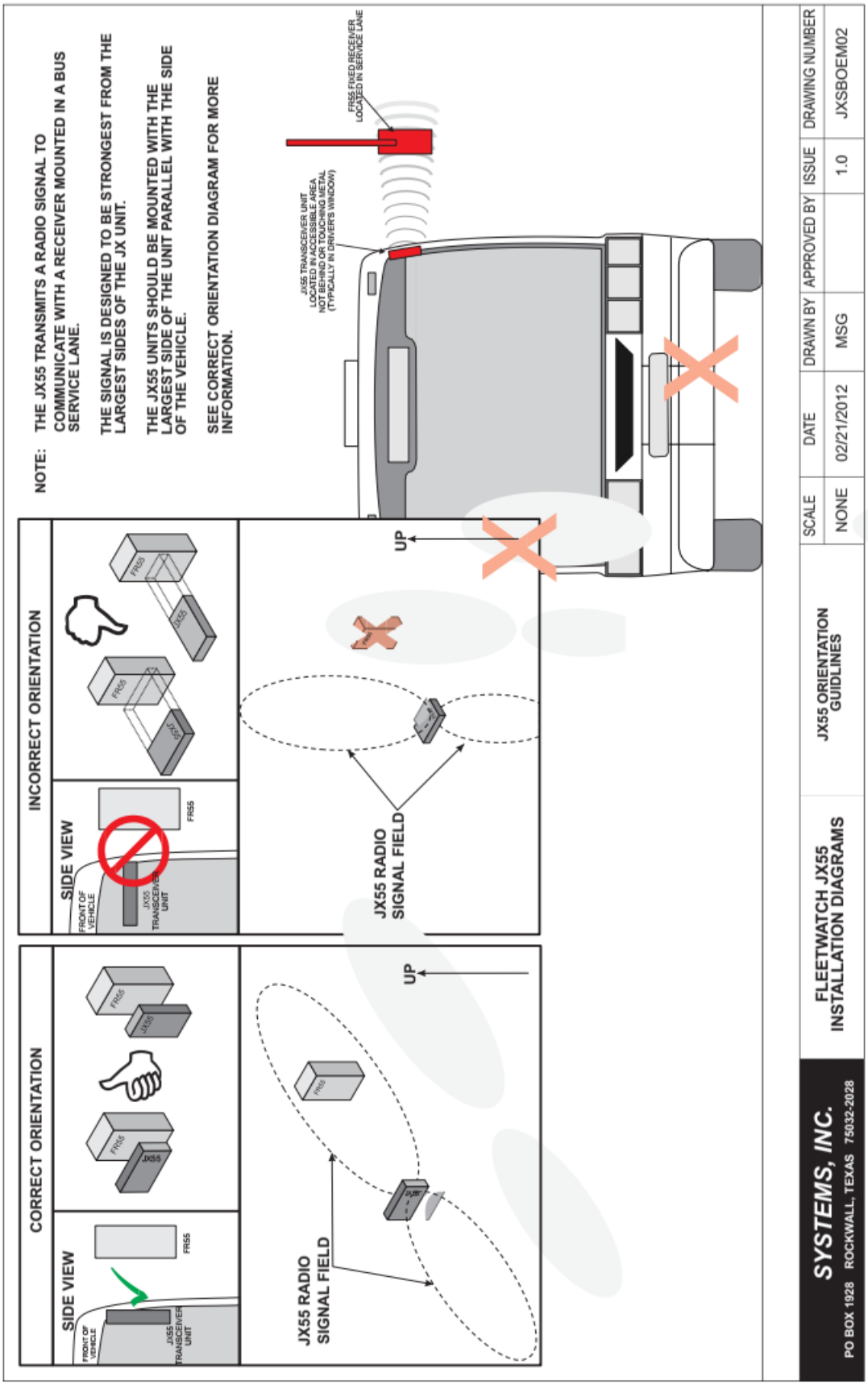
c) S&A Systems Inc., Rockwall, Texas, phone (972) 722-1009.

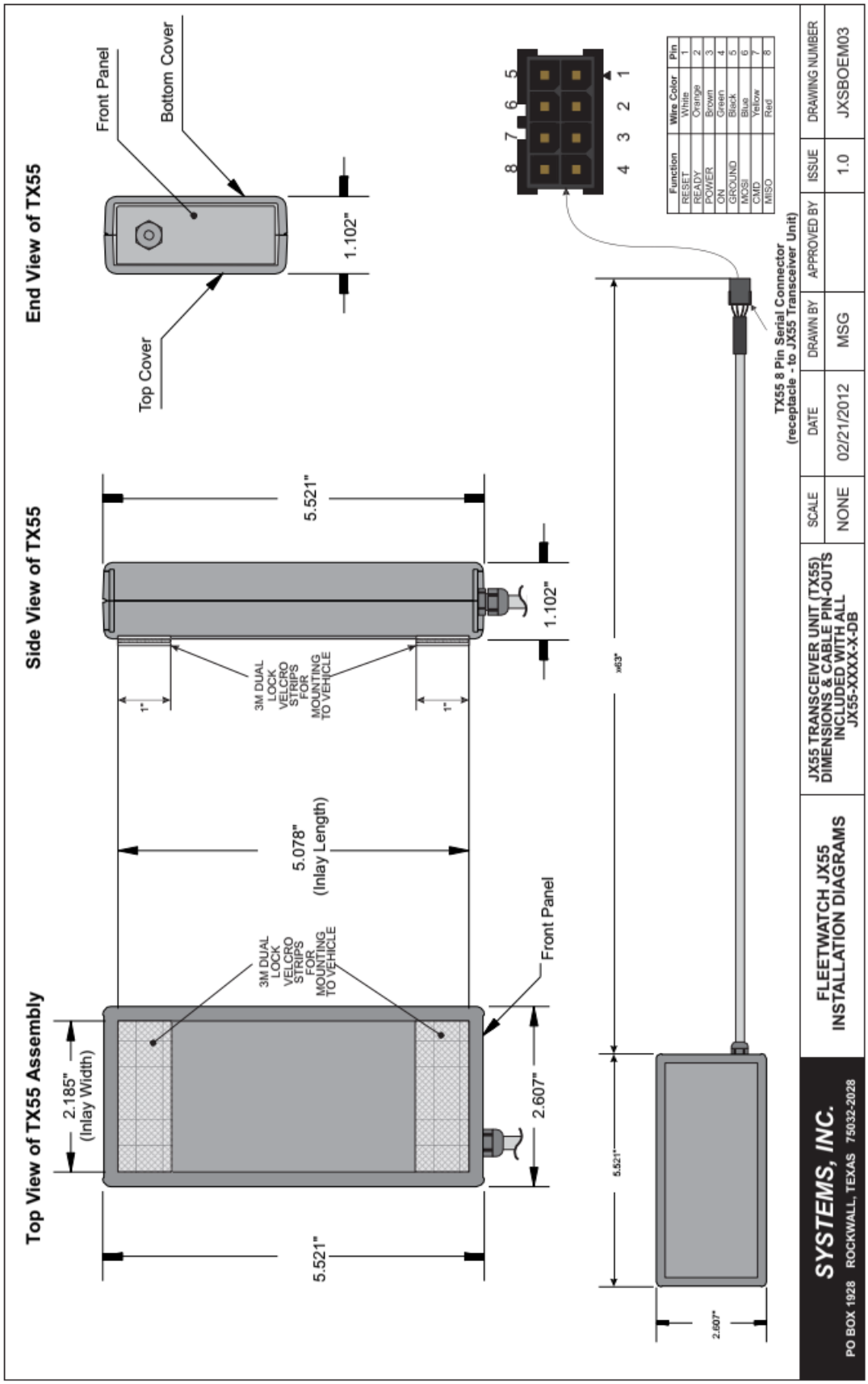
Mailing Address
S&A Systems, Inc.
P.O. Box 1928
Rockwall, TX 75087

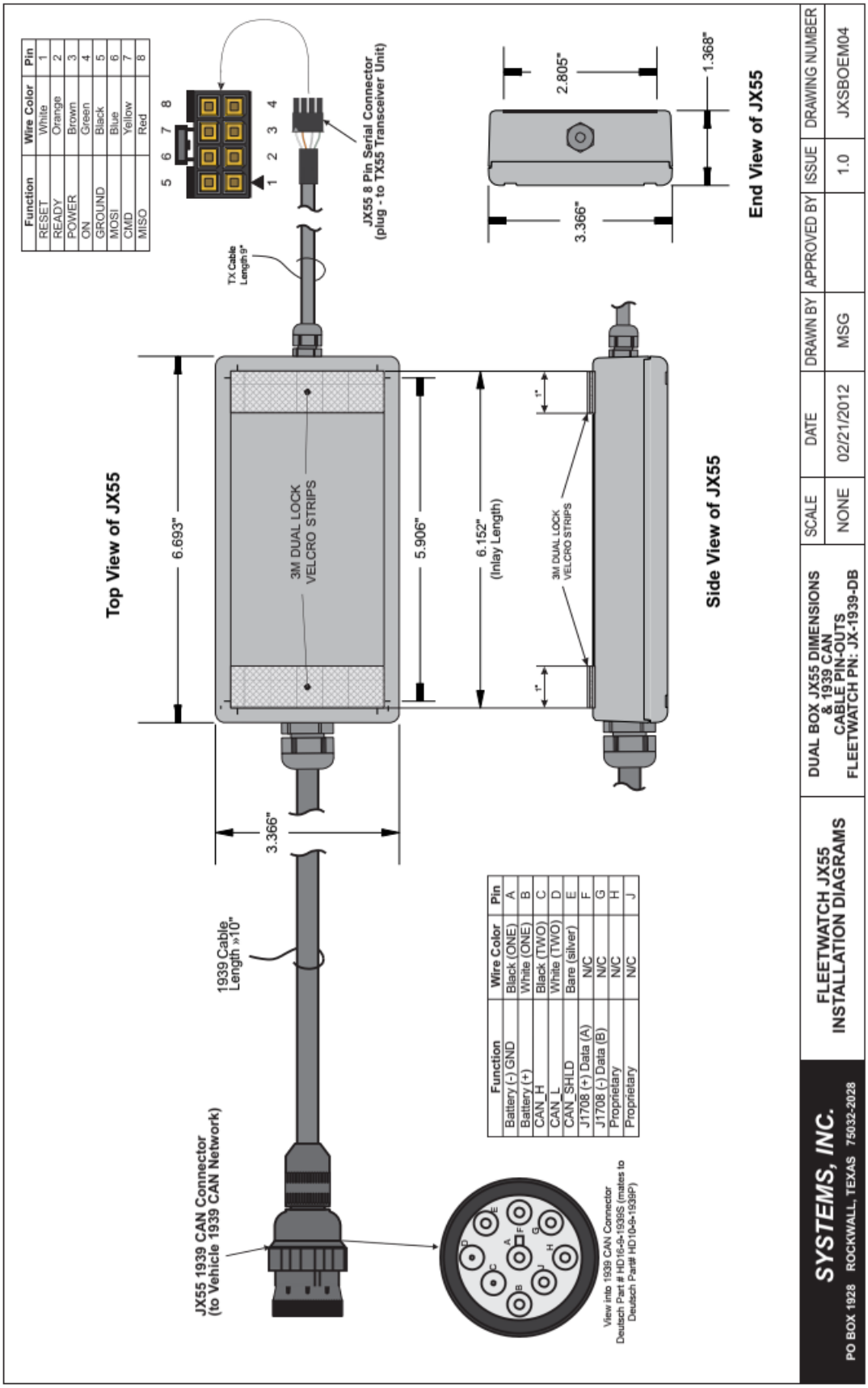
Shipping Address
S&A Systems, Inc.
992 Sids Rd.
Rockwall, TX 75032

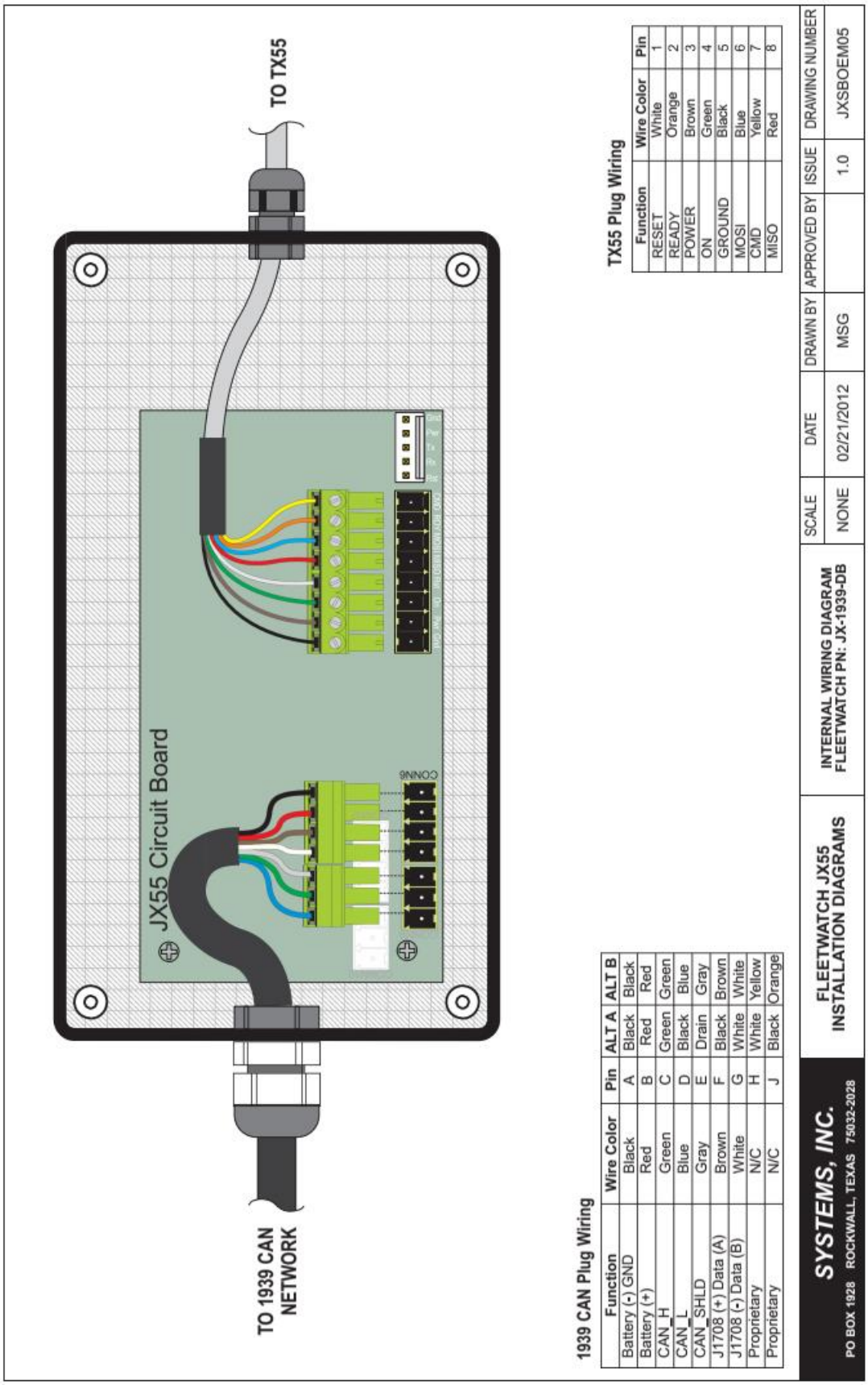
Contact
Terry Walsh
(972) 722-1009
terry.walsh@fleetwatch.com


