GREATER HARTFORD TRANSIT DISTRICT
GHTD RFP #07-020
JOINT PROCUREMENT PRATRANSIT VEHICLES

ADDENDUM #2
June 11, 2020

The Request for Proposal (RFP) is modified/clarified as set forth in this Addendum. The original RFP Documents remain in full force and effect, except as modified/clarified by this Addendum, which is hereby made part of the RFP. Respondent shall take this Addendum into consideration when preparing and submitting its proposal.

A Pre-Proposal Conference was held on **Tuesday, May 26, 2020 at 10:00 AM EST Time via GoToMeeting** for the purpose of outlining the requirements and service standards of the RFP as well as to provide the opportunity for questions. The following individuals were in attendance: Paul Hubbard (Shepard Brothers); Mark Husted (Champion Bus); Evan Kushner (Don Brown Bus Sales); TJ Shepard (Shepard Brothers); Judy Walcott (Dattco); Mary Deppe (GHTD); LaShaunda Drake (GHTD); and DJ Gonzalez (GHTD).

Proposal Due Date Extension: Proposals are due on or before 2:30pm EST., Wednesday, July 1, 2020 at the District offices located at One Union Place, Hartford, CT. All questions and requests for clarification regarding GHTD RFP #07-020 must be submitted in writing to LaShaunda Drake at or before noon, Friday, June 5, 2020.

The following specifications have been clarified as such:

Exhibit J: Cutaway Specifications
Stanchion and Guard Rails:

Page 14-15, #7.
Entrance grab rails shall be positioned on right and left sides of the door such that passengers shall have support while boarding or disembarking the vehicle. The right and left side (while entering the vehicle) grab rails shall be parallel to the steps and extend to the bottom steps. The right side grab rail shall be vertical, spread above and below the door rod, and shall be total minimum eighteen (18) inches high. The grabs rail shall provide support for passengers from the ground level through the boarding process to the vestibule.

Page 15, #8.
Protective barriers shall be provided between the lift and the passengers seating immediately behind or in front of the lift. This shall be accomplished by providing a stanchion, a guardrail, and a Plexiglas panel provided above the guardrail. A padded panel shall be provided below the guardrail. The installation of a grab rail at least a 1/4’ under the window on each the side of the vehicle, extending 18’ between the seats and the lift. The design shall ensure the safety of all passengers from any potential injury caused by exposure of the body parts to the lift.

Page 29, #3. (11th bullet)
Current Spec: The DVR must be able to detect and report video loss from any of the 6 cameras.
Replace With: The District's selected video surveillance system will have a total of 5 cameras, not 6.

The following requests for clarification were submitted in writing:

1.) Question: Sample floor plans and descriptions for seating capacity shown on page 4 under 2.0 equipment do not match. Please clarify for each bus type, do you want front or rear lift? How many seats (foldaway and fixed) and how many wheelchair securements are required for each bus type? Just as an example, on the A type, the chart on page 4 shows the bus as an 8 + 2 or a 7+ 2 depending on front or rear lift but the floor plan on page 17 shows seating for 12 passengers and securements for 4 wheelchairs. Please clarify what is desired for each floor plan.

Answer: See below:

- Front Lift only
- Foldaway seats (12 Pass 6 seats)(Cutaway)
- 4 wheel chair securements per wheel chair
- Ford Transit Floor Plan – 8 Pass / 2 Wheel Chairs
- Cutaway Floor Plan – 12 Pass / 4 Wheel Chairs

2.) Question: Body dimensions are given for type B and C buses but not type A. Can you provide requested dimensions for type A buses?

Answer: See below:

1. Body width shall be 96 inches maximum, excluding mirrors.
2. Body length shall be minimum 250 inches to maximum 275 inches including both the bumpers.
3. Wheel base shall be 138~156 inches. Body manufacturer shall select body length and wheel base such that the front and rear overhangs are within the CTDMV mandated regulations.
4. Body height shall not exceed one hundred twenty four (124) inches, and the roof hatch opening venting position.
5. Interior width in passenger compartment shall be a minimum ninety (90) inches.

3.) Question: Please supply a photo or drawing of the GHTD logo and swooshes.

Answer: Provided below.

Greater Hartford Transit District

4.) Question: Are we supposed to supply pricing for options listed on page 26? We only see on the submission form where we can supply prices for LPG and low floor. Where do we supply information and pricing for the other options listed that we might like to propose?

Answer: In Exhibit G, page 6, it says at the top of the page "Attach list of pricing for all options".

5.) Question: Would you accept used 2019 paratransit buses for this proposal? They are 2019 vehicles that all have 13,000 miles and under.

Answer: No.

6.) Question: On page 137 under Passenger Seats states: "Foam material shall be polyurethane or approved equal." This defaults to the use of FMVSS 302 as the sole flammability requirement putting operators, passengers and equipment at great risk.

Answer: Federal Docket 90-A, Recommended Fire Safety Practices for Transit Bus and Van Materials Selection applies to this RFP and the vehicles the District is looking to purchase in this procurement. Docket 90-A Is required as the level of flammability required for all Transit Bus and Van Materials. In the specifications, any language about FMVSS regarding flammability is now superseded by the requirements of Federal Docket 90-A mentioned above. In the specifications, any language about FMVSS regarding flammability is now superseded by the requirements of Federal Docket 90-A mentioned above.

7.) Question: We believe there was a possible oversight, as FMVSS 210 is listed as a flammability requirement for seat covering (pg. 137, letter c.), however FMVSS 210 is a requirement for seat belt assemblies, and does not set a requirement for the item intended. We request the following modification for all sections which mention seating requirements: "All seats shall meet, FMVSS 302 and the fire performance criteria within FTA Docket 90-A"

Answer: Federal Docket 90-A, Recommended Fire Safety Practices for Transit Bus and Van Materials Selection applies to this RFP and the vehicles the District is looking to purchase in this procurement. Docket 90-A Is required as the level of flammability required for all Transit Bus and Van Materials. In the specifications, any language about FMVSS regarding flammability is now superseded by the requirements of Federal Docket 90-A mentioned above. In the specifications, any language about FMVSS regarding flammability is now superseded by the requirements of Federal Docket 90-A mentioned above.

8.) Question: Specification requires 70K BTU, Dual Compressor auxiliary air conditioning for Types A and B with no mention of C. Is this also the requirement for the Type C vehicle?

Answer: Yes.

Request for Approved Equal Status Update:
Please reference RFP #07-020 Addendum 2 – Attachment 1_ Approved Equal Requests. (included at the end of this addendum)

End of Addendum 2

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Creative Bus Sales/Forrest River Vans
Proposer/Vehicle Manufacturer

RFP Part J Section Number A. 6 Section Title Ford Transit Van

Proposer's Request:

The maximum interior height of the Ford Transit U4X is 65.2". Request to accept this as the Required height requirement.

The District's Response:

Approved: Denied: X Noted: See Addendum: # 2

Comments: The District prefers maximum interior height of 74" inches so that drivers can assist passengers more efficiently

Procurement Officer: _____ Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Creative Bus Sales/Forrest River Vans
Proposer/Vehicle Manufacturer

RFP Part J Section Number III.E Section Title Ford Transit Van

Proposer's Request:

Request running boards be Ford OEM. Will meet measurement requirements and constructed of steel and molded plastic. (See attached photos)

The District's Response:

Approved: Yes Denied: Noted: See Addendum: #2

Comments: it shall hold 500 lbs as required.

Procurement Officer: _____ Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Creative Bus Sales/Forrest River Vans
Proposer/Vehicle Manufacturer

RFP Part J Section Number III.F Section Title Ford Transit Van

Proposer's Re quest:

Request OEM rear view mirror be accepted.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments: Same request on pg 5.

Procurement Officer: _____ Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Creative Bus Sales/Forrest River Vans
Proposer/Vehicle Manufacturer

RFP Part J Section Number IV. D2 Section Title Ford Transit Van

Proposer's Request:

Please clarify meaning of Uni-Strut seat track. Confirm Smart Floor or Abilitrax are not accepted.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments: Uni-Strut allows for the availbility to reposition seats as needed. The District has approved the use of Uni-Strut seat track.

Procurement Officer: Jaj Saunder Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Creative Bus Sales/Forrest River Vans
Proposer/Vehicle Manufacturer

RFP Part J Section Number III.F Section Title Ford Transit Van

Proposer's Request:

Request OEM rear view mirror be accepted, meets requirements and provides passenger viewing as well as vehicle to the rear.

The District's Response:

Approved: Yes Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Shaunda Dreller Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Creative Bus Sales/Forrest River Vans
Proposer/Vehicle Manufacturer

RFP Part J Section Number V. G 1 Section Title Ford Transit Van

Proposer's Request:

Clarify Uni-Strut seating system of approved equal. Request steel sub floor and seat mounting tile system be accepted. (See photo attached).