MOUNTING DETAIL
INDUSTRIAL STRENGTH 3M DUAL LOCK BRAND PAD WITH INDUSTRIAL STRENGTH ADHESIVE (SUPPLIED WITH JX55 UNIT)
WINDOW OR NON-METAL PANEL ON SIDE OF VEHICLE
JX55 TRANSCEIVER
LARGEST SIDE OF JX55 TRANSCEIVER PARALLEL TO SIDE OF VEHICLE
NOTES:
1. THE JX55 TRANSCEIVER UNIT (TX55) MAY BE MOUNTED WITH THE SUPPLIED INDUSTRIAL STRENGTH 3M DUAL LOCK PADS, OR WITH USER SUPPLIED FASTENERS IF DESIRED. FASTENERS SHOULD NOT PENETRATE THE JX55 TRANSCEIVER UNIT BOX OR DAMAGE TO THE INTERNAL ELECTRONICS MAY RESULT.
2. THE JX55 TRANSCEIVER UNITS SHOULD BE MOUNTED WITH THE LARGEST SIDE OF THE UNIT PARALLEL WITH THE SIDE OF THE VEHICLE.
3. THE JX55 TRANSCEIVER UNIT SHOULD NEVER BE MOUNTED WITH ANY METAL (OR OTHER RADIO BLOCKING MATERIAL) BETWEEN THE TRANSCEIVER UNIT AND THE OUTSIDE OF THE VEHICLE. THE TX55 TRANSCEIVER UNIT MUST BE ABLE TO TRANSMIT FROM ITS INSTALLED LOCATION THROUGH THE SIDE OF THE VEHICLE TO A WAYSIDE RECEIVER.
4. THE JX55 TRANSCEIVER UNIT SHOULD NEVER BE MOUNTED IN THE PASSENGER AREA. ACCEPTABLE LOCATIONS ARE ONLY IN THE OPERATOR AREA.
5. THE JX55 MAIN UNIT MAY BE MOUNTED IN ANY LOCATION THAT HAS ACCESS TO A FACTORY J1708/1939 NETWORK PLUG.
FRS6 FIXED RECEIVER LOCATED IN SERVICE LANE
JX55 TRANSCEIVER UNIT LOCATED IN ACCESSIBLE AREA BEHIND NON-METAL PANEL OR WINDOW (TYPICALLY IN DRIVER'S WINDOW)
Typical 9'
JX55 Transceiver Unit Typically Mounted 9'-10' from Road Surface
@10'
@9'
TX55 Typically Mounted 1'- 6' from Front of Vehicle
@ 6'
@ 2'
TO J1939 NETWORK
JX55 MAIN UNIT
JX55 TRANS-CEIVER UNIT
SA SYSTEMS, INC.
PO BOX 1928 ROCKWALL, TEXAS 75032-2028
FLEETWATCH JX55
INSTALLATION DIAGRAMS
JX55 DUAL BOX
MOUNTING INSTRUCTIONS
& LOCATION GUIDELINES
SCALE
NONE
DATE
02/21/2012
DRAWN BY
MSG
APPROVED BY
ISSUE
1.0
DRAWING NUMBER
JXSBOEM01


NOTE: THE JX55 TRANSMITS A RADIO SIGNAL TO COMMUNICATE WITH A RECEIVER MOUNTED IN A BUS SERVICE LANE.
THE SIGNAL IS DESIGNED TO BE STRONGEST FROM THE LARGEST SIDES OF THE JX UNIT.
THE JX55 UNITS SHOULD BE MOUNTED WITH THE LARGEST SIDE OF THE UNIT PARALLEL WITH THE SIDE OF THE VEHICLE.
SEE CORRECT ORIENTATION DIAGRAM FOR MORE INFORMATION.
CORRECT ORIENTATION
INCORRECT ORIENTATION
SIDE VIEW
FRONT OF VEHICLE
JX55 TRANSCEIVER UNIT
FR55
JX55
JX55 RADIO SIGNAL FIELD
UP
JX55 TRANSCEIVER UNIT LOCATED IN ACCESSIBLE AREA NOT BEHIND OR TOUCHING METAL (TYPICALLY IN DRIVER'S WINDOW)
FR55 FIXED RECEIVER LOCATED IN SERVICE LANE
SYSTEMS, INC.
PO BOX 1928 ROCKWALL, TEXAS 75032-2028
FLEETWATCH JX55 INSTALLATION DIAGRAMS
JX55 ORIENTATION GUIDLINES
SCALE NONE
DATE 02/21/2012
DRAWN BY MSG
APPROVED BY
ISSUE 1.0
DRAWING NUMBER JXSBOEM02


End View of TX55
Front Panel
Bottom Cover
Top Cover
1.102"
Side View of TX55
5.521"
1.102"
1"
3M DUAL LOCK VELCRO STRIPS FOR MOUNTING TO VEHICLE
1"
5.078" (Inlay Length)
Top View of TX55 Assembly
2.185" (Inlay Width)
3M DUAL LOCK VELCRO STRIPS FOR MOUNTING TO VEHICLE
Front Panel
2.607"
5.521"
8 7 6 5
4 3 2 1
Function | Wire Color | Pin
RESET | White | 1
READY | Orange | 2
POWER | Brown | 3
ON | Green | 4
GROUND | Black | 5
MOSI | Blue | 6
CMD | Yellow | 7
MISO | Red | 8
TX55 8 Pin Serial Connector
(receptacle - to JX55 Transceiver Unit)
5.521"
2.607"
SYSTEMS, INC.
PO BOX 1928 ROCKWALL, TEXAS 75032-2028
FLEETWATCH JX55
INSTALLATION DIAGRAMS
JX55 TRANSCEIVER UNIT (TX55)
DIMENSIONS & CABLE PIN-OUTS
INCLUDED WITH ALL
JX55-XXXX-X-DB
SCALE
NONE
DATE
02/21/2012
DRAWN BY
MSG
APPROVED BY
ISSUE
1.0
DRAWING NUMBER
JXSBOEM03


Function | Wire Color | Pin
RESET | White | 1
READY | Orange | 2
POWER | Brown | 3
ON | Green | 4
GROUND | Black | 5
MOSI | Blue | 6
CMD | Yellow | 7
MISO | Red | 8
5 6 7 8
1 2 3 4
JX55 8 Pin Serial Connector (plug - to TX55 Transceiver Unit)
TX Cable Length 9"
Top View of JX55
6.693"
3M DUAL LOCK VELCRO STRIPS
5.906"
6.152" (Inlay Length)
1"
1"
3M DUAL LOCK VELCRO STRIPS
3.366"
Side View of JX55
2.805"
3.366"
1.368"
End View of JX55
1939 Cable Length »10"
3.366"
JX55 1939 CAN Connector (to Vehicle 1939 CAN Network)
Function | Wire Color | Pin
Battery (-) GND | Black (ONE) | A
Battery (+) | White (ONE) | B
CAN_H | Black (TWO) | C
CAN_L | White (TWO) | D
CAN_SHLD | Bare (silver) | E
J1708 (+) Data (A) | N/C | F
J1708 (-) Data (B) | N/C | G
Proprietary | N/C | H
Proprietary | N/C | J
View into 1939 CAN Connector
Deutsch Part # HD16-9-1939S (mates to Deutsch Part# HD10-9-1939P)
SYSTEMS, INC.
PO BOX 1928 ROCKWALL, TEXAS 75032-2028
FLEETWATCH JX55 INSTALLATION DIAGRAMS
DUAL BOX JX55 DIMENSIONS & 1939 CAN CABLE PIN-OUTS
FLEETWATCH PN: JX-1939-DB
SCALE | NONE
DATE | 02/21/2012
DRAWN BY | MSG
APPROVED BY
ISSUE | 1.0
DRAWING NUMBER | JXSBOEM04



TX55 Plug Wiring

Function	Wire Color	Pin
RESET	White	1
READY	Orange	2
POWER	Brown	3
ON	Green	4
GROUND	Black	5
MOSI	Blue	6
CMD	Yellow	7
MISO	Red	8

1939 CAN Plug Wiring

Function	Wire Color	Pin	ALT A	ALT B
Battery (-) GND	Black	A	Black	Black
Battery (+)	Red	B	Red	Red
CAN_H	Green	C	Green	Green
CAN_L	Blue	D	Black	Blue
CAN_SHLD	Gray	E	Drain	Gray
J1708 (+) Data (A)	Brown	F	Black	Brown
J1708 (-) Data (B)	White	G	White	White
Proprietary	N/C	H	White	Yellow
Proprietary	N/C	J	Black	Orange

SYSTEMS, INC.
PO BOX 1928 ROCKWALL, TEXAS 75032-2028

FLEETWATCH JX55
INSTALLATION DIAGRAMS

INTERNAL WIRING DIAGRAM
FLEETWATCH P/N: JX-1939-DB

SCALE	DATE	DRAWN BY	APPROVED BY	ISSUE	DRAWING NUMBER
NONE	02/21/2012	MSG		1.0	JXSBOEM05

28. PLC System Updates

    Contractor, at the Authority's request and after final vehicle acceptance, shall be responsible for providing free of charge, up to three (3) Vansco/I/O, PLC, or applicable programing changes per-year, for 12 years; 36 cumulative. The Authority requested changes shall not be in conflict with any safety operational feature built into the bus configuration, rather shall be intended as operational enhancements or resulting from Authority's initiated campaigns; e.g., engine replacement, transmission upgrades, addition of lights, improvements in performance and any others similar nature and scope.

29. All front stanchions, driver's entry door and windshield support stanchions to be yellow powder coat - stanchion fittings to remain stainless steel.

30. If the driver's platform is higher than 12-inches, the GFI Odyssey farebox shall be mounted on a platform of suitable height to provide accessibility for the operator without compromising a passenger's access. The platform shall be sufficiently rigid to prevent swaying, bouncing and movement of the farebox. Contractor shall obtain, in writing, the Authority's approval for the design, securing, materials used, and location of this platform. The farebox's horizontal platform shall be covered with Line-X, or approved equal, safety yellow anti-skid material. The farebox will require 24V power for the farebox.

    Contractor shall be responsible for providing the required mounting provisions (e.g., pre-drilled bar(s), bracket, electrical power, holder, or other as applicable) in the front entrance section of the bus to accommodate mounting Authority's "iNit" proxmobile reader/scanner. The iNit unit will be provided by Authority and is intended for Authority's web-based application/transactions. The final mounting location shall be defined during the evaluation of the first article. Existing mounting location is depicted below.

During the pre-production meeting, Contractor and Authority shall discuss how to design the operator control area to allow maximum visibility and access to the Farebox Operator Control unit, AMDT/IVU, iNit, and all others.

31. The bus shall be equipped with a rear mounted wheelchair ramp. Contractor shall submit a scaled drawing with clear and complete dimensions indicating potential seating layouts intended to maximize seated capacity, wheelchair turning radius, wheelchairs in parked position, wheelchair accommodations for rear mounted wheelchair ramps. An ADA compliance envelope of 30 x 48-inches shall be included in the drawings showcasing that the physical layouts proposed are in compliance with the ADA requirements

32. Public Address System Microphone

The system shall include a low-profile stealth microphone that the operator can activate at the steering column clever devices P/N 901-1500-200 or applicable. This microphone allows for a hands-free operation. An input jack shall be provided in the operator's area for a hand-held microphone.