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: _____ Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Creative Bus Sales/Forrest River Vans
Proposer/Vehicle Manufacturer

RFP Part J Section Number VI. A7 Section Title Ford Transit Van

Proposer's Request:

Request Q-Straint storage bags be accepted.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Jaunita Drake Date: 6/8/20


#14CBAH
1pl 3PT 40 ES
8/22/14

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 4 Section Number 2.0 Section Title Wheelbase

Proposer's Request:

Chart lists the Size C vehicles as having a wheelbase from 176" to 190," however in various other parts of the specifications, it says 176" maximum. Is a 190" wheelbase allowed?

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Shaunde Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 6 Section Number 2.3.e.4 Section Title Suspension

Proposer's Request:

"If the vehicle requires helper spring, the body builder shall provide it. Auxiliary Super Spring Rear Helper Suspension shall be provided on both sides...."

Please clarify if you are requiring the standing additional spring spacer of if you are asking for something like Mor/Ryde suspension.

The District's Response:

Approved: Denied: X Noted: See Addendum: #2

Comments: The District prefer Spring spacer as additional helper but Mor/Ryde suspension is denied

Procurement Officer: LaShaunda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 6 Section Number 2.4 Section Title Heater

Proposer's Request:

Specifications require a 45K BTU auxiliary heater but also ask for a BTU rating sufficient to heat the interior adequately. A 45K BTU auxiliary heater is not recommended for the size C vehicle. We ask that you modify your specifications to require either two (2) 45K BTU heaters or a single 65K BTU heater.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments: Specifications have been modify for type C vehicles to required either two (2) 45K BTU heaters or a single 65K BTU heater.

Procurement Officer: Jo Saunders Drake Date: 6/8/20

APPROVED EQUAL FORM

**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus

Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 6-7 Section Number 2.4 a. Section Title Heater Valves

Proposer's Request:

We request approval of our Jomar ½" brass heater valves that meet the requirements of the specification.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Jaquandra Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part Pg. 7 Section Number 2.5 a. Section Title Air Conditioning

Proposer's Request:

Specification requires 70K BTU, Dual Compressor auxiliary air conditioning for Types A and B with no mention of C. Is this also the requirement for the Type C vehicle?

The District's Response:

Approved: Denied: Noted: See Addendum: #2

Comments: Yes

This question was responded to in the addendum. Please reference addendum # 2 for the response.

Procurement Officer: LaShaunda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 7 Section Number 2.5 d. Section Title Pull-down Test

Proposer's Request:

Air Conditioning systems have been previously pull-down tested on all vehicle sizes. Are these tests acceptable if they meet the requirements of the specifications or are you asking for pull-down tests to be performed specifically on your vehicles? These tests run upwards of $15,000 and have already been performed.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments: No need to perform an additional pull down test

Procurement Officer: Shaunda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 8 Section Number 2.6 a. 3 Section Title Thumb latch

Proposer's Request:

We request approval of our standard Kinro Manufacturing Model 71054 thumb-operated, easy-turn cam lock. Assembly include one offset cam and one straight cam.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: [signature] Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part	Specs, Pg. 9	Section Number	2.6 f. 7	Section Title	Rear Clearance Lights

Proposer's Request:

We request approval of standard LED, recess-mounted clearance lights. They are protected in their installation as opposed to flush-mounting them with armor.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Amanda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 10 Section Number 2.7 Section Title Body Construction

Proposer's Request:

We request approval of the Champion Body Structure with meets all applicable Buy America, Altoona, and FMVSS testing requirements. Please see attached specifications.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Amanda Drake Date: 6/8/20

Body Structure

The body structure made up of durable steel construction; adequately reinforced at all joints and points of stress, with sufficient strength to support the entire weight of full-loaded vehicle on its top or side, if overturned. The sidewalls are constructed of tubular 16 gauge 1-1/2" x 1-1/2" vertical studs and corner posts. Centers are on a maximum 48" with a horizontal stringer of 1-1/2" x 2" 14 gauge tubing at the top of the wall and a 16 gauge Z-rail at the bottom. The window corners shall be reinforced with corner gussets. The roof is constructed of 1.5" wide steel rafters installed on 48" centers. The floor frame consists of 14 gauge, 2 x 2.8 x 2 " channel crossmembers, on a maximum 46" center, with an outer 14 gauge angle steel impact rail.

The body is welded to the under frame structure so that the entire frame acts as one unit without any movement in joining. Front side, and back panels are secured to the floor frame, members, and posts so as to result in a permanent, fully-integrated structural unit adequately reinforced with steel posts and rails at all points where stress concentration may occur. The cage is built as a complete assembly and is square, plumb and level before installing the body on the chassis. The vehicle adequately carries loads for which it was designed without exceeding its rated GVW.

The vehicle body has a heavy-duty unit body-type structure. The entire body is full steel cage galvanized and is coated with a 99% pure zinc coating during the milling process of the steel construction. When the sidewalls, floor and roof are WELDED together, they form a continuous structure, which is extremely strong and durable. The body cage mounted on the chassis with rubber isolators. All nuts, bolts, clips, washers, clamps, and like fasteners are zinc or cadmium plated, or phosphate coated, or stainless steel to prevent corrosion.

Reinforcements are installed around door openings in order to transfer stress around the opening. The exterior sidewall skin and back wall are made of a composite material to resist corrosion. The side skirts are made of same material and easily replaced. The urethane insulation, minimum 1/2" thick, is sprayed between the exterior skin and the interior panels including roof. The insulation is moisture-proof and has excellent thermal and acoustic insulating characteristics.

The roof is covered by one piece composite material, no seams except with front and rear caps and escape hatch locations.

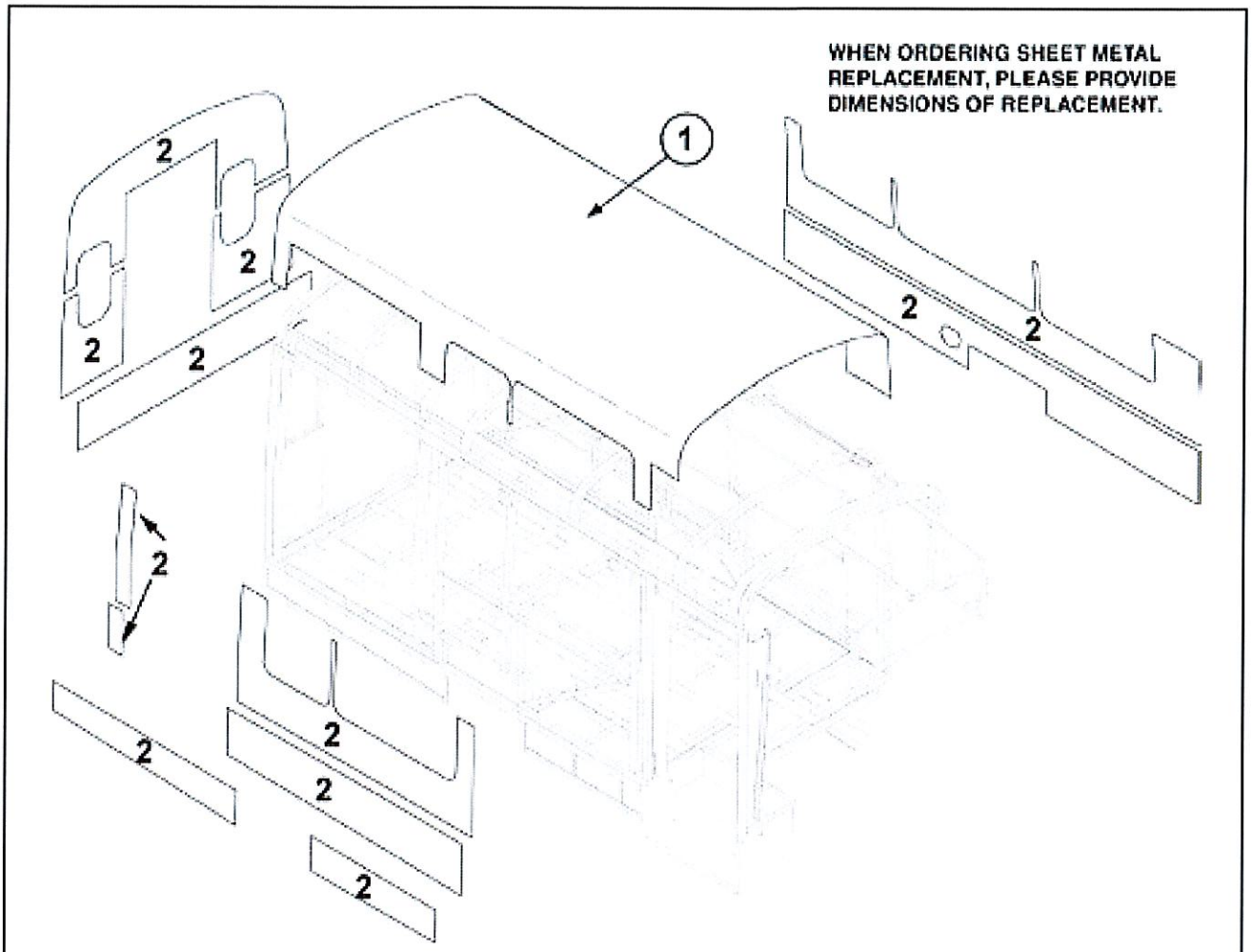
All underbody plywood and steel, with the exception of the drive shaft, catalytic converter, engine, transmission, exhaust system, etc. are undercoated to protect against corrosion and provide additional sound deadening. The material is an abrasive-free petroleum black petroleum asphalt emulsion,