33. Operator's Seat

Contractor shall provide and install the USSC Q90 or equivalent, or the Recaro Ergo Metro or approved equal. OCTA's final decision will provided during the pre-production meeting. The seat shall accommodate operators from the fifth percentile female to 95th percentile male, and include the following items:

a) PNEUMATIC FULL STROKE SUSPENSION: Eliminates torque during suspension movement and provides five (5) inches of vertical height adjustment.
b) QUICK DUMP: Air valve shall incorporate quick dump feature for easy entry and egress. Air valve will have roll pin stop, not snap ring. Air valve will be mounted on the left-hand side of the seat cushion, close to the front of the seat.
c) BILATERAL DAMPERS: Suspension system shall be damped by two (2) shock absorbers to eliminate torque in the suspension system. Dampers to attach to the scissors system.
d) SECONDARY ANTI-BOTTOM-OUT SYSTEM: Two (2) half-circle rubber bumpers that prevent the suspension from bottoming out shall prevent Spine shock.
e) THREE (3) POSITION SUSPENSION LOCKOUT: Seat shall be provided with a three (3) position suspension lockout located on the left rear side of the seat frame. The outward position allows full suspension travel; the middle position limits suspension range; the inside position locks out the suspension completely for use during maintenance and for shipping purposes.

f) PROTECTIVE BELLOWS: Seat shall be provided with protective bellows that prevent dust and debris from fouling the suspension system and keep fingers and other body parts clear of the scissors system.
g) PROTECTIVE BELLOWS: Seat shall be provided with a heavy-duty protective back-shell
h) PENDULUM SCISSORS SYSTEM: Scissors are to be solid bar stock with outside scissors 12.5-inch width.
i) SEAT PAN: Suspension shall incorporate a secondary leaf spring suspension that facilitates keeping the spine straight up and down.
j) AIR SLIDE RELEASE: Seat shall be equipped with air activated fore and aft slide release, (United States Patent No. 5,613,733), air pressure shall be required to release the fore/aft slides from the locked position. Design shall ensure that seat remains locked in position should there be loss of air pressure. There shall be a manual override.
k) BILATERAL ADJUSTMENTS: All seat adjustments shall activate both sides of the seat to prevent torque and increase durability.
l) BACK RECLINE: Recline system shall engage on both sides of the backrest. Operators shall be able to adjust the backrest recline from knobs on either side of the back. Recline shall be adjustable from 45 to 105-degrees.
m) SEAT TILT: Two (2) knobs shall manually operate eight (8)-degrees of stepless seat tilt, one on either side of the seat. Seat tilt knob on one side is unacceptable. Seat tilt shall operate independently of the seat height adjustment, allowing full tilt at all heights. Bilateral tilt is necessary to eliminate torque in the suspension system.
n) FORE/AFT ADJUSTMENT: The entire seat shall adjust fore/aft a minimum of 11.80-inches. Slides shall be double locking, roller bearing design. Slides shall be located below the suspension.
o) LUMBAR SUPPORT: Three (3) air bladders shall be in the lumbar region of the back frame. Independent switches located on the right front side of seat frame shall activate lumbar bags. Lumbar systems shall operate off the vehicle air pressure, without pumps or motors.
p) SECUREMENT OF UPHOLSTERY TO FOAM: Foam shall have Velcro molded into the foam. Velcro shall be used to secure the upholstery material in place allowing quick, easy reupholstering of the operator's seat without having to remove it from the vehicle. Foam shall be self-skinning polyurethane.
q) SOLID STEEL BACK: Seat shall be equipped with solid steel back that prevents break-through.
r) INTEGRATED LAP BELT: Seat shall be provided with ALR (Automatic Locking Retractor) 2-point lap belt. Seat shall have integral tether straps that allow seat to meet FMVSS 207/210-pull test. Seat systems shall allow operator to move seat front to back without having to loosen lap belts. Seat belt shall be adjustable to fit up to 54-inches in length.
s) RISER: Seat shall be provided with an appropriate mild steel heavy-duty riser. Height shall be determined during the first article evaluation.

t) SEAT CUSHION: Air circulation/venting provisions with minimum 19-inch width; minimum 18.5-inch length; 16 to 21-inches from uncompressed seat cushion to the floor.
u) UPHOLSTERY: Seat shall be upholstered with Holdsworth DEFENDER, or approved equal, A72OCW with the Authority "T" logos fabric upholstery Fabric inserts with vinyl boxing.
v) WIDE BACKREST: Air circulation/venting provisions with width adjustable from 19 to 21-inches; 23-inches from uncompressed seat cushion to top of backrest
w) 4-Way adjustable head rest

34. The basic ADA securement system shall be USSC 4-ONE or American Seating Q-POD, or approved equal, to include a three-point securement system, stabilizing bumper, scooter ring provisions, multiple scooter straps for two ADA positions, integrated shoulder belt thus eliminating window brackets, electrical release with back-up provisions with audible alarm, integrated wheelchair securements, stainless steel paneling's to minimize vandalism, belting system for conventional wheelchairs as well as three wheel scooters. All flip-up seats' locking/latching mechanisms shall be located on the right-hand side of the seats. Antiskid Line-X, or approved equal, flooring material, subject to the Authority's approval, is required at all wheelchair locations.

    The controls for the loading system shall be located near the rear door in which the system is located. The key "on" switch, using key UCP #2051641, shall be located at the driver's console/dashboard panel. The ramp and kneeling controls shall also be incorporated in a secondary key-locked metal enclosure using key UCP #2051641 located by the door, as to not obstruct passage through the doorway or aisle. The location and shape of the enclosure shall be discussed at the pre-production meeting and will be subject to the Authority approval at that time.

    A switch shall be provided in the operator's area to disable the loading system using key-lock UCP # 2051641. The bus shall be prevented from moving during the loading or unloading cycle by a shifter, throttle and brake interlock system.

35. Three (3)-Position Bicycle Rack

    The bus shall have a front bumper mounted 3-position bike rack, as manufactured by Byk Rack, Sports Works or approved equal. The bicycle rack dimensions shall comply with the California Vehicle Code. The bike rack shall be made of stainless steel, powder coated flat black and include a solid-state proximity-sensing device. The sensing device shall be incorporated into the operator's indicator panel, alerting the operator of bike rack position when not in its fully stowed position. In addition, a convex mirror mounted around the driver's workstation shall be used for viewing of deployed bike-rack.

Two (2) additional low-beam style of lights, intended to illuminate the roadway when the rack is loaded with bicycles, shall be mounted on a practical location on the rack, bumper, bracket or other attachment(s) not subjected to vibrations that will hinder the low-beam aiming direction. These additional lights shall be energized only when the 3-position bicycle rack is deployed.

Clearly posted instructions to operate the rack shall be posted on the front of the bus, visible by any patron during loading and unloading of bicycles.

36. The parking brake application shall be performed via manual operation via toggle switch located on the driver's side console at a location that is practical and in compliance with best ergonomic practices. Soft padding shall be provided on both sides of the parking brake knob to ease operator's hand/finger interface with the device.

37. The plug-in battery charging, single receptacle, shall not be of proprietary nature and, shall be mounted on the front of the bus at a location to be determined during the pre-production meeting(s).

38. Curbside Cornering Lights

    Two (2) LED cornering lights, 4-inch diameter minimum, or applicable, shall be provided to allow the operator viewing of the curbs when making right-hand turns. Such lights shall be activated by the floor-mounted Right-Hand turn signal switch and shall be aimed at each, front and rear curbside wheels. The lights shall remain energized after the turn-signal switch is released, for an amount of time to be determined during the evaluation of the first article.

39. Reverse Motion and Rear Door Camera – Display

    The bus manufacturer shall be responsible for providing a rear-door viewing camera, Apollo camera RR-CTMIRA, and monitor, Rear View Safety-7709900, with an impact rating of 5G or greater, 7-inch x 5-inch x 1-inch LCD color monitor located on the driver's vicinity intended to monitor the passenger traffic at the rear door of the bus including reverse motion. The LCD color monitor shall be equipped with features that automatically adjust intensity and contrast to provide clear views under all ambient light conditions. Camera's field of view and additional operating display and functionality features shall be discussed at the pre-production meeting and during the first article's evaluation. Sunshade or antireflection devices maybe required for both, the camera and driver's monitor/display.

40. Door Control

    The bus shall be equipped with a Vapor, or approved equal, ergonomic door position selector knob, digital door controller equipped with RAISE and KNEEL easy to read, backlighted switch icons/buttons.

41. Adjustable Throttle and Brake Pedals

The bus shall be equipped with Teleflex, or approved equal, adjustable foot controls including brake and throttle pedals. The angle of the accelerator pedal shall be determined from a horizontal plane regardless of the slope of the cab floor. The accelerator pedal shall be positioned at an angle of 27-35 degrees at the point of initiation of contact and extend downward to an angle of 10-18 degrees at full throttle. Authority's Health, Safety & Environmental Compliance department shall approve the accelerator pedal angle, actuation and recovery force as well as location.

42. License Plate Provisions

Provisions, and/or housings, shall be made to mount standard size U.S. license plates perpendicular to the ground per SAE J686 on the front and rear of the bus. These provisions shall direct mount or recess the license plates so that they can be cleaned by automatic bus washing equipment without being caught by the brushes. License plates shall be mounted at a location not to be blocked by the bicycle rack and the device, and provided provisions, shall not allow a toehold or handhold for unauthorized riders.

Licensing and registration shall be completed by the bus manufacturer prior to or by the time of delivery. Contractor shall be responsible for installing a vehicle registration holder, Truck-lite model 97960, or approved equal, subject to the Authority approval.

43. Passenger Assists

Passenger assists in the form of full grip, vertical stanchions or handholds shall be provided for the safety of standees and for ingress/egress. Passenger assists shall be convenient in location, shape, and size for both the 95th-percentile male and the 5th-percentile female standee. Starting from the entrance door and moving anywhere in the bus and out the exit door, a vertical assist shall be provided either as the vertical portion of seat back assist or as a separate item so that a 5th-percentile female passenger may easily move from one assist to another using one hand and the other without losing support. All handholds, stanchions and passenger assists shall be stainless steel.

Excluding those mounted on the seats and doors, the assists shall have a cross-sectional diameter between 1¼ and 1½-inches or shall provide an equivalent gripping surface with no corner radii less than ¼ inch.

All vertical stanchions and horizontals identified by the Authority's Risk Management or Health, Safety & Environmental Compliance Departments or both

shall be covered by a rubber like energy absorbing sleeve (padding) secured in place with adhesive that shall be applied to tubing and sleeve. All passenger assists shall permit a full hand grip with no less than 1½-inches of knuckle clearance around the assist. Passenger assists shall be designed to minimize catching or snagging of clothes or personal items and shall pass the NHTSA Drawstring Test.

44. Passenger hand straps of webbing design, permanently mounted on the selected locations, shall be provided for sections where vertical assists are not available and for the use by passengers that cannot reach to 70-inches and the quantity shall be equal to the allowable number of standees. One per standee overhead assists shall be provided and those shall simultaneously support 150 pounds on any 12-inch length. No more than 5 percent of the full grip feature shall be lost due to assist supports. Final hand-strap configuration/location shall be reviewed during the first article's presentation to Authority.

45. Passenger Contact-Less Acoustic Sensor System

    The buses shall be equipped with a rear-door mounted contact-less acoustic sensor system (CLASS ultra) as manufactured by Vapor or approved equal. The CLASS system shall be designed to allow passengers to initiate the opening of the doors and exit the vehicle and detect the presence of passenger(s) in the defined zones of detection. The rear door shall be equipped with waterproof or weatherproof touch-tape switches and an "on/off" CLASS-system-switch located in the driver's overhead compartment. That switch shall be labeled and, when in the "off" position, the rear door system shall maintain full door operational functionality (tape switches, sensitive edges, driver's door control, etc.)

46. Windows

    All side windows shall be ¼-inch thick tempered glass without window guard, and, at the time of delivery, the interior side of the windows shall be equipped with 3M, 4-layer, or approved equal, anti-graffiti film.

47. Jack Stand Interface

    The bus shall be equipped with pads suitable for placement of stationary jack stands. These pads shall be permanently located to the bus' main structure and capable of providing a stable platform when used in combination with "standard" jack stands. Further requirements of pads and standard interface, as follows:

    a) Pads shall be located as near the vehicle's perimeter as practical, ahead of the front axle and rearward of the rear axle.
    b) Pads shall be located to facilitate un-obstructed removal of the front axle, rear axle, differential carrier assembly, electric drive (Siemens or other).

c) Pads shall interface to a standard jack stand having a 5.5-inch clear of obstructions square platform with a center indexing pin of 1-inch diameter x 1-inch in height.
d) Pads shall be painted safety yellow.
e) Stickers mounted on the outside of the bus' skirt shall clearly identify the padding locations.

48. Operator Storage Box

An enclosed Operator storage area shall be provided with a positive latching door and key-lock UCP # 2051641; minimum approximate size: 355 mm x 355 mm x 355 mm (14" x 14" x 14"). This box shall be located at the driver's workstation area. No key shall be required if the driver's seat, or other, during normal operations, blocks the access to the Operator's storage box.

49. Floor Covering

The floor covering shall have a non-skid walking surface that remains effective in all weather conditions and complies with all ADA requirements. The floor covering, as well as transitions of flooring material to the main floor and to the entrance and exit area, shall be smooth and present no tripping hazards. The no standee line shall be covering the length of the front wheel well housings and, it shall extend across the bus aisle. This line shall be the same color as the outboard edge of the entrance/exit areas. Color/pattern shall be consistent throughout the floor covering. Floor covering shall be flat, Altro type flooring or approved equal. Sample flor patterns shall be presented by the Contractor and selected during the pre-production meeting(s).

All changes in floor elevation shall be marked, at the beginning and at the end, with yellow strips, at least of 2-inches in width, covering the entire width of the aisle where applicable.

50. Remote (Exterior) Door Switch

An exterior door switch shall be provided at a location discussed and defined during the pre-production meeting and the manufacturing and presentation of the first article to Authority, intended to open and close the entrance door when entering or leaving the bus at a layover or other condition similar in nature.

51. Air Reservoirs

All air reservoirs shall meet the requirements of FMVSS Standard 121 and SAE Standard J10 and each tank shall be equipped with clean-out plugs and manual and automatic drain valves. Major structural members shall protect these valves and any automatic moisture ejector valves from road hazards. Reservoirs shall be sloped toward the drain valve. All air reservoirs shall have brass drain valves that discharge below floor level with lines routed to eliminate the possibility of

water traps or freezing or both in the drain line. Automatic pressure differential drain valves, one for each air tank, Bendix or approved equal, shall be mounted on the lower section of the bus' skirt and, be equipped with manual, petcock style of valves, intended to manually drain the air tanks during servicing or, on an as-needed basis

52. Design and construction of the front wheel housings shall allow for the installation of radio/electronic equipment's storage box/compartment that shall extend, continually, from the wheel well housing's top surface to the ceiling using the maximum available section/footprint. This storage box, and trays, are subject to the Authority's approval. The radio/electronic equipment compartment shall be keyed using a flush-mounted ¼-inch turn square-key access.

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

    A general-purpose 5-pound ABC extinguisher and mounting bracket shall be provided. Preliminary mounting location shall be on the front, curbside, wheel well, inside the safety equipment storage box (*). Authority will determine location at the pre-production meeting.

    (*) Safety triangles shall also be mounted and secured inside the safety equipment storage box.

53. Safety yellow markings, at the Authority's discretion, may be required in areas or sections of the wheel well housings that can potentially become trip hazards.

54. Entry door full length stanchions - yellow powder coat, yellow handles added to entry door to be yellow powder coat.

55. Door Dimensions

    Front door width shall be no less than 34-inches and rear door width no less than 40-inches with the doors fully opened. When open, the doors shall leave an opening no less than 76-inches in height.

56. Air fittings intended to be connected/interfaced with Authority's shop air shall be ¼ NPT CP37.

57. Parts Books, Manuals and Drawings

The following shall be provided at time of delivery. The information shall be organized in a thumb drive with each section clearly identified. A draft copy shall be available for review and acceptance prior to preproduction meeting.

a) A complete set of operating instructions, troubleshooting guide, inspection and service guide and detailed manufacturer's parts list.

b) A complete "as built" electrical wiring diagram covering all electrical equipment and electrical circuits installed, complete with wiring codes for each vehicle ordered, including the integration of the OBVSS, ITMS radio system, fluid management system, and fire suppression systems with the bus electrical system.

c) All manuals for the bus accessories, to include complete parts guide, and equipment to include wheelchair lift, air-conditioning system, tie downs, seating, heater, etc.

d) Contractor shall have available complete bus maintenance manuals to include the electric drivetrain and OEM chassis, as well as a complete parts manual for each component.

58. Contractor shall provide a detailed warranty table to include at minimum all pertinent items listed below:

- Original equipment warranty
- Complete bus
- Powertrain to include all components, e.g., traction motor, inverters, regenerative braking system.
- Energy Storage System/Batteries, etc.
- Propulsion System; e.g., Siemens e-Drive, traction motors and/or others as applicable
- Suspension
- Rust
- Destination sign
- Fire suppression system
- On board video surveillance system
- Conduent provided components intended for communication including all cabling and components.
- ADA equipment
- Flooring
- Mirrors
- Roof hatches
- Body structure and others as applicable.
- Brake system
- Brake Regen System
- Heating, Ventilating, and Air conditioning system

- Cooling system(s)
- Door systems
- Air compressor and dryer
- Wheelchair kneeling and ramp system
- 12-24 Volt Alternator or applicable; e.g., DC/DC converter, etc.
- 12-24 Volt Electrical Batteries
- On board charging provisions
- Cooling and thermal management system(s)
- Energy Storage System(s), thermal management
- Fire Suppression System
- Hydraulic pump(s)
- Steering system including steering wheel, gear box, linkages, and all others.
- Destination signs.
- All wiring and electrical harnesses, including connectors, terminal ends, fasteners, securements, etc.
- Headlights
- All LED lights
- Decals – 6-year minimum, unlimited mileage
- Battery cradles, fasteners, brackets and all others.
- Front and Rear Axles;
- Driver's seat
- Instrument cluster and gateway
- CLASS system
- Passenger seats

59. Contractor shall provide a detailed warranty narrative describing the terms under which the proposed warranty, for the High Voltage Battery Packs (indicating # of packs, KWhr, # of cells, etc.) will be applicable.
E.g., initial battery's state of charge (SOC) versus warrantable SOC.

    Measuring tool(s), or protocols, that will be followed when measuring the battery's SOC to determine applicability of warranty. Battery's life expectancy, expected SOC levels through time, projected deterioration curb; time versus deterioration, etc.

60. Contractor to provide replacement cost, using 2020-year pricing, for battery pack(s) including all others projected (expected) expenses associated with the overall operation, and maintenance of the proposed battery powered drivetrain and all bus electrical platform. Wear and tear items can be excluded; e.g., windshield wipers, tires, seat pads, traditional bus related consumables, etc.

61. Contractor shall provide the technical specifications, including pricing, for the available battery chargers, equipped with the applicable connection interface, suitable for the proposed bus. No proprietary charger's plug-in connectors are allowed.

Additionally, each proposed battery-charger option; e.g. 60, 120, 240, 360 KWh or other(s), needs to include the input energy requirement for the unit to operate at peak performance; e.g., 1 phase, 2 phase, 240, 440 Volts, or others. Also, provide the projected amount of time that it will take to charge the bus' batteries, based on different SOC levels; e.g., starting from 20% SOC, from 50% SOC, etc.

OPTIONAL ITEMS

1. OPTIONAL – Rear Section of the Bus. Provisions to prevent Rear End Impacts.

The Authority requests Contractor propose alternative configurations, and pricing if applicable, for the rear section of the bus intended to minimize rear-end collisions when the bus is at a passenger stop. Those provisions could be in the form of high intensity directional reflective tapes, additional lighting, proximity sensing device(s) that activate flashing lights when an upcoming vehicle approaches the stopped bus, strategically mounted stroboscopic lights with variable levels of intensity that are activated when the bus is at a passenger stop location(s) and the doors are energized, etc. All proposed provisions shall comply with all applicable code(s) and regulations for transit buses.

2. OPTIONAL – Driver Protection System - Driver's Barriers

Contractor shall provide separate pricing for having the buses equipped with a driver protection system, e.g., driver's barrier. If more than one model/type of barrier is submitted, Contractor shall provide along with pricing, detailed information associated with each model's attributes and benefits.

3. OPTIONAL – 12-Inch & 15-Inch Safety Awareness Monitor/Displays (One Each)

Contractor shall provide separate pricing for having the buses equipped with one (1), 12-inch safety awareness monitor mounted above the driver and another, 15-inch monitor mounted on the back of the radio compartment facing the passengers. These monitors shall be rugged, vibration proof, equipped with vandal protections and others designed to withstand, and operate, in a transit environment. As a rule, the two monitors shall be mounted in the driver's vicinity however, final location shall be defined during the evaluation of the first article.

Contractor shall be responsible for the complete integration, and installation of the system including all required cabling, brackets, power sources, mounting provisions and others.

Reference 12-inch and 15-inch monitors: Model numbers DMS2012, DMS2015

4. OPTIONAL – Tire Pressure Monitoring System (TPMS)

The tire pressure monitoring system shall be priced separately as an option on the Price Summary Sheet (Exhibit E) under "Optional Item Price Summary Sheet."

An all-wheel tire pressure monitoring system shall be incorporated and integrated with the bus. Preliminary location for the driver's display shall be on the dashboard. Final location shall be defined during the pre-production meetings. The system, e.g., tire pressure sensors, antennas, interfaces, mounting provisions and all others shall be of a heavy-duty design intended to withstand the life of the bus without requiring replacement. Contractor, in its bid, shall include four (4) sets of tools required to excite, read and to ID the sensors when required.

The driver's display shall be capable of reporting individual tire pressure and tire temperature status, it shall report status on demand and/or when the pressures and/or temperatures are exceeding the pre-established normal operating ranges. The TPMS shall be interfaced with the existing bus warning devices thus minimizing redundancy of alarms and displays.

5. OPTIONAL – Recommended List of Spare Components

Contractor shall provide separate pricing for a list of recommended spare components. The Authority, at its discretion, shall select any, all, or none of the proposed components. Contractor is encouraged to suggest additional items that are traditionally required for the upkeeping of the proposed bus.

6. OPTIONAL – Diagnostic Tools and Repair Equipment

Contractor shall provide separate list, and pricing, for the recommend tools and equipment needed to perform diagnostic and repairs of the proposed bus. Unless specified otherwise, the item deliverable shall include all necessary hardware, software, interfaces, cables and instruction(s). It is also required, that diagnostic software shall be operable in a laptop, or electronic table environment.

7. OPTIONAL – Training Hours

Contractor shall provide separate list, and pricing, for the recommended training associated with the vehicle to include:

- Overall Vehicle/System Orientation (Operations) – 8 hours (2 sessions of 4 hours each)
- Overall Vehicle/System Orientation (Maintenance) – 16 hours (2 sessions of 8 hours each or 4 sessions of 4 hours each)

- High Voltage Safety (to comply with NFPA 70E cert) 16 hours (4 sessions of 4 hours each)
- Electric Drive – 48 hours (2 sessions of 24 hours each)
- High Voltage, Charging System (4 sessions of 4 hours each)
- Electrical/ Electronic – 48 hours (6 sessions of 8 hours each)
- Doors – 16 hours (4 sessions of 4 hours each)
- Brakes – 16 hours (4 sessions of 4 hours each)
- HVAC – 16 hours (4 sessions of 4 hours each)
- Wheelchair ramp – 16 hours (4 sessions of 4 hours each)
- Fire Suppression and Detection Systems – 16 hours (4 sessions of 4 hours each)
- Kneeling System – 16 hours (4 sessions of 4 hours each)
- Destination Sign System / Software – 16 hours (4 sessions of 4 hours each)
- Multiplex – 48 hours (2 sessions of 24 hours each)
- Steering Axle / Alignment – 16 hours (4 sessions of 4 hours each)
- Drive Axle – 16 hours (4 sessions of 4 hours each)

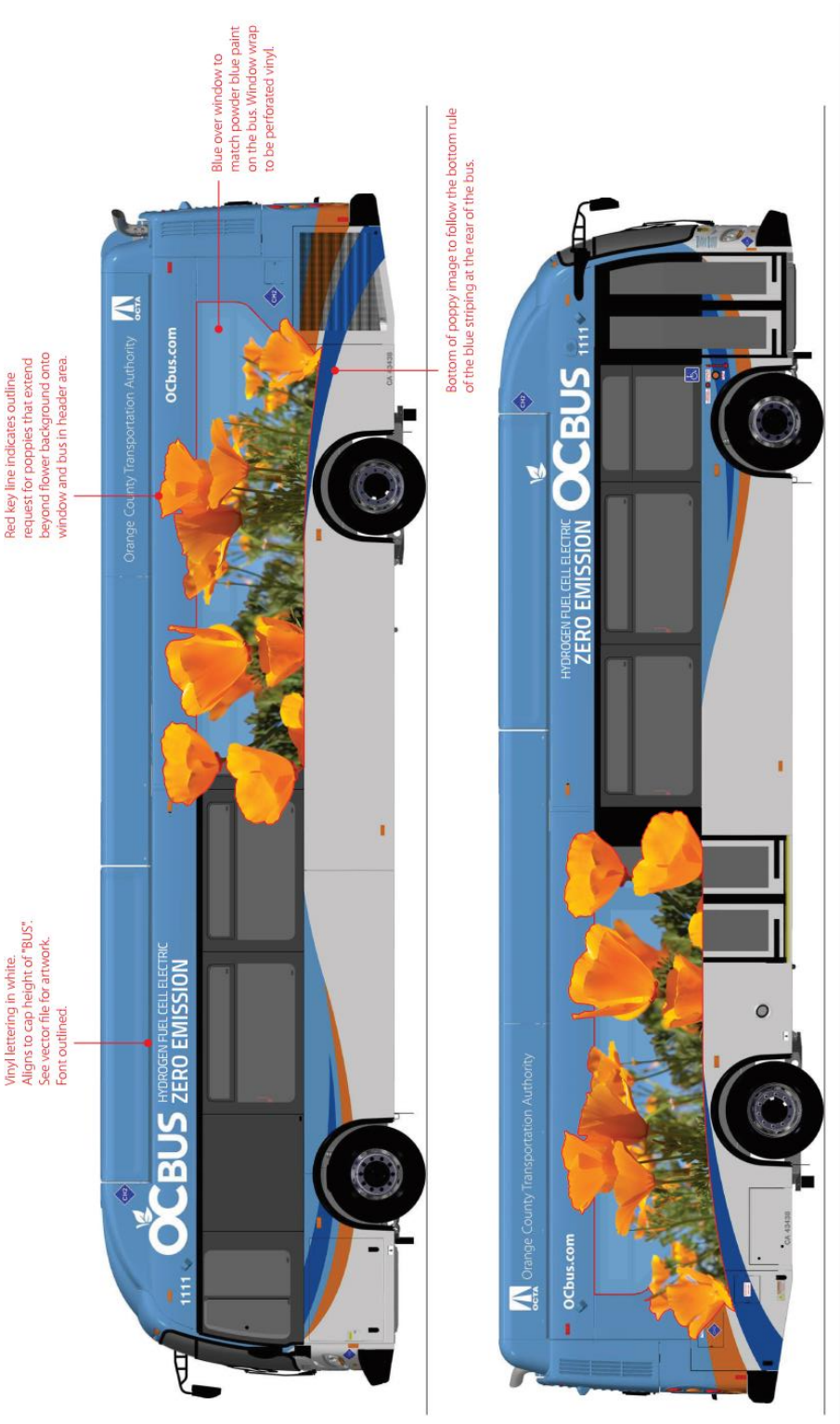
8. OPTIONAL Overhead Charging Provisions

Contractor shall add the previsions required to equip the bus with roof-mounted contact rails to allow charging of the energy storage system on-route, at terminals, or at a depot, at the maximum recommended rate for the energy storage system. The provided rails shall be configured to connect with the four-point contact, downward-extending pantograph style high power chargers in compliance with SAE J3105-1 or an applicable open standard. To maximize flexibility and selection of overhead chargers, no proprietary standards or interfaces will be allowed.

9. OPTIONAL Rear Door Mounting Provisions for i-Nit proxmobile/reader/scanner

Contractor shall be responsible for providing the required mounting provisions (e.g., pre-drilled bar(s), bracket, holder, electrical power or others) as applicable in the rear entrance section/door of the bus to accommodate mounting Authority's "iNit" proxmobile reader/scanner. The iNit unit will be provided by Authority and is intended for Authority's web-based application/transactions. The final rear-door mounting location shall be defined during the evaluation of the first article. The image below is provided only as a reference.

Attachment No. 1 - Identity Package (referential)



Attachment No. 2

Kidde Automatic Fire Detection and Suppression System

QTY	PN	Description
1	413484OC-1457	Fire-Panel
1	421317	Manual Activation
1	421915-2	Battery backup module/battery
1	421440	Sys Reset
1	420421	EOL
2	420010	PM-3M Optical
1	421430-4	LTD
2	476845-30	ALTD Mount clips
2	4765265-8	8ft ALTD
4	474946	Nozzle Dry Chem
3	420584	Bracket Nozzle 90°
1	477163	Bracket, Straight, Nozzle
1	420588	Distribution block
1	5406-P-08	Plug 1/2" NPT
1	408876-123A	Extinguisher 22LB, PK, Gauge Right w/ PM - Bottle connection provides EOL
1	474959	Bracket Ext - floor mount
1	5406-16-12	BUSHING, REDUCE 1 X 3/4 NPT
1	421478	Engine Harness or Applicable
1	420985	Harness Assy Battery Backup
1	474986	Harness Assy Battery Backup to Battery
3	420373-20	20FT Harness Interconnect
1	420373-16	16FT Harness Interconnect
1	420373-13	13FT Harness Interconnect
1	420373-10	10FT Harness Interconnect
1	420373-2	10FT Harness Interconnect
4	N/A	Discharge Lines Stainless Steel OEM built

QUALITY ASSURANCE

A. CONTRACTOR'S IN-PLANT QUALITY ASSURANCE REQUIREMENTS

1. QUALITY ASSURANCE (QA) REQUIREMENTS

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

2. QUALITY ASSURANCE ORGANIZATION

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

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

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

3. QUALITY ASSURANCE ORGANIZATION FUNCTIONS

   The quality assurance organization shall include the following minimum functions.