formulated with corrosion inhibitors. All mechanisms (moving or stationary parts) that are affected or rendered useless by an application of sealant or insulation are protected, including vent canisters and drain pipes prior to undercoating. Undercoating design to pass a 5% salt spray test for a minimum 1000 hours.

Lower skirt panels are sufficiently fastened and braced to prevent damage from ice and snow build-up. Lower skirt panel sections are easily removable and repairable. Where panels are lapped, the upper or forward panel acts as a watershed. Sealing and fastening of joints prevent entrance of moisture and dirt. All exterior panels are riveted, bonded or welded to the body frame with no exterior visible fasteners.

Gun installed huckbolt fastenings, buck rivets or welds are used at all locations where stress is concentrated. Fastener materials are compatible with materials being fastened. No sheet metal screws are used in this area of construction, except fender rubbers which can be secured with locking-type, self-tapping bolts. Where self-tapping bolts are used, body panels are reinforced with aluminum or stainless steel backing.

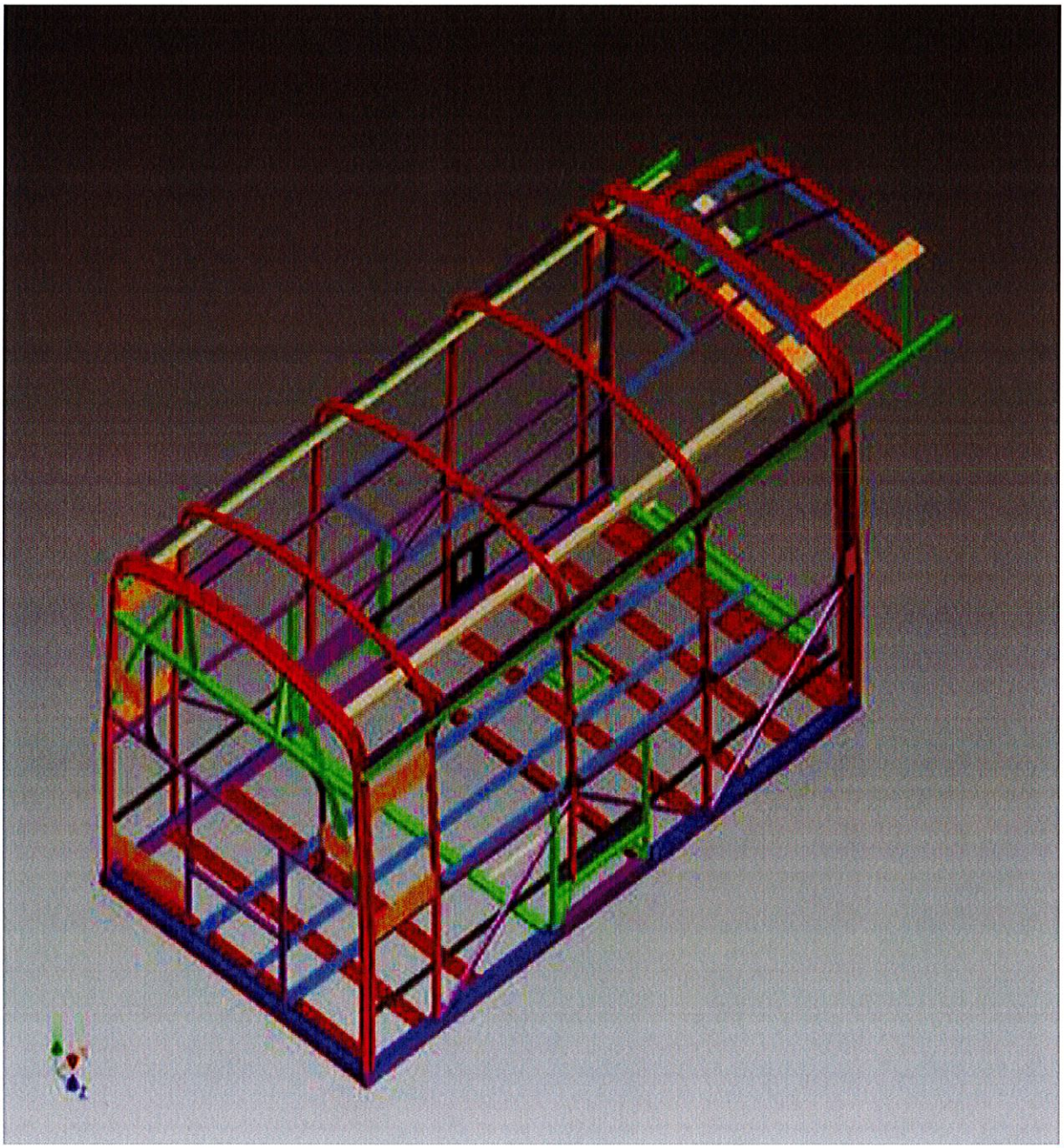
800.776.4943
331 Graham Road
Imlay City, MI 48444



NOBLE CHOICE EXTERIOR

ITEM	PART NO.	DESCRIPTION	QTY
01	3371953	SHEETING, COMPOSITE .06 x 108" W	A/R
02	3372155	PANEL, NOBILE CHOICE 2.54mm x 36" x 1	A/R

ITEM	PART NO.	DESCRIPTION	QTY



800.776.4943
331 Graham Road
Imlay City, MI 48444

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 11 Section Number 2.7 c.3 Section Title Underbelly Pan

Proposer's Request:

While we can provide the underbelly pan, we request approval of its removal as it is not necessary for the structural integrity of the body but rather acts as a moisture trap eventually causing corrosion.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Amanda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 11 Section Number 2.7 c.5 Section Title Floor Covering

Proposer's Request:

We request approval of Gerflor Tarabus anti-slip flooring. Please see attached.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Jennifer Drake Date: 6/8/20

Gerflor Tarabus 2.25mm

78 ¾ X26yd 9 inch

*Tarabus is designed to last the life of the bus

Tarabus has a compact pure PVC wear layer for superior durability and ease of cleaning

*Tarabus has silicone Carbide and emboss that make the flooring highly slip resistant.

We do not use larger aggregates such as Quartz which can inhibit cleaning and as floor wears and Quartz comes loose can create holes that fill with dirt and will not come clean.

*Tarabus is compliant with ADA ASTM D2047 for Slip Resistance.

*Tarabus has a glass fiber web that gives superior dimensional stablility that restricts shrinkage and cracking

*Tarabus has a textile backing that allows for superior adhesion. Textile backing allows flooring to hold more glue. More glue equals better adhesion. Get a mechanical adhesion along with chemical adhesion.

*Tarabus Innovation. MK with 4mm Foam Backing for noise reduction and Self Adhesive.

*Tarabus is extemely lightweight 4lb per square yards. Compare to RCA 11lb and Altro 5.87lb. This will save 90lb per 40ft bus.

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 12 Section Number 2.7 f.1 Section Title Rear Door

Proposer's Request:

We request approval of our standard 36" x 55" Rear Emergency door.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Amanda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part	Specs, Pg. 12	Section Number	2.7 g.4	Section Title	Lift Door Retention

Proposer's Request:

We request approval of our standard gas strut in lieu of spring-activated device.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Amanda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 13 Section Number 2.7 i.6 Section Title Window Size

Proposer's Request:

We request approval of our 24" x 36" windows. The 24" x 30" is a proprietary specification. In order to accomplish this, we would need to modify the steel cage and re-test. Our vehicle meets all applicable FMVSS for Joint Strength and Rollover.

The District's Response:

Approved: Denied: X Noted: See Addendum: #2

Comments: The District prefer 24"x30" window to not compromise the construction of the wall.