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

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

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

4. QUALITY ASSURANCE ORGANIZATION FUNCTIONS

a. BASIC STANDARDS AND FACILITIES
The following standards and facilities shall be basic in the quality assurance process.

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

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

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

e. EQUIPMENT USED BY RESIDENT INSPECTORS
Contractor’s gauges and other measuring and testing devices shall be made available for use by the resident inspectors to verify that the buses conform to all specification requirements. If necessary, the Contractor’s personnel shall be made available to operate the devices and to verify their condition and accuracy.

5. CONTROL OF PURCHASES

Contractor shall maintain quality control of purchases.

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

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

6. MANUFACTURING CONTROL

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

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

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

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

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

7. INSPECTION SYSTEM

a. INSPECTION SYSTEM SCOPE
The quality assurance organization shall establish, maintain, and periodically audit a fully-documented inspection system. The system shall prescribe inspection and test of materials, work in process, and completed articles.

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

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

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

d. QUALITY ASSURANCE AUDITS
The quality assurance organization shall establish and maintain a quality control audit program. Records of this program shall be subject to review by the Authority.

B. INSPECTIONS

1. INSPECTION STATIONS

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

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

2. RESIDENT INSPECTOR

   a. RESIDENT INSPECTOR ROLE
   The Authority shall be represented at the Contractor's plant by resident inspectors. Resident inspector shall monitor, in the Contractor's plant, the manufacture of transit buses built under the procurement. The presence of these resident inspectors in the plant shall not relieve the Contractor of its responsibility to meet all of the requirements of this procurement. The Authority shall designate a primary resident inspector, whose duties and responsibilities are delineated in "Pre-Production Meetings", "Authority" and "Pre-Delivery Tests". Contractor and resident inspector relations shall be governed by the “Guidelines” and "Quality Assurance" Provisions.

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

      (1) No less than thirty (30) days prior to the beginning of bus manufacture, the primary resident inspector shall meet with the Contractor’s quality assurance manager and shall conduct a pre-production audit meeting to review the inspection procedures and finalize inspection checklists. The resident inspectors may begin monitoring bus construction activities two (2) weeks prior to the start of bus fabrication.

c. AUTHORITY

Records and data maintained by the quality assurance organization shall be available for review by the resident inspectors. Inspection and test records for this procurement shall be available for a minimum of one (1) year after inspections and tests are completed.

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

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

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

d. SUPPORT PROVISIONS

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

C. ACCEPTANCE TESTS

1. RESPONSIBILITY

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

2. PRE-DELIVERY TESTS

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

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

c. The pre-delivery tests shall be scheduled and conducted with 15 days' notice so that they may be witnessed by the resident inspectors, who may accept or reject the results of the tests. The results of pre-delivery tests, and any other tests, shall be filed with the assembly inspection records for each bus. The underfloor equipment shall be available for inspection by the resident inspectors, using a pit or bus hoist provided by the Contractor. A hoist, scaffold, or elevated platform shall be provided by the Contractor to easily and safely inspect bus roofs. Delivery of each bus shall require written authorization of the primary resident inspector. Authorization forms for the release of each bus for delivery shall be provided by the Contractor. An executed copy of the authorization shall accompany the delivery of each bus.

(1) INSPECTION – VISUAL AND MEASURED

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

(2) TOTAL BUS OPERATION

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

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

3. POST-DELIVERY TESTS

a. The Authority may conduct vehicle inspection tests on each delivered bus. These tests shall be completed within thirty (30) calendar days after bus delivery and shall be conducted in accordance with written test plans. The purpose of these tests is to identify defects that have become apparent between the time of bus release and delivery to the Authority. The post-delivery tests shall include visual inspection and bus operations. No post-delivery test shall apply criteria that are different from the criteria applied in an analogous pre-delivery test (if any).

b. Buses that fail to pass the post-delivery tests are subject to rejection. The Authority shall record details of all Defects on the appropriate test forms and shall notify the Contractor of each bus status within thirty (30) calendar days according to "Acceptance of Bus" after completion of the tests. The Defects detected during these tests shall be repaired according to procedures defined in the Agreement, "Repairs After Non-Acceptance."

(1) VISUAL INSPECTION

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

(2) BUS OPERATION

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

D. GUIDE FOR INSPECTION

The following provides the Authority’s general criteria of the manufacturing and bus inspections intended for each one of the buses procured under this solicitation, including

product quality assurance, audit, certifications required by Federal Transit Administration (FTA), Buy America regulations pertaining to rolling stock purchases and the Authority's on-site inspection tests and acceptance guidelines.

This inspection is intended to be in compliance with all Code of Federal Regulations (CFR), 49 CFR 661 Buy America, 49 CFR 668 Pre-Award and Post Delivery Audits of Rolling Stock purchases, 49 CFR 668 Bus Testing, United States Code (USC) 49 USC 5323 (j) Buy America, Federal Acquisitions Regulations, FTA Master Agreement, FTA Circular 4220.1F, FTA Circular 5000 Grants Management, FTA Handbook Conducting Pre and Post-Delivery Audits, FTA Best Practices Procurement manual to include Buy America Certification, Buy America and Buy America Requirements and all applicable standards set forth in 49 CFR, Part 571 – Federal Motor Vehicle Safety Standards (FMVSS).

1. TASKS

   a. Pre-production meeting in Orange County, California, with representatives from the Authority and the Contractor prior to the manufacturing of First Article bus.

   b. Authority's issuing of the Notice to Proceed with the manufacturing of the First Article bus.

   c. In-plant inspection of the First Article bus at the Contractor's facility/location, to include configuration review of the Authority's first article, Buy America Audit.

   d. Contractor's presentation of a fully completed First Article bus at the manufacturer's location.

   e. Authority personnel perform the in-plant review of the First Article bus and, if in compliance with all the requirements, approval for shipment is provided to the Contractor.

   f. Contractor performs licensing and registration of the First Article bus prior to delivery to the Authority.

   g. Continued inspection at the final delivery location, any of the Authority facilities in Orange County, California, including forty (40) hours of uninterrupted revenue service testing.

   h. Completion of First Article testing and review after all discrepancies are corrected to Authority's satisfaction.

   i. Authority issues Notice to Proceed with the Production Run.

   j. Same above listed steps are followed with the Production Run.

2. PRE-PRODUCTION PHASE

   a. Authority personnel or its on-site inspector will conduct a review of Contractor's supplied documents for areas such as Buy America Pre-Award Compliance audit, Buy America Pre-Award Purchasers Requirements Certification, Buy America Pre-Award FMVSS Certification, DOT Safety requirements/specifications/regulations; and Quality Control/Quality Assurance procedures. Formal reports to the Authority in these areas are required.

   b. Authority personnel and its on-site inspector will be provided with all contract documentation with bus manufacturer prior to start of manufacture.

   c. Authority personnel and/or its on-site inspector will attend a pre-production audit meeting with the bus manufacturer. At this meeting, primary contact persons from the Authority, the bus manufacturer and In-Plant inspection representatives are expected to be present to finalize vehicle configuration decisions/documentation; and review manufacturing processes and schedule.

3. MANUFACTURING PHASE

   a. Authority personnel or its on-site inspectors will be on site at the manufacturer's location during all phases of manufacture, unless otherwise instructed by the Authority in writing.

   b. Authority personnel or its on-site inspectors will provide continuity of inspectors during each vehicle acquisition for the Authority.

   c. Authority or its on-site inspectors will ensure sufficient staffing on site based on the production schedules and quantity of buses to ensure expedited production. Inspection delays cannot be allowed to slow down the manufacturing process, except for documented quality problems.

   d. On-site inspectors will be available during all normal work hours of the manufacturer.

   e. On-site inspectors will work cooperatively with manufacturers and the Authority representatives. The expected result is a high-quality transit vehicle completed on schedule, and in conformance with federal, state & local specifications, with minimal changes in configuration during manufacture.

   f. Authority or its on-site inspectors will designate a project "Team Leader" (in the event more than one inspector is assigned to a project). This person will be the primary point of contact for the Authority staff, and will be the direct liaison with the manufacturer's personnel, and the only person delegated to make "stop work" or "stop ship" decisions on behalf of the Authority, based on

pre-agreed criteria. The Authority will similarly appoint a single point of contact.

g. The on-site inspector will provide daily and weekly summary reports by e-mail or facsimile to the designated Authority Project Manager. The written reports will include, at a minimum, the following items:

(1) Production progress during the period.
(2) Production schedule.
(3) Vehicle shipment status.
(4) Production line movement identified by stage and Authority vehicle numbers.
(5) Specific problems encountered during the period.
(6) Status of problems/issues reported during the previous reporting periods.
(7) Recommended solutions to problems/issues reported.
(8) Request for input from the Authority to make a decision or support the on-site inspector's position.
(9) General comments.

h. The on-site inspector will ensure that the manufacture of the vehicles is in a manner consistent with all 49 CFR Part 571 & California State regulations (Title 13 CCR and specifications; as well as Authority's specifications incorporating any approved changes).

i. The on-site inspector will meet with the Authority Project Manager at the end of production of the First Article, to conduct a configuration audit on the First Article bus. Once the configuration has been established, the on-site inspector will produce the required Buy America post-delivery audit documents prior to Authority's issuing of the Notice to Proceed to the Manufacturer.

j. The on-site inspector will inspect and certify that each bus complies with the Buy America content/requirement, and Authority's configuration requirements, as approved with the First Article.

k. The on-site inspector will maintain and distribute meeting minutes for any formal meeting (i.e., pre-production audit meeting) held with the manufacturer and/or the Authority.

l. Except for those differences among vehicles in a single order that might be required for in the specifications, the on-site inspector will ensure that all transit vehicles manufactured are identical and interchangeable within the same order. The on-site inspector will similarly ensure that vehicle manuals and other documentation are updated with any changes to match actual vehicle configuration.

m. During the production of the first buses, the production line will be thoroughly evaluated for its conformity to the agreements set forth during the initial audit process. This will include compliance to the quality assurance program, testing

requirements, documentation of certification testing, including but not limited to fastener testing, steel treatment, torque wrench calibration, welding testing (ultra sound and die penetrant testing), paint adhesion testing, paint thickness testing, electrical wiring and component ratings, etc.

n. All final operating tests will be checked during the final buy-off stage to help ensure that all of the appropriate testing has been completed. If the tests fail to meet the standard of the technical specifications, the on-site inspector will develop a list that will be forwarded to the manufacturer requesting adjustments in the process. The goal is to adjust the testing within the final stages of the first two to five buses.

o. As part of the final inspection phase, the on-site inspector will perform a road test, riding each bus and listening for abnormal power train noises, interior rattles, and observing for proper shift points, acceleration, braking performance, ride quality, and appropriate functioning of other bus systems.

p. Upon completion of manufacture of each unit, the on-site inspector will perform a full inspection test at the manufacturer's location prior to shipment to the Authority. Any defects noted will be made known to the manufacturer and tracked for correction prior to shipment to the Authority. Upon approval for shipment by the on-site inspector, the on-site inspector will transmit a copy of the inspection sheet to the Authority for each vehicle as quickly as practical to expedite final vehicle inspection at the Authority. On-site inspector will not allow the manufacturer to ship any vehicle that has not successfully passed this inspection, unless approved in writing by the Authority.

q. Specific emphasis will be placed on undercarriage, electrical installation, brakes, wheelchair lift, air conditioning, differential, and interior seating. It cannot be over-emphasized that the production line is a critical point for identification and documentation of non-compliant matters and to clarify and resolve noted discrepancies and issues to including but not limited to:

(1) QC production procedures.
(2) Weld integration (Zyglow, ultrasound test methods, etc.)
(3) Frame undercoating thickness.
(4) Sheet metal application, fit and finish, sidewall trueness as well as sheet metal quality.
(5) Paint adherence pull test and thickness tests.
(6) Paint Quality (orange peel, fisheye, sagging, and dirt)
(7) Detailed Inspection to include hydraulic lines, fuel lines and electrical harnesses.
(8) Electrical component ratings and proper grounding.
(9) Proper clamping, routing and spacing of air lines from making contact with other components.
(10) Proper clamping, routing and spacing of electrical wire harnesses from making contact with other components.
(11) Etc.

r. The on-site inspector will be responsible for providing at a minimum, the following (as applicable) with each individual bus record:

(1) Inspection Report verifying conformity to all specifications
(2) Wheel alignment
(3) Fire Suppression System Test
(4) Water test certification
(5) Front end alignment and steering stop adjustment certification
(6) "Completed Bus" inspection document
(7) Copy of defects and corrections noted during bus inspection
(8) VIN number (copy of bus data plate)
(9) Manufacturer inspection records
(10) Certificate of Origin
(11) Certified Weight slip (curb weight)
(12) On-Site Inspector's inspection documents
(13) Final factory bus inspection Report
(14) Road Test Function Report to Include:

a) Acceleration Test
b) Top Speed Test
c) Service Brake Test
d) Parking Brake Test
e) Turning Effort Test
f) Turning Radius Test
g) Shift Quality (if applicable)
h) Energy Recovery/Retarder Deceleration Test

(15) During the road test, one vehicle shall be taken to a weigh station to record the vehicle's front axle weight; rear axle weight and total vehicle (curb) weight.

(16) A list of major component serial numbers shall be documented for each bus; at a minimum the following components shall be listed:

a) Electric motor
b) HVAC Unit
c) AC Compressor
d) Drive Axle
e) Power Steering Unit
f) Air Compressor
g) Cooling System
h) High voltage components, inverters, coolers, chillers, coolant pumps, etc.
i) All other components that the manufacturer will require in order to process warranty claims.

s. The on-site inspector shall be responsible for providing at a minimum, the following (as applicable) with each separate bus build:

1. Pre-Award Purchasers Requirements certification, which certifies that the product meets the Authority's specifications and is being built within the requirements outlined in 49 CFR, Sections 663.27, 663.25 & 663.23.

2. Copy of the Pre-Award and Post-Delivery manufacturer's self-certification of compliance with the FMVSS stating that the bus manufactured meets the requirements of those standards (49 CFR, Sec. 663.41).

3. Post-Delivery Audit. The on-site inspector will certify that each bus was built to the specified FTA requirements/specifications and Authority configuration in accordance with 49 CFR, Sections, 663.33, 663.35, 663.37 & 663.39.

t. The on-site inspector is not responsible for final bus acceptance. This task will be performed by Authority personnel.

4. POST-PRODUCTION ACTIVITIES

a. The on-site inspector will provide final written documentation to the Authority summarizing the production processes and issues supplemented for each bus; and copies of the inspection write-ups of each vehicle inspected.

b. In addition to the bus production documents, and Road Test Sheets, all memoranda and QA correspondence will be stored and chronologically organized and provided in the final production report.

5. VEHICLE INSPECTION PHASE AT AUTHORITY

a. Upon delivery of the bus to the Authority's facilities, Authority personnel shall perform a complete delivery/vehicle inspection/verification to include, among others, recording of all vehicle serialized components, e.g., VIN number, electrical motor serial number, axles, etc.

b. Visual checks to include, among others, all exterior lights, body finish, paint, decals, installation of bike rack, operation of all interior and exterior access panels and doors, latches, condition of tires, etc.

c. Mechanical checks to include verification of lug nuts torque, belt tensions, lubrication of chassis, lubrication of driveshaft, lubrication of components, re-torqueing of components, testing of fire suppression, drain and replace fluids and consumables (if applicable), check of drivetrain and electric motor mounts, etc.

d. Operational checks to include, among others, seat belts, steering column, horn, sun visors, mirrors, windows, parking brake, wiper blades, ventilation system, transmission shifting quality, air conditioning, parking brake, fluid

and fuel leaks, plumbing, radio system, on board video surveillance system, passenger counters, voice announcement, destination signs, sun visors, driver's controls, passenger circulation, lights, switches, knobs, emergency releases, etc.

e. Drivability tests to include, among others, at a minimum, 40-hours of continuous uninterrupted service testing to evaluate performance, driving ability, steering response, cooling system's performance, vehicle speed, system's operation and interaction, acceleration, engine compartment temperature, braking distances, etc.

f. Dimensional and performance tests to include complete electrical system audit including Arc Flash rating on high-voltage components, dimensional requirements audit, seating capacity, water test, water runoff test, function test of systems and subsystems and components, sound/noise level tests, airflow test, PA function, silent alarm, interior lighting, exterior lighting, gradability test, kneeling, HVAC pull-down test, wheelchair ramp, axle weight, electrical drivetrain performance test among others.

g. Additional tests and/or verifications maybe included based on the outcome of previously listed tests, inspections and checks.

h. If any discrepancies are noted, the bus shall be rejected, and the list of discrepancies shall be provided to the bus manufacturer. The bus manufacturer shall be responsible for removing the bus from the Authority property, performing the corrections and repairs to the highlighted deficiencies and redelivering the bus to Authority for a secondary vehicle inspection.

i. Upon receipt of the re-delivered bus, the Authority shall perform a new bus inspection to verify that all items are individually, and/or as a system, in working order to include all items provided in the discrepancy list. If existing or additional discrepancies are noted, the bus shall be rejected, and the bus manufacturer will be required to remove the bus from Authority's property to perform the necessary repairs. Upon completion of the manufacturer's repairs, the bus will be re-delivered to Authority for a follow up inspection and at that point, if all repairs were performed to the Authority's satisfaction, the bus shall be released for revenue service and Authority personnel will start the necessary paperwork to add the bus to the revenue fleet and will complete the internal paperwork e.g., forms, approvals, signature of invoices, etc. If the bus is rejected, the bus manufacturer shall be required to remove the bus from Authority property and to continue the repairs until completion of a satisfactory and fully functional bus.

WARRANTY TABLE

Complete Excel Spreadsheet, included as a separate attachment, and submit electronically as part of the bid submittal. All line items on the spreadsheet shall be acknowledged; if Bidder does not provide a particular warranty, Bidder shall indicate “No Warranty” on the spreadsheet next.

WARRANTY TABLE

Componet/System	Years	Miles
Complete Bus		
The complete bus, propulsion system, components, major subsystems, and body and chassis structure.		
Body Chassis Structure		
The body, body structure, bolted and non-bolted components, frames, skeletal, cages, enclosures, structural elements of the suspension, such as the primary load carrying members of the bus structure, shall be warranted from corrosion, failure and/or fatigue, for the service life of the bus.		
Other systems		
Propulsion System		
HV Battery Pack		
LV batteries		
AC to DC Converter		
Heating Ventilation and Air Conditioning (HVAC)		
Drive Motor		
Electric heater		
Electric coolant systems (for batteries, inverters etc.)		
Electric Air Compressor and air system components		
Drive and Non-Drive Axles		
Multiplex System		
Electric Power Steering motor		
Power steering gearbox/pump		
Headlights		
All interior LED lights		
All exterior LED lights		
Battery charging receptacle		
Air Dryer		
Lift/Ramp		
Flooring		
Brake System		
Electronic Destination Signs		
Vapor Door Systems and door sensors		
Operator seat		
Passenger Seats: Frames and Mounting		
Passenger Seats: Fabric and Cushions		
Wipers and Wiper System		
Windows, Window frames and anti-graffiti film		
Kidde Fire systems		
March Networks OBVSS		
Conduent / Communication / Voice		
Mobile Router		
Covert Microphone		
Fleetwatch		
Access doors, Modesty panels, walls		
Roof hatch		
Bicycle Rack		
Decals		
Paint		
APC (Automatic Passenger counter)		
ADA Equipment: W/C seating stations, tie-downs, stop request		
Farebox (if provided)		
Driver's Barrier (if provided)		
Extended Warranty on ESS Battery Pack for 200 plus mile configuration		
Extended Warranty on ESS for 200 plus mile configuration		
Extended Warranty for Propulsion System for a total of 12 yrs/500K miles		

QUOTATION FORM

REQUEST FOR QUOTES NUMBER: **0-2165**

DESCRIPTION: State of California, DGS Zero-Emission 40-foot Low Floor Battery Powered Buses

BIDDER'S NAME AND ADDRESS _____

_____

_____

_____

NAME OF AUTHORIZED REPRESENTATIVE _____

TELEPHONE NUMBER _____

FAX NUMBER _____

EMAIL ADDRESS _____

I acknowledge receipt of RFQ and Addenda Numbers: _____

AUTHORIZED SIGNATURE TO BIND QUOTE: _____

PRINT SIGNATOR'S NAME AND TITLE: _____

_____

DATE SIGNED: _____

BLANKET PURCHASE ORDER

For the Authority's requirements as specified in Exhibit A, entitled "Scope of Work" and Exhibit E entitled "Price Summary Sheet" for up to 10, 40-foot battery powered low-floor buses. Price quotes are firm for the life of the blanket purchase order.

Contractor agrees to the terms and conditions stated in the State of California, Department of General Services contract. In signing this form, Contractor acknowledges receipt of Exhibit F, entitled "Insurance Requirements" and Exhibit G, entitled "General Provisions" which by this reference is incorporated herein.

Deliveries will be made to 4301 West MacArthur Boulevard, Santa Ana, California 92704.

Enter onto the spreadsheet, pricing for each line item described in the Scope of Work, based on State of California, Department of General Services pricing and the Authority's specifications. Prices shall include direct costs, indirect costs, and profits. The Authority's intention is to award a firm-fixed price contract.

Pricing shall remain firm for 180 days from the quotation submittal date.

PRICE SUMMARY SHEET

Complete Excel Spreadsheet, included as a separate attachment, and submit electronically as part of the bid submittal. All line items on the spreadsheet shall be acknowledged; if Bidder is not bidding on one or more line items, Bidder shall indicate “No Bid” or “Not Applicable” on the spreadsheet next to that particular item.

PRICE SUMMARY SHEET - 10 BATTERY ELECTRIC BUSES

Item No.	PRICE SUMMARY SHEET - UP TO TEN (10) BATTERY POWERED BUSES	Unit Price	Qty.	Extended	Notes / Clarifications
1	Low Floor 40' Battery Electric Bus (minimum 200 mile range)		10		
2	Exterior Identity Package **(See OCTA Scope of Work Exhibit A, Attachment No. 1)**		10		
3	Passenger Seating (USSC or American Seating) with replaceable cloth padded inserts **(See OCTA Scope of Work Exhibit A)**		10		
4	2-Sided Polished Aluminum Alcoa Dura-Flange Wheels		10		
5	Bridgestone Tires		10		
6	Driver and Passenger Windows flush mounted, 6 mm tempered glass, window glazing, grey 44% light transmittance		10		
7	Detailed, scaled drawings with dimensions, including all views (front, rear, top and both sides) in electronic AutoCAD and Adobe Illustrator format.		1		
8	Kidde Fire Detection and Suppression System **(See OCTA Scope of Work Exhibit A, Attachment No.2)**		10		
9	March Networks On Board Video Surveillance System (OBVSS) **(See OCTA Scope of Work Exhibit A)**		10		
10	Conduent/ITMS Radio (IVU-4000) Provisions including AVL/Announcement and Automatic Passenger Counter (APC) with Infrared Motion Analyzer (IRMA), interior sign and annunciation, public address system & silent alarm. **(See OCTA Scope of Work Exhibit A)**		10		
11	Cradlepoint, or Approved Equal, Router, Model Number IBR1700 modular modem MC400-1200M, Plus 5 Year Advance Licensing (Cloud service), Alert Service & Technical Support for 5 years.		10		
12	Covert Microphone for PA System (Clever Devices)		10		
13	Fleetwatch Fluid Management System		10		
14	Modesty panels - Stainless steel lower with transparent Melamine upper sections. **(See OCTA Scope of Work Exhibit A)**		10		
15	Farebox - Prewire and mounting platform provisions **(See OCTA Scope of Work Exhibit A)**		10		
16	Rear mounted wheelchair ramp		10		
17	Operators Seat - USSC Q90 seat or approved equal		10		
18	ADA/Accessibility Equipment Includes (2) Q-Pods and all Needed Equipment **(See OCTA Scope of Work Exhibit A)**		10		
19	Electronic Parking Brake Switch		10		
20	Front Mounted Battery Charging receptacle **(See OCTA Scope of Work Exhibit A)**		10		
21	Curbside cornering lights (2) **(See OCTA Scope of Work Exhibit A)**		10		
22	Reverse motion and rear door camera display **(See OCTA Scope of Work Exhibit A**		10		
23	Vapor Door Control equipped with RAISE and KNEEL		10		
24	Teleflex or approved equal adjustable pedals		10		
25	License Plate Provisions		10		
26	Passenger Hand Straps Equal to Number of Standees		10		
27	Vapor CLASS Ultra contact-less acoustic door sensor system & Sensitive Door Edges - Both Doors (Front/Rear) **(See OCTA Scope of Work Exhibit A)**		10		
28	Interior Passenger Windows equipped with 3M anti-graffiti film		10		
29	Jack Stand Interface Pads **(See OCTA Scope of Work Exhibit A)**		10		
30	Operator Storage Box **(See OCTA Scope of Work Exhibit A)**		10		
31	Remote Exterior Door Switch		10		
32	Storage Box on Curbside Wheelwell for Fire Extinguisher and Safety Triangles		10		
33	Byk Rak Bike Rack - (3-Position)		10		
34	Electronic Signs - Luminator (Standard 16x160) (Front/Side)		10		
35	Operator Training Hours (56 hrs.)		56		
36	BEB Technician Training (304 hrs.)		304		
37	Manuals (1 Package of 3 Sets- Service/Preventive Maint./Parts/Operator)		1		
38	Warranty Labor Reimbursal Rate (per hour)		10		
39	Delivery to Santa Ana, California		10		
	Summary Price Calculation:				
	Base Vehicle Price				
	ADA Equipment - Non Taxable				
	Options Total Includes all of OCTA requirements				
	Document Prep Fee				
	Vehicle Sub-Total				
	Sales Tax				
	California Tire Fee				
	Vehicle Total – (Each) Delivered				
	Grand Total – (10) Buses				

Item No.	OPTIONAL ITEM PRICE SUMMARY SHEET (See OCTA Scope of Work in Exhibit A under Optional Items)	Unit Price	Qty.	Extended	Notes / Clarifications
1	Rear Impact Prevention Provisions		10		
2	Driver Protection System (Driver's Barrier)		10		
3	One 12 Inch & One 15 Inch Safety Awareness Monitor/Displays		10		
4	Tire Pressure Monitoring System		10		
5	Recommended List of Spare Components		1		
6	Diagnostic Tools and Repair Equipment		1		
7	Additional Training Hours		96		
8	Extended Warranty on ESS Battery Pack for 200 plus mile configuration		10		
9	Extended Warranty on ESS for 200 plus mile configuration		10		
10	Extended Warranty for Propulsion System for a total of 12 yrs/500K miles		10		

Note: Authority does not guarantee that the Optional Items listed above will be purchased with each unit. The Authority reserves the right to increase or decrease option quantities as needed.

Bidder Name: _____

INSURANCE REQUIREMENTS

The Authority recognizes that the Contractor may be a dealer whose role is warranty and service of the vehicles. In such cases, the Contractor shall maintain in effect during the term of this Contract, including any warranty period, at its own expense, at least the following coverage and limits of insurance:

- Statutory Workers' Compensation and Employers Liability insurance covering Supplier's employees while on Authority property.
- Commercial General Liability Insurance:
  - Bodily Injury and Property Damage, including Contractual Liability covering the indemnification contained herein, $1,000,000 combined single limits per occurrence, $5,000,000 aggregate, where applicable.
  - Product liability: $1,000,000 per occurrence, for a period of five (5) years after acceptance of the last bus delivered under this Contract (Products Liability coverage may be effected through one or more excess liability policies).
- Automobile Liability Insurance: Bodily Injury and Property Damage, $1,000,000 combined single limits per occurrence.