Procurement Officer: Amanda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part	Specs, Pg.13	Section Number	2.7 I.2	Section Title	Seat Installation

Proposer's Request:

Specification mentions the seat track on the floor and later says that seats must be bolted to the floor. Please clarify that track seating is acceptable as it has been successfully tested and meets all applicable safety standards and bolting the seats directly to the floor is only done by a single manufacturer.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments: Track seating is approved for the Ford Transit vehicles
Cutaways vehicles must have bolted seats

Procurement Officer: Shaunda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 16 Section Number 2.8.4 Section Title Seatbelts

Proposer's Request:

We request approval of the Freedman Under Seat Retractors which shall be provided with the Freedman Feather-Weight Mid-hi Seat. These belts are made specifically for the Freedman seat and meet your specification.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Jennifer Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Champion Bus
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 22 Section Number 2.12 Section Title Undercoating

Proposer's Request:

We request approval of Tectyl 121B in lieu of 127G Silver. Please see attached Data Sheet.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Shaunda Drake Date: 6/8/20

Tectyl® INDUSTRIAL PRODUCTS

PRODUCT INFORMATION

DAUBERT CHEMICAL COMPANY, INC.

TECTYL® 121B

Description

TECTYL® 121B is a solvent cutback, thixotropic corrosion preventive compound suitable for complete undercoating for transportation equipment. The cured film is firm, black, resilient, abrasion resistant, and provides sound deadening. TECTYL® 121B is approved under Federal Specification TT-C-520B.

Laboratory Data

Typical Properties

Flash, PMCC*, Minimum	**106°F**
Density, Weight/Gallon @ 77°F (25°C)	**8.5 ± 0.1 lbs./gallon**
Specific Gravity @ 60°F (15.6°C)	**1.02**
Recommended Dry Film Thickness over Metal Profile	**15 - 20 mils**
Theoretical Coverage @ Recommended DFT	**45.82 sq. ft./gallon**
Non-Volatile % by Weight	**62 ± 2**
Non-Volatile % by Volume	**50 ± 2**
Volatile Organic Content (VOC)	**3.4 lbs./gallon**
Approximate Dry to Touch Time @ 77°F (25°C)	**2 - 4 hours**
Cure Time	**16 - 24 hours**
High Temperature Flow Point, Minimum	**350°F**

Accelerated Corrosion Tests:

5% Salt Spray (Hours)	
ASTM B-117 @ Recommended DFT (4x12x20 gauge C. R. steel substrate)**	**3672**
100% Relative Humidity (Hours)	
ASTM D-1748 @ Recommended DFT (4x12x20 gauge C. R. steel substrate)	**1500**

*PMCC (Penske Martin Closed Cup)
**ASTM (American Society for Testing and Materials)

Surface Preparation

The maximum performance of TECTYL® 121B can be achieved only when the metal surfaces to be protected are clean, dry and free of rust, oil and mill scale. Daubert Chemical Company recommends that the metal substrate temperature be 50-95°F (10-35°C) at the time of product application.

Application

TECTYL® 121B is formulated to be used as supplied. Ensure uniform consistency prior to use. Continued stirring is generally not required. If the product thickens due to cold storage or loss of solvent during use, contact Daubert Chemical Company. DO NOT THIN TECTYL® 121B. Incorrect thinning will affect film build, dry time and product performance. Daubert Chemical Company recommends that the ambient and product temperature be 50 - 95°F (10 - 35°C) at time of application. TECTYL® 121B can be airless spray applied. DO NOT FREEZE TECTYL® 121B.

Removal

TECTYL® 121B can be removed with TECTYL® HPS solventborne thinner, vapor degreasing, hot alkaline wash, or low pressure steam. TECTYL® 121B can be removed from fabrics by normal dry cleaning procedures. Avoid the use of chlorinated or highly aromatic solvents when removing from painted surfaces, as these solvents may adversely affect paint.

Storage

Store TECTYL® 121B at temperatures between 50-95°F (10-35°C). Mild agitation is recommended prior to use.

Caution

Adequate ventilation is required for cure and to ensure against formation of a combustible liquid. THE PARTIALLY CURED FILM SHOULD NOT BE EXPOSED TO IGNITION SOURCES SUCH AS FLARES, FLAMES, SPARKS, EXCESSIVE HEAT, OR TORCHES. Refer to Daubert's Material Safety Data Sheet for additional handling and first aid information.

Note:

The addition of any product over or under this coating is not recommended. The use of additional coatings could result in chemical incompatibility, thus adversely affecting the performance of this coating as stated in the lab data section. If a product other than Daubert Chemical Company's recommended product is required, written authorization must be obtained from Daubert Chemical Company, Inc.

3/24/04:kp

REFER TO MATERIAL SAFETY DATA SHEET FOR HEALTH AND SAFETY INFORMATION.

APPROVED EQUAL FORM

**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top

Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 6 Section Number 2.3.e.4 Section Title Rear Suspension

Proposer's Request:

We request approval of Mor/Ryde rear suspension in lieu of Super Spring Rear Helper Suspension. Please see attached.

The District's Response:

Approved: Denied: X Noted: See Addendum: #2

Comments: District prefer the spring helper spacers.

Procurement Officer: _____ Date: 6/8/20

RL DOCUMENTATION SHEET

DATE:_____

I. VEHICLE INFORMATION

MAKE:_____
MODEL:_____
YEAR:_____
VIN:_____
DRIVE AXLE RATING:_____
STEER AXLE RATING:_____

DRIVE AXLE TIRES:_____
STEER AXLE TIRES:_____
RIMS FRONT:_____ RIMS REAR:_____
GAS____ DIESEL____
SINGLE____ DUALLY____
4x2____ 4x4____

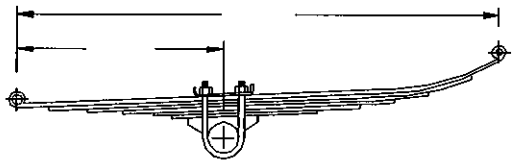
II. LEAF SPRING INFORMATION

a) NUMBER OF LEAFS:_____
b) OVERLOAD - TOP:_____
- BOTTOM:_____
c) SPRING WIDTH:_____

d) SPRING EYE DIAMETER:_____
e) SPRING EYE WIDTH:_____
f) TAPERED____ PARABOLIC____
g) DOUBLE EYE____ SLIPPER____

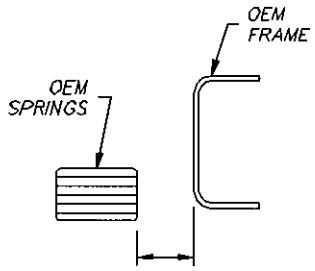
FRONT

SPRING SKETCH



SIDE VIEW

CHECK BOTH SIDES (FRONT & REAR)



END VIEW

P:\RL\DOC3

RUBBER LEAF SUSPENSION

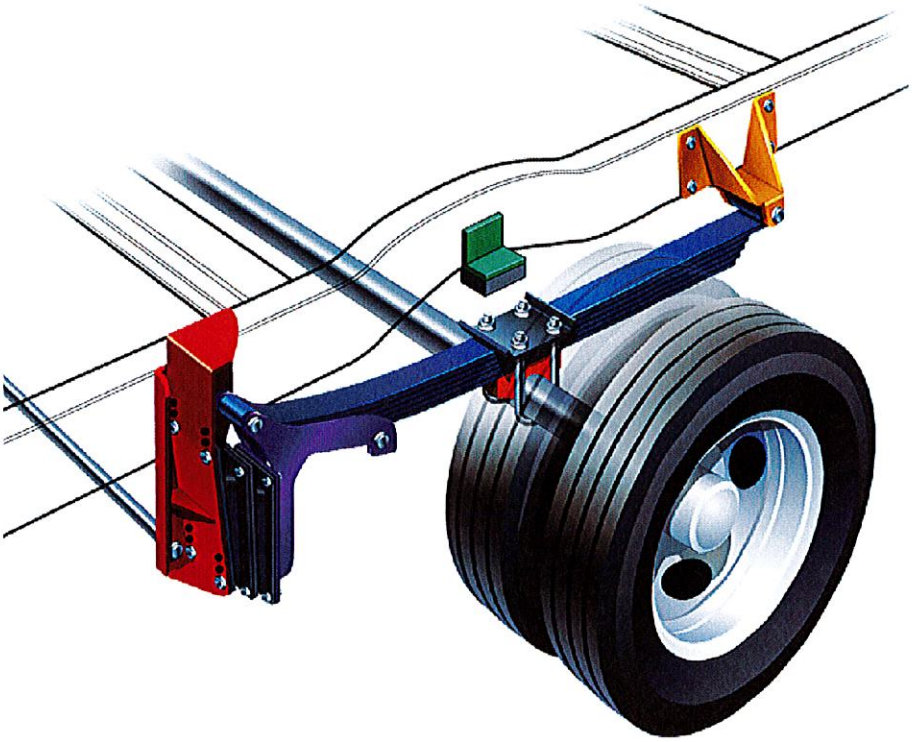
[RL] SYSTEM

The MORryde Rubber Leaf Suspension System (RL) works in conjunction with the existing leaf springs to give you a softer, smoother, more comfortable ride. Whether it is chuck holes, dirt roads, or railroad tracks, MORryde's unique design combined with rubber's natural tendency to isolate and absorb road shock provides improved passenger comfort and better protection for your vehicle.

The RL suspension system can be ordered on new units from the manufacturer or installed aftermarket on units equipped with leaf springs in a very cost effective manner. Each system comes with a 3 year/ 70,000 mile warranty and requires minimal maintenance to sustain optimal performance. This unique system is available for trucks, ambulances, and motorhomes.

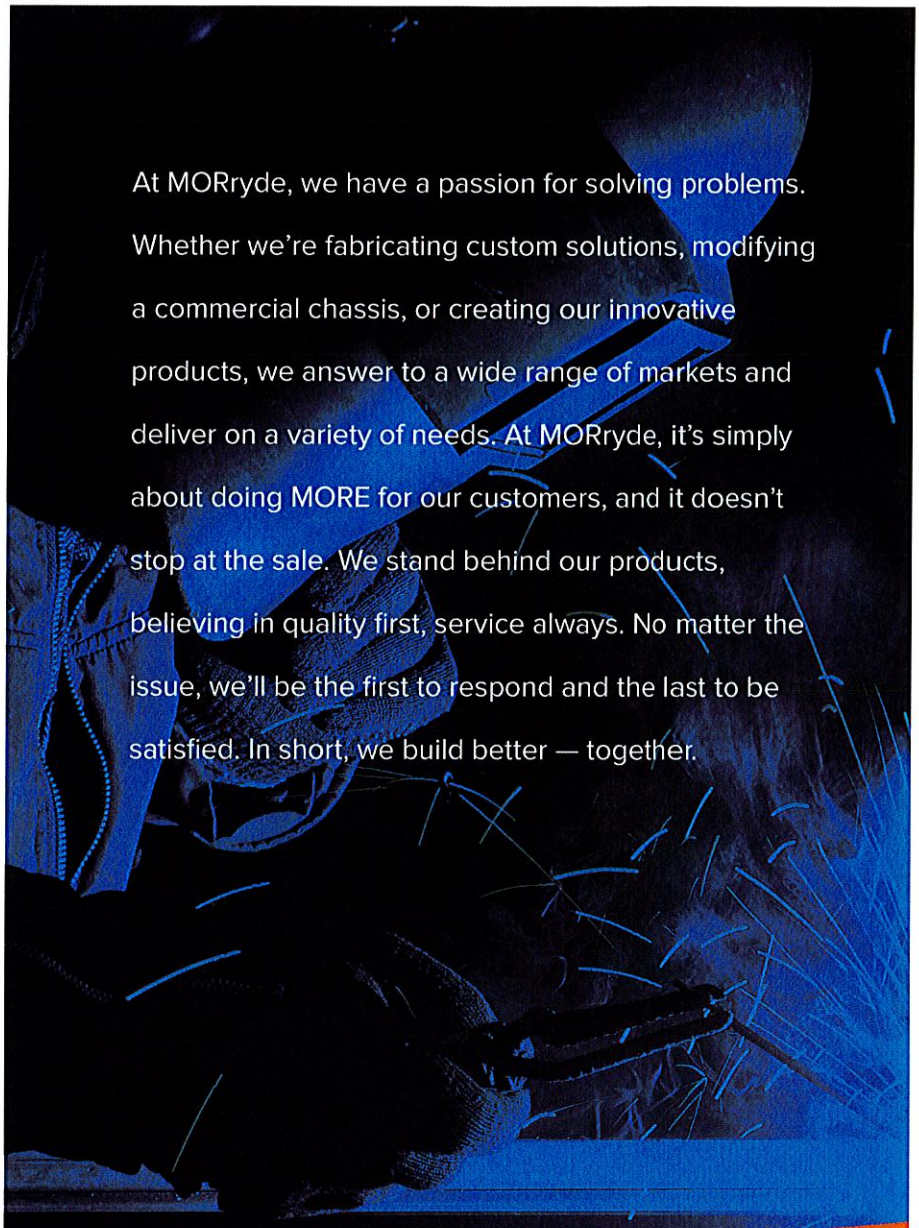
Better protection from damging road shock

- Increased suspension travel with up to 4" of total wheel travel
- Rubber shear springs isolate and absorb road shock to provide a more comfortable ride for all your passengers
- Softened suspension through a lower spring rate
- Reduced vibration from rough roads
- Overall higher quality ride
- Easily adjustable to account for wheel chair lift



MORryde

Above Beyond Always.



At MORryde, we have a passion for solving problems. Whether we're fabricating custom solutions, modifying a commercial chassis, or creating our innovative products, we answer to a wide range of markets and deliver on a variety of needs. At MORryde, it's simply about doing MORE for our customers, and it doesn't stop at the sale. We stand behind our products, believing in quality first, service always. No matter the issue, we'll be the first to respond and the last to be satisfied. In short, we build better — together.

MORryde

Above. Beyond. Always.

1966 Sterling Avenue • Elkhart, Indiana 46516
574-293-1581 • sales@morryde.com
MORryde.com

CONNECT WITH US

MORryde International, Inc
@MORryde
@MORryde

USA

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Spec, Pg. 6 Section Number 2.3.8.11 Section Title Driver Storage

Proposer's Request:

Please clarify if OEM Glove Box meets this specification.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: _____ Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Spec, Pg. 6 Section Number 2.3.9 Section Title Mirrors

Proposer's Request:

We request approval of Velvac brand in lieu of Rosco – this will still meet requirements. Please see attached.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Jaunda Drake Date: 6/8/20

2020SS Shuttle System-Ford E Van

SKU: 728739

2020SS Deluxe Head, Black, Heated Remote Flat Glass, Heated Manual Convex Glass, Lighted, 96" Body Width, Pair

OVERVIEW & FEATURES

SPECIFICATIONS

Item Overview:

- Deluxe mirror with independently adjustable flat and convex glass (63 square inch flat glass, 30 square inch convex with 12" radius glass).
- Complete mirror system includes LS door mirror, RS fender mirror, all hardware and switches.

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 8 Section Number 2.6.a.3 Section Title Battery Door

Proposer's Request:

We request approval of Challenger Door brand battery door with standard latch from Illinois Lock as equal understanding that it meets the language of the spec.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Amanda Duke Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Specs, Page 8 Section Number 2.6.c Section Title Alternator

Proposer's Request:

We request approval of OEM standard 210 amp alternator which will adequately power all equipment on vehicles.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Jennifer Daake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 8 Section Number 2.6.d Section Title Backup Alarm

Proposer's Request:

We request approval of Superior Signal p/n STA20162A as equal understanding that it meets the requirements of the spec. Please see attached.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: LaShaunda Drake Date: 6/8/20

SAFE-T-ALERT®

2000 SERIES, SELF ADJUSTING

Specifications:

- Voltage: 12-24 or 12-48VDC
- Decibels: 77-97 or 77-102 dB self-adjusting
- Size: 4"w x 1.62"d x 2.73"h
- Average Amp Draw: less than .6AMP
- Polarity Protected: Yes
- Spike Protected (V): +100/-400
- Mounting: Universal
- Warranty: 2 year
- Features:
  - Epoxy encapsulated circuit board
  - Optional wire leads

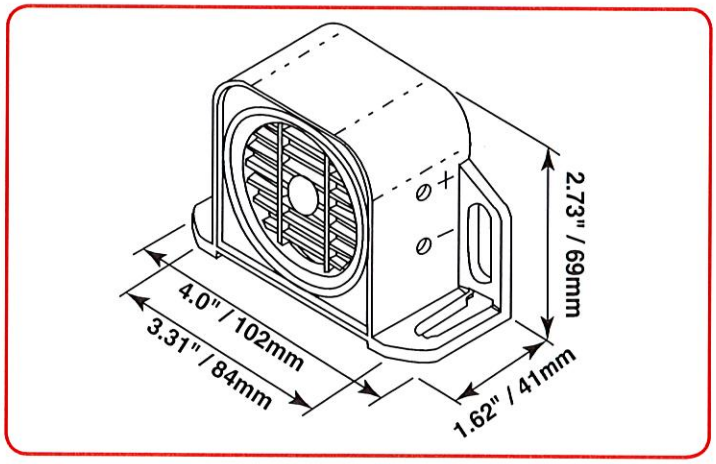
Certifications:

- UL approved
- CE

With Wire Leads

Variations:

PART #	DESCRIPTION
STA20154A	12-48VDC, 77 to 97dB self adjusting
STA20154AW	12-48VDC, 77 to 97dB self adjusting with wire leads
STA20162A	12-24VDC, 77 to 102dB self adjusting
STA20162AW	12-24VDC, 77 to 102dB self adjusting with wire leads



US: 16355 South Lone Elm Road • Olathe, KS 66062 • USA
Canada: 1039 Cardiff Blvd. • Mississauga, Ontario L5S 1P4 • Canada

P: 913-780-1440 • TOLL FREE 800-447-3693 • F: 913-780-1427
E: info@superiorsignals.com • www.superiorsignals.com

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 9 Section Number 2.6.f.6 Section Title Lights

Proposer's Request:

Please allow Maxima brand lights with lifetime warranty in lieu of brand specified understanding they meet requirements of the specification. Please see attached.

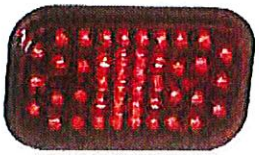
The District's Response:

Approved: X Denied: Noted: See Addendum: # 2

Comments:

Procurement Officer: Amanda Drake Date: 6/8/20

RECTANGULAR STT



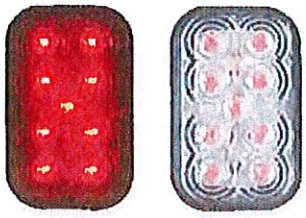
PART NUMBER	M42201R RED
LEDs	44
Dimensions	5.3"W X 3.4"H X 1.8"D
DOT/SAE	J1395, J1398, J585e
Voltage	12.8VDC
Legal Heading	16S2T2
Amp Draw	310ma
Mounting	Grommet
Connector	PL-3

- 5" Rectangular STT
- Sealed Moisture Corrosion Proof Electronics
- Polycarbonate Lens & Housing
- Plated Brass Connector

RECTANGULAR STT

5

Lightning



PART NUMBER	M42213R RED	M42213RCL RED CLEAR LENS
LEDs	9	
Dimensions	5.3"W X 3.4"H X 1.8"D	
DOT/SAE	J1395, J1398, J585e	
Voltage	12.8VDC	
Amp Draw	190ma	
Legal Heading	16S2T2	
Mounting	Grommet	
Connector	PL-3	

- 5" Rectangular STT
- Patented Lightning Optics
- US Patent No. 8,009,364
- US Patent No. 8,717,679 B2
- Sealed Moisture Proof Electronics
- Polycarbonate Lens & Housing
- Plated Brass Connector
- 5 Year Warranty

SURFACE MOUNT LOW PROFILE 0.4" THIN STT

5

M42206- ADHESIVE

PART NUMBER	M42206R RED M42206-ADHESIVE OPTIONAL MOUNTING TAPE
LEDs	14 Red
Dimensions	4.6"W X 2.5"H X 0.4"D
DOT/SAE	J1395, J1398, J585e
Legal Heading	IST
Amp Draw	Red 230ma
Voltage	12.8VDC
Connector	Three 7" Leads
Mounting	Two Hole Surface or Optional Adhesive Tape Kit

- Ultra Thin 0.4" Design
- Polycarbonate Lens & Housing
- Completely Sealed
- Two Hole or Tape Mount
- 2 Caps to Cover Screws
- 5 Year Warranty

RECTANGULAR STT

5

PART NUMBER	
M63318R-A	RED
M63318RCL-A	RED CLEAR LENS
M63318R-A-GSKT	RED WITH GASKET

LEDs	10
Dimensions	15.4"W X 1.2"H X 0.7"D
DOT/SAE	J1395, J1398, J585e
Voltage	12.8VDC
Amp Draw	250ma
Legal Heading	IST
Mounting	Surface
Connector	3 Wire 14" Leads

- 15" Surface Mount STT
- Horizontal & Vertical 2 Hole Surface Mount
- Compact Thin Low Profile Design
- 3 Blunt Cut 14" Leads
- Sealed Moisture Corrosion Proof Electronics
- Polycarbonate Lens & Housing
- 10 Year Warranty

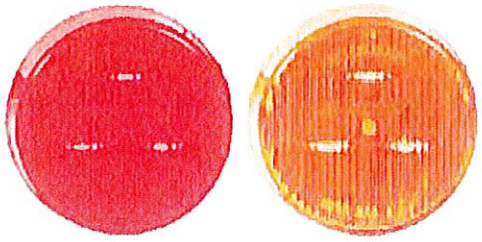
SURFACE MOUNT ID BAR/CENTER HIGH MOUNT STOP LIGHT (CHMSL)

5

PART NUMBER	M63319R RED		
LEDs	9	DOT/SAE	J592 J2042 J1957
Dimensions	15.4 L X 1.2"W X 0.7"H	Legal Heading	P2 P3 U3
Voltage	12.8VDC	Connector	14.5" Blunt Cut Leads 18AWG
Amp Draw	150ma CHMSL 20ma ID Bar	Mounting	Two Hole Surface Mount Horizontal Only

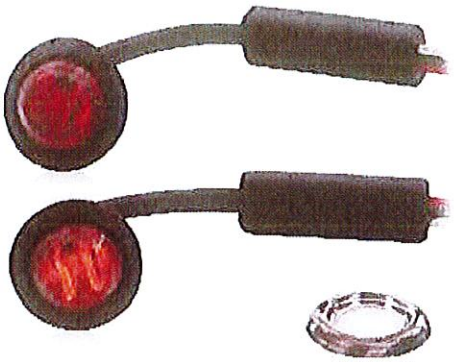
- Dual Function Operation
- Polycarbonate Lens & Housing
- Sleek Low Profile Design
- Two Hole Surface Mount-Horizontal Only
- 5 Year Warranty

2 1/2" CLEARANCE / AUXILIARY STOP & CLEARANCE / AUXILLIARY TURN



PART NUMBER	M11300RAS M11300YAT	RED AUX STOP AMBER AUX TURN
LEDs	3	• 2 1/2" Auxiliary
Dimensions	2.5" Diameter X 0.8" Depth	• Aux Stop / Aux Turn
DOT/SAE	J592e	• Sealed Moisture Proof Electronics
Voltage	12.8VDC	• Solid State Circuit Board
Amp Draw	40ma	• Polycarbonate Lens & Housing
Legal Heading	P2	
Mounting	Grommet	
Connector	3 Wire Leads	

3/4" MINI CLEARANCE / AUXILIARY STOP & CLEARANCE / AUXILLIARY TURN

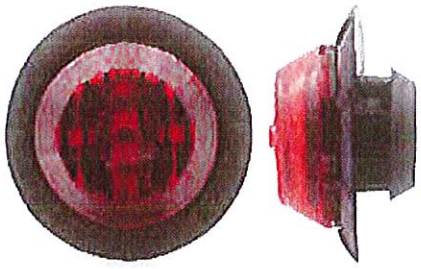


OPTIONAL
M50112 BEZEL

PART NUMBER	M09300RAS M09300YAT M50112	RED AUX STOP AMBER AUX TURN CHROME BEZEL
LEDs	3	• 3/4" Mini Aux Stop / Turn
Diameter	3/4"	• Polycarbonate Lens & Housing
DOT/SAE	J592e	• Not For Stand Alone Use
Voltage	12.8VDC	• Compact Thin Low Profile Design
Amp Draw	40ma/10ma	• 3 Blunt Cut 10" Leads
Legal Heading	P2	• 3 Bullet Connectors on 10" Leads
Mounting	3/4" Hole	• Sealed Moisture Proof Electron cs
Connector	3 Bullet Connectors on 10" Leads	• 5 Year Warranty

1.25" LOW PROFILE GROMMET OR SURFACE MOUNT CLEARANCE / AUXILIARY STOP - BULK PACK

Lightning



OPTIONAL
M50118 BEZEL

PART NUMBER	M09410RAS-X M50118	RED STT/CM P2 BULK ONLY CHROME BEZEL
LEDs	6	• Bulk 10-Pack Only Packaging
Voltage	12.8VDC	• Ultra Thin Low Profile Des gn
Amp Draw	80ma Red	• Patented Lightning Lens Opt cs
Diameter	1-1/4"	• US Patent No 8,009,364
Legal Heading	P2	• US Patent No 8,717,679 B2
DOT/SAE	J592E	• Polycarbonate Lens & Housing
Connector	3 Male .180 Bullet Connectors 7" Leads	• Low LED Amp Draw • 5 Year Warranty
Mounting	Grommet 3/4" Hole or Tape Foam Gasket	

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 9 Section Number 2.6.f.6 Section Title Rear Lights

Proposer's Request:

We request approval of our standard 1" x 12" x 10" Diode rear stop, tail, turn lights integrated into rear cap assembly in lieu of specified 4" round. Being recess-mounted, there is no need for armoring.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Laurinda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 10 Section Number 2.7.a.1 & 2 Section Title FMVSS 220

Proposer's Request:

FMVSS 220 is a school bus requirement that does not apply to Commercial buses. Because our manufacturer does not produce school buses they do not feel the need to perform this test. This does not mean, however, that their product would fail. Florida Dept of Transportation has an extensive testing program and they test each type of vehicle in their fleet. Unlike FMVSS 220 where a static test is done FDOT performs a dynamic test – they create what actually happens during an accident. This tests the weakest points on the vehicle which are from the roof to the sidewall and from the sidewall to the subfloor. FDOT buys approximately 100 Turtle Top buses per year and has been buying them for nearly 20 years. Turtle Top is the single remaining independently-owned manufacturer of this type of vehicle. They are much more willing to work with their customers to fully meet their needs as well as delivering the vehicles when they say they will. They take pride in their buses as well as their reputation. Please see attached.

Furthermore spec requires no exterior skin while testing, however skin must go on to install windows and doors which are to be opened as a passing results of either test. This language negates the test results.

The District's Response:

Approved: Denied: X Noted: See Addendum: #2

Comments: The District prefer to perform these test to assure vehicle safety.

Procurement Officer: Jo'Amanda Drake Date: 6/8/20

CRASHWORTHINESS AND SAFETY ASSESSMENT OF TURTLE TOP TERRA TRANSPORT BUS (WB 138")

Transit Office

Florida Department of Transportation

Crashworthiness and Impact Analysis Laboratory

FAMU-FSU College of Engineering

August 27, 2009

CRASHWORTHINESS AND SAFETY ASSESSMENT OF TURTLE TOP TERRA TRANSPORT

Table of contents

1. SUMMARY

A comprehensive crashworthiness and safety assessment of the Turtle Top Terra Transport paratransit bus (on a Chev-12,300# 138" wheelbase) was conducted and is presented in this report. A numerical approval procedure was selected for this assessment with finite element analysis per "Crash and safety testing standard for paratransit buses acquired by the state of Florida" [1]. Rollover and side impact of the bus were investigated. This methodology was supplemented by an extensive testing program of the bus materials, parts and connections. It provided a direct insight into the bus strength as well as was used as a validation and verification tool for computational mechanics analysis. A finite element model of the Turtle Top bus was developed for this study as shown in Figure 1.

Figure 1: Finite element model (top) and an actual bus (bottom) of Turtle Top Terra Transport paratransit bus.

The welded 1" x 16-gauge steel cage, primer coated, with continuous vertical tubes positioned in pairswith a 1" separation and discontinuous horizontal elements (such as waistrails) that are welded between the pillars, was found to be very robust and crashworthy. The cage tubes did not buckle locally in our testing and allowed for the full development of plastic hinges during both static and dynamic impact loading.

The connection tests revealed the weak design of wall to floor connection, in particular when tested without the flooring present, due to welding on only one side of the connection.

Rollover and side impact of the bus were investigated using the finite element model validated by several laboratory tests. The following conclusions have been reached:

- The bus passes the rollover test procedure with added mass for passengers.
- The bus passes the side impact tests with the IIHS 3460 lb (1.54 tons) movable barrier at 30 mph.

The following sections of this report provide technical information regarding the laboratory testing, model validation and crashworthiness analysis of the Turtle Top bus.

Recommendations for improvement

There are two modifications recommended for the investigated bus structure.

One of the critical structural elements in the superstructure of cutaway buses, and the most vulnerable to extensive deformation, is the front most body structure and the transition zone between this and the chassis. An additional connecting element (roof bow) is recommended for the Turtle Top Bus, as shown in Figure 2, along with improved connections between the two areas. This solution should reduce deformation of the frontal part of the bus during roll-over test.

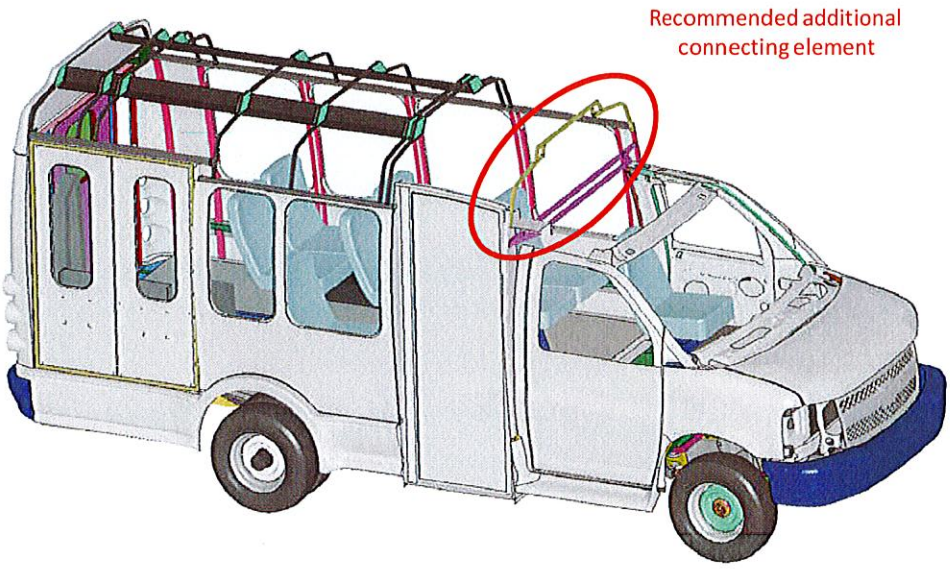


Figure 2: Location of the recommended additional connecting element.

In the original bus wall-to-floor connection the line welds connecting the two pieces were located only along the top inside edge. This resulted in significant deformation and small resistance of the connection during the bending test. For wall-to-floor connections additional welds should be placed between floor tubing and the wall horizontal channel at the lower outside edge. These additional weld spots are shown in Figure 3.

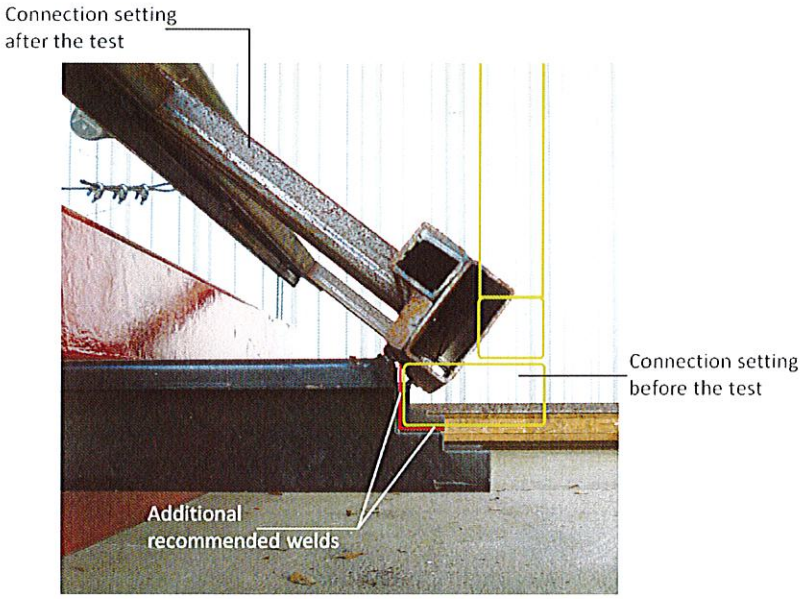


Figure 3: Wall-to-floor connection setting before and after the test, additional recommended welds have been shown.

2. SCOPE

This document was prepared to describe a comprehensive crashworthiness assessment of a Turtle Top Terra Transport bus. The report follows the procedure for numerical approach presented in "Crash and safety testing standard for paratransit buses acquired by the state of Florida" [1]. Validated finite element models were used for analyses of standardized rollover and side impact tests. All tests and simulations were performed according to the flowchart presented in the Figure 4 below.

Material characterization testing was conducted at the Military University of Technology, Warsaw, Poland. The large-scale connection tests were done at the Structures Laboratory of the Florida Department of Transportation. The Turtle Top Inc. Company provided the AutoCAD drawings of the bus, and supplied the testing connections and material samples for testing free of charge. Bus manufacturer also provided the data of the center of gravity (COG) position for the Turtle Top Terra Transport bus.

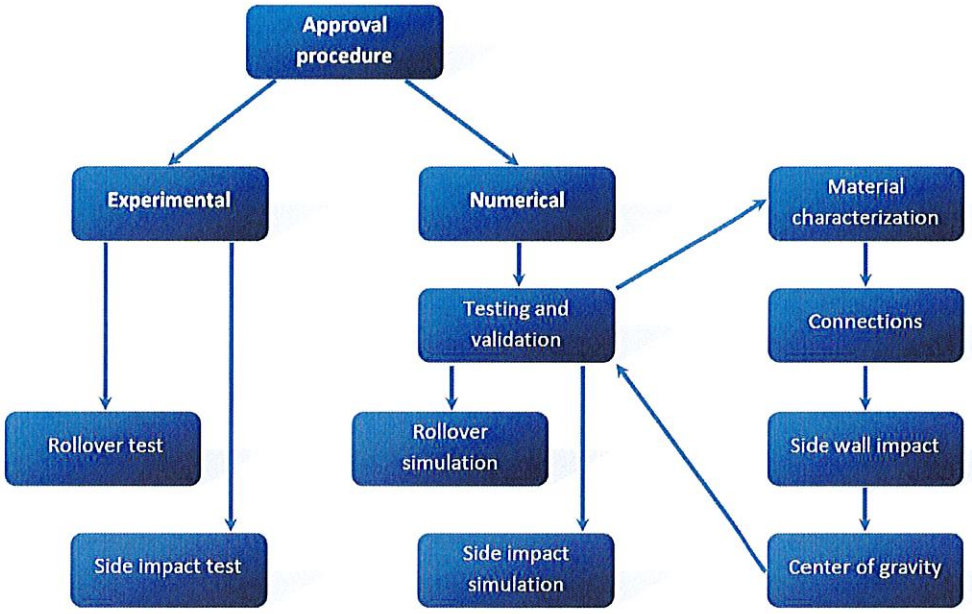


Figure 4: Approval procedure flowchart [1].

3. TESTING AND VALIDATION

3.1 Material characterization

The main goal of the material testing is to identify actual material properties of the major structural components. All data from material characterization testing was used as input for the finite element model.

3.1.1 Structural steel

Structural parts of the passenger compartment (walls framing and roof bows) are built of hollow structural sections HSS 1.0"x1.0"x16ga using mild steel. Two types of tests were performed on the tube samples: tensile coupon and 4 point bending.

TENSILE TEST

For the tensile test four "dogbone" coupons were cut out from tube samples and used for obtaining the stress-strain relationship characterizing the material. The tests were conducted on INSTRON 8802 with FastTrack software. The averaged basic mechanical properties derived from the tests are provided in the Table 1. Figure 5 shows the results of the tensile test for steel coupons obtained from Turtle Top tube samples.

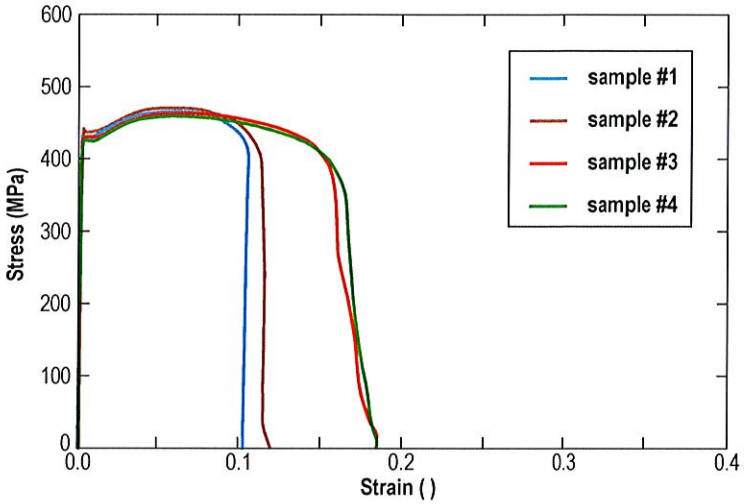


Figure 5: Stress strain relationships for mild steel coupons used in the Turtle Top bus structure.

Table 1: Mechanical properties of steel.

Yield strength (MPa)	Modulus of elasticity (GPa)	Elongation at break (%)
389.4	207.3	18.0

BENDING TEST

Structural members of paratransit buses are subjected to bending during rollover and side impact accidents. Therefore, four point bending tests are performed as a direct measure of the tubes strength.

The test setup for the tube bending is presented in Figure 6. A four feet long beam rests on circular supports three feet apart. The load is applied to the beam at two points one feet apart (d_1 and d_3) at $\frac{1}{3}$ and $\frac{2}{3}$ of the beam length respectively. The displacement of the bottom (moveable) traverse is denoted as d_0 and stored in the system together with the load applied. Additionally, deflection of the beam in points d_1 and d_3 (under the load points) and d_2 (middle of the beam) are recorded.

Figure 6: Testing apparatus for four point bending.

The limiting ratios for uniformly compressed flanges of rectangular box and hollow structural sections subject to bending are calculated per AISC Steel Construction Manual Table B4.1 [3] using formulas:

$$\lambda_p = 1.12\sqrt{\frac{E}{F_y}}; \quad \lambda_r = 1.40\sqrt{\frac{E}{F_y}}$$

for compact limit and noncompact limit respectively. For the mild steel used in the Turtle Top buses these limits are:

$$\lambda_{p\_T} = 1.12\sqrt{\frac{207300}{389.4}} = 25.8 \qquad \lambda_{r\_T} = 1.40\sqrt{\frac{207300}{389.4}} = 32.3$$

Table 2 contains geometrical properties of the tested cross section. The HSS 1.0inx1.0inx16ga is in the compact region.

Table 2: Geometrical properties of tested tubes.

Tube provider	*Dimension*	*Slenderness* $\lambda = \frac{b}{t}$	*Cross section classification*
Turtle Top	HSS 1.0inx1.0inx16ga	$\frac{22.056}{1.672} = 13.19$	compact

Results of the tests are shown in Figure 7 and Figure 8. The cross section of the tubes was considered as compact, λ was low, and local buckling was not present. As a result of this deformation mode the plastic hinges are developed for all cross-section including adjacent areas.

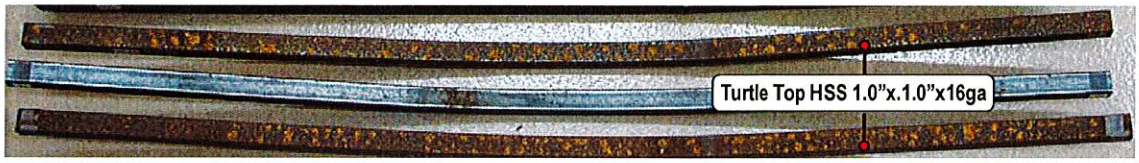
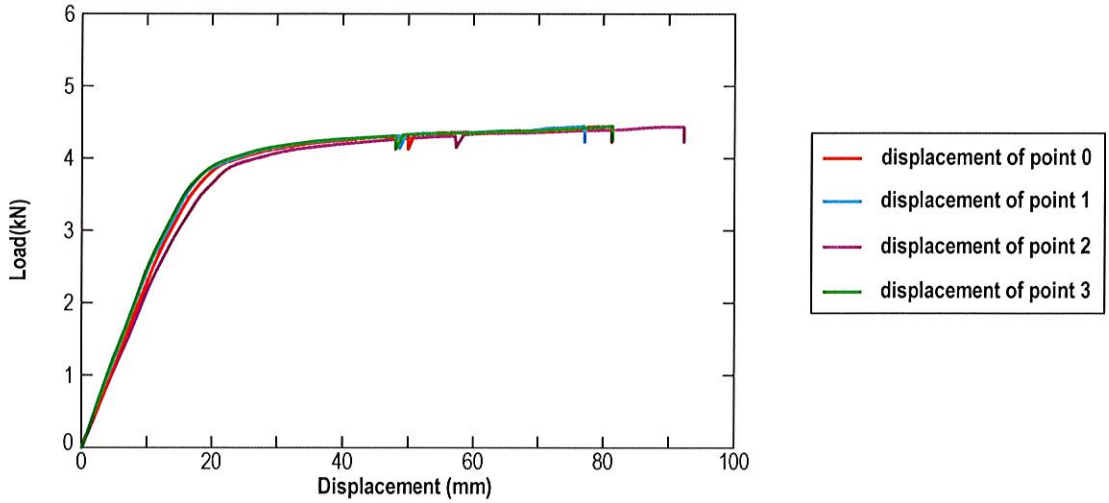