In addition, the vehicle manufacturer whose role is to provide the vehicle shall maintain in effect during the term of this Contract, including any warranty period, at its own expense, at least the following coverage and limits of insurance:

- Commercial General Liability Insurance:

  - Bodily Injury and Property Damage, including Contractual Liability covering the indemnification contained herein, $1,000,000 combined single limits per occurrence, $5,000,000 aggregate, where applicable.
  - Product liability: $1,000,000 per occurrence, for a period of five (5) years after acceptance of the last bus delivered under this Contract (Products Liability coverage may be effected through one or more excess liability policies).

Proof of such coverage, in the form of a certificate of insurance with the Authority, its officers, directors, employees and agents, designated as additional insureds as required by contract, shall be received by the Authority prior to commencement of any work. Proof of insurance coverage shall be received by the Authority within ten (10) calendar days from the effective date of the Agreement. Such insurance shall be primary and non-contributive to any insurance or self-insurance maintained by Authority. Furthermore, Authority reserves the right to request certified copies of all related insurance policies.

Contractor shall include on the face of the Certificate of Insurance the Agreement Number C91570; and, the Principal Contract Administrator's Name, Masih Bahadori.

Contractor shall also include in each subcontract the stipulation that subcontractors shall maintain insurance coverage in the amounts required from Contractor as provided in the Agreement.

GENERAL PROVISIONS

1. INSPECTION AND ACCEPTANCE - All items are subject to final inspection and acceptance by AUTHORITY at destination notwithstanding any payment or prior inspection at SELLER'S facilities. Final inspection will be made within a reasonable time after receipt of items hereunder.

2. CHANGES - By written notice or order. AUTHORITY may, from time to time, order work suspension or make changes in quantities, drawings, designs, specifications, place of delivery or delivery schedules, methods of shipment and packaging, and property and services furnished by A. If any such change causes an increase or decrease in the price of this agreement or in the time required for its performance. SELLER OR AUTHORITY shall promptly notify the other party thereof and assert its claim for adjustment within (30) days after the change is ordered, and an equitable adjustment shall be made. However, nothing in this clause shall excuse SELLER from proceeding immediately with the agreement as changed.

3. DEFAULT AND EXCESS REPROCUREMENT LIABILITY - AUTHORITY may terminate this agreement if a federal or state proceeding for the relief of debtors is undertaken by or against Seller, or if SELLER makes an assignment for the benefit of creditors, or if SELLER fails after reasonable notice by AUTHORITY to cure a deficiency in performance or lack of progress thereto, and AUTHORITY shall have, such additional remedies as may be available whether or not it so terminates this agreement, including but not limited to the payment by SELLER to AUTHORITY of expenses incurred by AUTHORITY in reprocuring elsewhere the same or similar items or services defaulted by SELLER hereunder provided such Seller's reprocurement expenses obligation shall be limited to the excess over the price specified herein for such items or services.

4. INDEMNIFICATION - SELLER shall indemnify, defend, and hold harmless AUTHORITY from and against any loss, damage, claim, or harm for bodily injuries, including death or damage to property caused by SELLER or its employees, subcontractors, or supplies in connection with the performance of this agreement.

5. ASSIGNMENTS AND SUBCONTRACTORS - Neither this agreement nor any interest herein nor claim hereunder may be assigned by SELLER either voluntarily or by operation of law, nor may all or substantially all of this agreement be further subcontracted by SELLER without the prior written consent of AUTHORITY. No consent shall not be deemed to relieve SELLER of its obligations to comply fully with the requirements hereof.

6. FEDERAL, STATE, AND LOCAL LAWS - SELLER warrants that in the performance of this agreement is shall comply with all applicable Federal, State and local laws and ordinances and all lawful orders, rules and regulations thereunder.

7. INFRINGEMENT INDEMNITY - In lieu of any other warranty by AUTHORITY or SELLER against infringement statutory, or otherwise, it is agreed that SELLER shall defend at its expense and suit against AUTHORITY based on a claim that any item furnished under this agreement or the normal use or sale thereof infringes any United States Letters Patent or copyright and shall pay cost and damages finally awarded in any such suit, provided that SELLER is notified in writing of the suit and given authority, information, assistance at SELLER'S expense for the defense of same. If the use or sale of said item is enjoined as a result of such suit, SELLER, at no expense to AUTHORITY, shall obtain for AUTHORITY the right to use and sell said item, or shall substitute an equivalent item acceptable to AUTHORITY and extend this patent indemnity hereto.

8. TITLE AND RISK OF LOSS - Unless otherwise provided in this agreement, SELLER shall have title to and bear the risk of any loss of or damage to the items purchased hereunder until they are delivered in conformity with this agreement at the F.O.B. point specified herein, and upon such delivery title shall pass from SELLER and SELLER'S responsibility for loss or damage shall cease, except for loss or damage resulting from SELLER'S negligence. Passing of title upon such delivery shall not constitute acceptance of the item by AUTHORITY.

9. NOTICE OF LABOR DISPUTE - Whenever SELLER has knowledge that any actual or potential labor dispute may delay this agreement, SELLER shall immediately notify and submit all relevant information to AUTHORITY. SELLER shall insert the substance of this entire clause in any subcontract hereunder as to which a labor dispute may delay this agreement. However, any subcontractor need give notice and information only to its next higher-tier subcontractor.

10. EQUAL EMPLOYMENT OPPORTUNITY - In connection with the execution of this agreement, the SELLER shall not discriminate against any employee or applicant because of race, religion, color, sex or national origin. The SELLER shall take affirmative action to ensure that applicants are employed, and that employees are treated during their employment without regard to their race, religion, color, sex or national origin. Such actions shall include pay, or other forms of compensation and selection for training, including apprenticeship.

11. DISADVANTAGE BUSINESS ENTERPRISE - In connection with the performance of this agreement, the SELLER will cooperate with the AUTHORITY in meeting its commitments and goals with regard to the maximum utilization of Disadvantaged business enterprises, and seller will use its best efforts to ensure that disadvantaged business enterprises shall have an equitable opportunity to compete for subcontract work under this agreement.

12. PROHIBITED INTEREST - A. SELLER covenants that no member of, or delegate to, the Congress of the Unites States shall have any interest, direct or indirect, in the agreement or the proceeds hereof.

    B. SELLER further covenants that, for the term of this agreement, no director, member, officer, or employee of the AUTHORITY during his tenure in office or one (1) year thereafter shall have any interest, direct or indirect, in this agreement or the proceeds thereof.

13. TERMINATION FOR CONVENIENCE - the Authority may terminate this agreement at any time by giving written notice to SELLER of such termination, effective on the date of such notice. Upon receipt of said notice, SELLER shall immediately take action not to incur any further obligations, costs, or expenses, except as may be reasonably necessary to terminate its activities. All finished or unfinished documents and other materials procured or produced by SELLER hereunder shall, at the option of AUTHORITY, become AUTHORITY property upon the date of such termination.

14. AUDIT AND INSPECTION OF RECORDS - SELLER shall provide AUTHORITY such access to SELLER'S books, records, and facilities as may be deemed necessary to examine, audit, and inspect all work data, documents, and activities related to the goods or services described herein. SELLER shall maintain such books, records, data and documents on a generally accepted accounting basis and shall clearly identify and make such items readily accessible to such parties during SELLER'S performance hereunder and for a period of four (4) years from the date of final payment by AUTHORITY hereunder.

REQUIRED FEDERAL CLAUSES

DEFINITIONS

The Orange County Transportation Authority, (hereinafter referred to as "AUTHORITY").
_____, (hereinafter referred to as "CONTRACTOR").

ARTICLE 1. FEDERAL CHANGES

CONTRACTOR shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the agreement between the AUTHORITY and FTA, as they may be amended or promulgated from time to time during this Agreement. CONTRACTOR's failure to comply shall constitute a material breach of contract.

ARTICLE 2. NO FEDERAL GOVERNMENT OBLIGATION TO THIRD PARTIES

AUTHORITY and CONTRACTOR acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying Agreement, absent the express written consent by the Federal Government, the Federal Government is not a party to this Agreement and shall not be subject to any obligations or liabilities to the AUTHORITY, CONTRACTOR, or any other party (whether or not a party to this Agreement) pertaining to any matter resulting from the underlying Agreement. CONTRACTOR agrees to include these requirements in all of its subcontracts.

ARTICLE 3. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTS

A. CONTRACTOR acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. §§3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this project. Accordingly, by signing this Agreement, CONTRACTOR certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying Agreement of the FTA assisted project for which this Agreement's work is being performed. CONTRACTOR also 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 penalties of the Program Fraud Civil Remedies Act of 1986 on CONTRACTOR to the extent the Federal Government deems appropriate.

B. CONTRACTOR also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under an agreement connected with a project that is financed in whole or part with Federal assistance awarded by FTA under the authority of 49 U.S.C. §5307 et seq., the Government reserves the right to impose the penalties of 18 U.S.C. §1001 and 49 U.S.C. §5307(n) (1) et seq. on CONTRACTOR, to the extent the Federal Government deems appropriate. CONTRACTOR agrees to include this requirement in all of its subcontracts.

ARTICLE 4. CIVIL RIGHTS ASSURANCE

During the performance of this Agreement, CONTRACTOR, for itself, its assignees and successors in interest agree as follows:

A. Compliance with Regulations: CONTRACTOR shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this Agreement.

B. Nondiscrimination: CONTRACTOR, with regard to the work performed by it during the Agreement, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. CONTRACTOR shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the Agreement covers a program set forth in Appendix B of the Regulations.

C. Solicitations for Subcontracts, Including Procurement of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by CONTRACTOR for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by CONTRACTOR of CONTRACTOR's obligations under this Agreement and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

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

E. Sanctions for Noncompliance: In the event of CONTRACTOR's noncompliance with nondiscrimination provisions of this Agreement, the AUTHORITY shall impose Agreement sanctions as it may determine to be appropriate, including, but not limited to:

1. Withholding of payments to CONTRACTOR under the Agreement until CONTRACTOR complies; and/or
2. Cancellation, termination, or suspension of the Agreement, in whole or in part.

F. Title VI of the Civil Rights Act. In determining the types of property or services to acquire, no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity receiving Federal financial assistance in violation of Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. Sections 2000d *et seq*. and DOT regulations, "Nondiscrimination in Federally Assisted Programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964," 49 CFR Part 21. In addition, FTA Circular 4702.1, "Title VI and Title VI-Dependent Guidelines for FTA Recipients," 05-13-07, provides FTA guidance and instructions for implementing DOT's Title VI regulations.

G. The Americans with Disabilities Act of 1990, as amended (ADA), 42 U.S.C. Sections 12101 *et seq*., prohibits discrimination against qualified individuals with disabilities in all programs, activities, and services of public entities, as well as imposes specific requirements on public and private providers of transportation.

H. Incorporation of Provisions: CONTRACTOR shall include the provisions of paragraphs (A) through (H) in every subcontract, including procurements of materials and leases of equipment,

unless exempt by the Regulations, or directives issued pursuant thereto. CONTRACTOR shall take such action with respect to any subcontract or procurement as the AUTHORITY may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a CONTRACTOR becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, CONTRACTOR may request the AUTHORITY to enter into such litigation to protect the interests of the AUTHORITY, and, in addition, CONTRACTOR may request the United States to enter into such litigation to protect the interests of the United States.

ARTICLE 5. DISADVANTAGED BUSINESS ENTERPRISE (DBE)

This Contract is subject to the requirements of Title 49, Code of Federal Regulations, Part 26, Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs.

CONTRACTOR shall maintain compliance with “DBE Approval Certification” throughout the period of Contract performance.

CONTRACTOR shall not discriminate on the basis of race, color, national origin or sex in the performance of this Contract. CONTRACTOR shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of this DOT-assisted Contract. Failure by CONTRACTOR to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy as the Agency deems appropriate. Each subcontract CONTRACTOR signs with a Subcontractor must include the assurance in this paragraph (see 49 CFR 26.13(b)).

ARTICLE 6. ACCESS TO RECORDS AND REPORTS

CONTRACTOR shall provide AUTHORITY, the U.S. Department of Transportation (DOT), the Comptroller General of the United States, or other agents of AUTHORITY, such access to CONTRACTOR's accounting books, records, payroll documents and facilities of CONTRACTOR which are directly pertinent to this Agreement for the purposes of examining, auditing and inspecting all accounting books, records, work data, documents and activities related hereto. CONTRACTOR shall maintain such books, records; data and documents in accordance with generally accepted accounting principles and shall clearly identify and make such items readily accessible to such parties during CONTRACTOR's performance hereunder and for a period of four (4) years from the date of final payment by AUTHORITY. AUTHORITY’s right to audit books and records directly related to this AgreCLEANement shall also extend to all first-tier subcontractors identified in this Agreement. CONTRACTOR shall permit any of the foregoing parties to reproduce documents by any means whatsoever or to copy excerpts and transcriptions as reasonably necessary.

ARTICLE 7. INCORPORATION OF FTA TERMS

All contractual provisions required by Department of Transportation (DOT), whether or not expressly set forth in this document, as set forth in Federal Transit Administration (FTA) Circular 4220.1F, as amended, 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. CONTRACTOR shall not perform any act, fail to perform any act, or refuse to comply with any requests, which would cause AUTHORITY to be in violation of the FTA terms and conditions.

ARTICLE 8. ENERGY CONSERVATION REQUIREMENTS

CONTRACTOR shall 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 Conservation Act.

ARTICLE 9. FLY AMERICA REQUIREMENTS

CONTRACTOR agrees to comply with 49 U.S.C. 40118 (the "Fly America" Act) in accordance with the General Services Administration's regulations at 41 CFR Part 301-10, which provide that recipients and sub-recipient of Federal funds and their contractors are required to use U.S. Flag air carriers for U.S. Government-financed international air travel and transportation of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of necessity, as defined by the Fly America Act. CONTRACTOR shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S. flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements. CONTRACTOR agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

ARTICLE 10. PROHIBITED INTERESTS

A. CONTRACTOR covenants that, for the term of this Agreement, no director, member, officer or employee of AUTHORITY during his/her tenure in office or for one (1) year thereafter, shall have any interest, direct or indirect, in this Agreement or the proceeds thereof.

B. No member of or delegate to, the Congress of the United States shall have any interest, direct or indirect, in this Agreement or to the benefits thereof.

ARTICLE 11. PRIVACY ACT

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

ARTICLE 12. CONFLICT OF INTEREST

CONTRACTOR agrees to avoid organizational conflicts of interest. An organizational conflict of interest means that due to other activities, relationships or contracts, CONTRACTOR is unable, or potentially unable to render impartial assistance or advice to the Authority; CONTRACTOR's objectivity in performing the work identified in the Scope of Work is or might be otherwise impaired; or CONTRACTOR has an unfair competitive advantage. CONTRACTOR is obligated to fully disclose to the AUTHORITY in writing Conflict of Interest

issues as soon as they are known to CONTRACTOR. CONTRACTOR is obligated to fully disclose to the AUTHORITY in writing Conflict of Interest issues as soon as they are known to CONTRACTOR. All disclosures must be submitted in writing to AUTHORITY pursuant to the Notice provision herein. This disclosure requirement is for the entire term of this Agreement.

ARTICLE 13. CODE OF CONDUCT

CONTRACTOR agrees to comply with the AUTHORITY's Code of Conduct as it relates to Third Party contracts which is hereby referenced and by this reference is incorporated herein. CONTRACTOR agrees to include these requirements in all of its subcontracts.

ARTICLE 14. PROTEST PROCEDURES

The Authority has on file a set of written protest procedures applicable to this solicitation that may be obtained by contacting the Contract Administrator/Buyer responsible for this procurement. Any protest filed by CONTRACTOR in connection with this solicitation must be submitted in accordance with the Authority's written procedures.

ARTICLE 15. TERMINATION

A. AUTHORITY may terminate this Agreement for its convenience at any time, in whole or part, by giving CONTRACTOR written notice thereof. Upon termination, AUTHORITY shall pay CONTRACTOR its allowable costs incurred to date of that portion terminated. Said termination shall be construed in accordance with the provisions of CFR Title 48, Chapter 1, Part 49, of the Federal Acquisition Regulation (FAR) and specific subparts and other provisions thereof applicable to termination for convenience. If AUTHORITY sees fit to terminate this Agreement for convenience, said notice shall be given to CONTRACTOR in accordance with the provisions of the FAR referenced above. Upon receipt of said notification, CONTRACTOR agrees to comply with all applicable provisions of the FAR pertaining to termination for convenience.

B. AUTHORITY may terminate this Agreement for CONTRACTOR's default if a federal or state proceeding for the relief of debtors is undertaken by or against CONTRACTOR, or if CONTRACTOR makes an assignment for the benefit of creditors, or for cause if CONTRACTOR fails to perform in accordance with the scope of work or breaches any term(s) or violates any provision(s) of this Agreement and does not cure such breach or violation within ten (10) calendar days after written notice thereof by AUTHORITY. CONTRACTOR shall be liable for any and all reasonable costs incurred by AUTHORITY as a result of such default or breach including, but not limited to, reprocurement costs of the same or similar services defaulted by CONTRACTOR under this Agreement. Such termination shall comply with CFR Title 48, Chapter 1, Part 49, of the FAR.

ARTICLE 16. DEBARMENT & SUSPENSION:

CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS - PRIMARY PARTICIPANT AND LOWER-TIER PARTICIPANTS

Unless otherwise permitted by law, any person or firm that is debarred, suspended, or voluntarily excluded, as defined in the Federal Transit Administration (FTA) Circular 2015.1, dated April 28, 1989, may not take part in any federally funded transaction, either as a participant or a principal, during the period of debarment, suspension, or voluntary exclusion. Accordingly, the Authority, acting on behalf of the District, may not enter into any transaction with such debarred, suspended, or voluntarily excluded persons or firms during such period.

A certification process has been established by 49 CFR Part 29, as a means to ensure that debarred suspended or voluntarily excluded persons or firms do not participate in Federally assisted projects. The inability to provide the required certification will not necessarily result in denial of participation in a covered transaction. A person or firm that is unable to provide a positive certification as required by this solicitation must submit a complete explanation attached to the certification. FTA will consider the certification and any accompanying explanation in determining whether or not to provide assistance for the project. Failure to furnish a certification or an explanation may disqualify that person or firm from participating in the project.

ARTICLE 17. DISPUTES

A. Except as otherwise provided in this Agreement, any dispute concerning a question of fact arising under this Agreement which is not disposed of by supplemental agreement shall be decided by AUTHORITY's Director, Contracts Administration and Materials Management (CAMM), who shall reduce the decision to writing and mail or otherwise furnish a copy thereof to CONTRACTOR. The decision of the Director, CAMM, shall be final and conclusive.

B. The provisions of this Article shall not be pleaded in any suit involving a question of fact arising under this Agreement as limiting judicial review of any such decision to cases where fraud by such official or his representative or board is alleged, provided, however, that any such decision shall be final and conclusive unless the same is fraudulent or capricious or arbitrary or so grossly erroneous as necessarily to imply bad faith or is not supported by substantial evidence. In connection with any appeal proceeding under this Article, CONTRACTOR shall be afforded an opportunity to be heard and to offer evidence in support of its appeal.

C. Pending final decision of a dispute hereunder, CONTRACTOR shall proceed diligently with the performance of this Agreement and in accordance with the decision of AUTHORITY's Director, CAMM. This "Disputes" clause does not preclude consideration of questions of law in connection with decisions provided for above. Nothing in this Agreement, however, shall be construed as making final the decision of any AUTHORITY official or representative on a question of law, which questions shall be settled in accordance with the laws of the state of California.

ARTICLE 18. CLEAN WATER REQUIREMENTS

CONTRACTOR shall comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

CONTRACTOR shall report each violation to AUTHORITY and understands and agrees that the AUTHORITY who will in turn, report each violation as required to assure notification to FTA and appropriate EPA Regional Office. CONTRACTOR agrees to include this requirement in all of its subcontracts.

ARTICLE 19. CLEAN AIR

CONTRACTOR shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. CONTRACTOR shall report each violation to AUTHORITY, who will in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office. CONTRACTOR agrees to include this requirement in all of its subcontracts.

ARTCLE 20. LOBBYING

CONTRACTOR's who apply or bid for an award of $100,000 or more shall file the certification required by 49 CFR part 20, “New Restrictions on Lobbying”. Each tier certifies to the above that it will not or has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the recipient.

ARTCLE 21. PROMP PAYMENT TO SUBCONTRACTORS

Pursuant to 49 Code of Federal Regulations (CFR) Part 26, CONTRACTOR shall pay each Subcontractor under this Contract for satisfactory performance of its Contract no later than thirty days (30) days after receipt of each Progress Payment received from Agency. CONTRACTOR shall pay to each Subcontractor all amounts it has retained from payments under the Subcontract within thirty (30) days after the Subcontractor’s work is satisfactorily completed. Any delay of payment beyond the thirty (30) day time limit shall be only for good cause, and only upon the prior written approval of Agency.

ARTICLE 22. BUY AMERICA

CONTRACTOR agrees to comply with 49 USC 5323(j) and 49 CFR Part 661, which provide that federal funds may not be obligated unless steel, iron and manufactured products used in FTAfunded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 CFR 661.7. A general public interest waiver from the Buy America requirements applies to microprocessors, computers, microcomputers, software or other such devices, which are used solely for the purpose of processing or storing data. This general waiver does not extend to a product or device that merely contains a microprocessor or microcomputer and is not used solely for the purpose of processing or storing data.

Separate requirements for rolling stock are set out at 49 USC 5323(j)(2)(C) and 49 CFR 661.11. Rolling stock must be assembled in the United States and have a 60 percent domestic content.

A Bidder or Proposer must submit to the Agency the appropriate Buy America Certification with all offers on FTA-funded contracts, except those subject to a general waiver. Proposals that are not accompanied by a properly completed Buy America certification are subject to the provisions of 49 CFR 661.13 and may be rejected as nonresponsive.

ARTICLE 23. PRE-AWARD AND POST-DELIVERY AUDITS

CONTRACTOR agrees to comply with 49 USC § 5323(l) and FTA's implementing regulation at 49 CFR Part 663 and to submit the following certifications:

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

2. Solicitation specification requirements: CONTRACTOR shall submit evidence that it shall be capable of meeting the bid specifications.

3. Federal Motor Vehicle Safety Standards (FMVSS): CONTRACTOR shall submit (1) manufacturer's FMVSS self-certification, Federal Motor Vehicle Safety Standards, that the vehicle complies with relevant FMVSS or (2) manufacturer's certified statement that the contracted buses shall not be subject to FMVSS regulations.

BIDDER'S CERTIFICATE REGARDING "BUY AMERICA" REQUIREMENTS FOR PROCUREMENT OF BUSES, OTHER ROLLING STOCK AND ASSOCIATED EQUIPMENT

In order to demonstrate compliance with the Buy America Requirements, if the bid is for a contract greater than one hundred and fifty thousand dollars ($150,000), Bidder shall complete only one of the two statements below:

The _____
Firm name/principal

hereby certifies that it **will comply** with the requirements of 49 U.S.C. Section 5323(j), and the applicable regulations in 49 CFR Part 661.11.

_____
Signature

_____
Name

_____
Title

_____
Date

Or:

The _____
Firm name/principal

hereby certifies that it **cannot comply** with the requirements of 49 U.S.C. Section 5323(j), but may qualify for an exception to the requirement pursuant to 49 U.S.C. Section 5323(j)(2), as amended, and the applicable regulations in 49 CFR Part 661.7.

_____
Signature

_____
Name

_____
Title

_____
Date

Revised: 03/25/2020

Federal Motor Vehicle Safety Standards Certification

The Proposer and (if selected) Contractor shall submit (1) manufacturer's FMVSS self-certification sticker information that the vehicle complies with relevant FMVSS or (2) manufacturer's certified statement that the contracted buses will not be subject to FMVSS regulations.

_____ Company Name

_____ Signature of Proposer

_____ Name and Title of Proposer's Authorized Official

_____ Date

DBE Approval Certification

I hereby certify that the Proposer has complied with the requirements of 49 CFR 26, Participation by Disadvantaged Business Enterprises in DOT Programs, and that its goals have not been disapproved by the Federal Transit Administration.

Name and Title of the Proposer's authorized official:

_____ Company Name

_____ Signature of Proposer's Authorized Official

_____ Name and Title of Proposer's Authorized Official

_____ Date

CERTIFICATION OF CONSULTANT, COMMISSIONS & FEES

I HEREBY CERTIFY that I am the _____, and duly authorized representative of the firm of _____, whose address is _____, and that, except as hereby expressly stated, neither I nor the above firm that I represent have:

(a) employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any firm or person (other than a bona fide employee working solely for me or the above consultant) to solicit or secure this contract; nor

(b) agreed, as an express or implied condition for obtaining this contract, to employ or retain the services of any firm or person in connection with carrying out the contract; nor

(c) paid, or agreed to pay, to any firm, organization or person (other than a bona fide employee working solely for me or the above consultant) any fee, contribution, donation, or consideration of any kind, for or in connection with, procuring or carrying out this contract.

I acknowledge that this Certificate is to be made available to the California Department of Transportation (Caltrans) in connection with this contract involving participation of federal-aid highway funds, and is subject to applicable state and federal laws, both criminal and civil.

_____ _____

(Date) (Signature)

Certificate of Compliance with Bus Testing Requirement

The undersigned certifies that the vehicle offered in this procurement complies and will, when delivered, comply with 49 USC § 5323(c) and FTA's implementing regulation at 49 CFR Part 665 according to the indicated one of the following three alternatives.

Mark one and only one of the three blank spaces with an "X."

1. _____ The buses offered herewith have been tested in accordance with 49 CFR Part 665 on _____ (date). If multiple buses are being proposed, provide additional bus testing information below or on attached sheet. The vehicles being sold should have the identical configuration and major components as the vehicle in the test report, which must be submitted with this Proposal. If the configuration or components are not identical, then the manufacturer shall provide with its Proposal a description of the change and the manufacturer's basis for concluding that it is not a major change requiring additional testing. If multiple buses are being proposed, testing data on additional buses shall be listed on the bottom of this page.

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

3. _____ The vehicle is a new model and will be tested and the results will be submitted to the Agency prior to acceptance of the first bus.

The undersigned understands that misrepresenting the testing status of a vehicle acquired with federal financial assistance may subject the undersigned to civil penalties as outlined in the Department of Transportation's regulation on Program Fraud Civil Remedies, 49 CFR Part 31. In addition, the undersigned understands that FTA may suspend or debar a manufacturer under the procedures in 49 CFR Part 29.

_____ Company Name

_____ Signature of Offeror

_____ Name and Title of Offeror's Authorized Official

_____ Date

CONTRACTOR SERVICE AND PARTS SUPPORT DATA

Location of nearest Technical Service Representative to Authority

Name _____

Address _____

Telephone _____

Offeror to describe technical services readily available from said representative.

Location of nearest Parts Distribution Center to Authority

Name _____

Address _____

Telephone _____

Offeror shall describe the extent of parts available at said center.

Policy for Delivery of Parts and Components to be Purchased for Service and Maintenance

Regular Method of Shipment _____

Cost to Authority _____

NON-COLLUSION AFFIDAVIT

To the Orange County Transportation Authority:

In accordance with Title 23 United States Code Section 112 and Public Contract Code 7106 the Offeror declares that the proposal is not made in the interest of, or on the behalf of, any undisclosed person, partnership, company, association, organization or corporation; that the proposal is genuine and not collusive or sham; that the Offeror has not directly or indirectly induced or solicited any other Offeror to put in a false or sham proposal, or that anyone shall refrain from proposing; that the Offeror has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the price of the Offeror or any other Offeror, or to fix any overhead, profit, or cost element of the price, or of that of any Offeror, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the proposal are true; and, further, that the Offeror has not, directly, or indirectly, submitted his or her price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham proposal.

Name of Offeror:_____

Signature: _____

Date:_____

REQUEST FOR PRE-OFFER CHANGE OR APPROVED EQUAL

This form must be used for requested clarifications, changes, substitutes or approval of items equal to items specified with a brand name and must be submitted in advance of the due date specified in “Submitting Requests” (Section I.F.2.)

Request #: _____

Proposer:

_____

Contact Information:

_____

_____

_____

Page _____, Section _____

Questions, Clarifications or Approved Equals: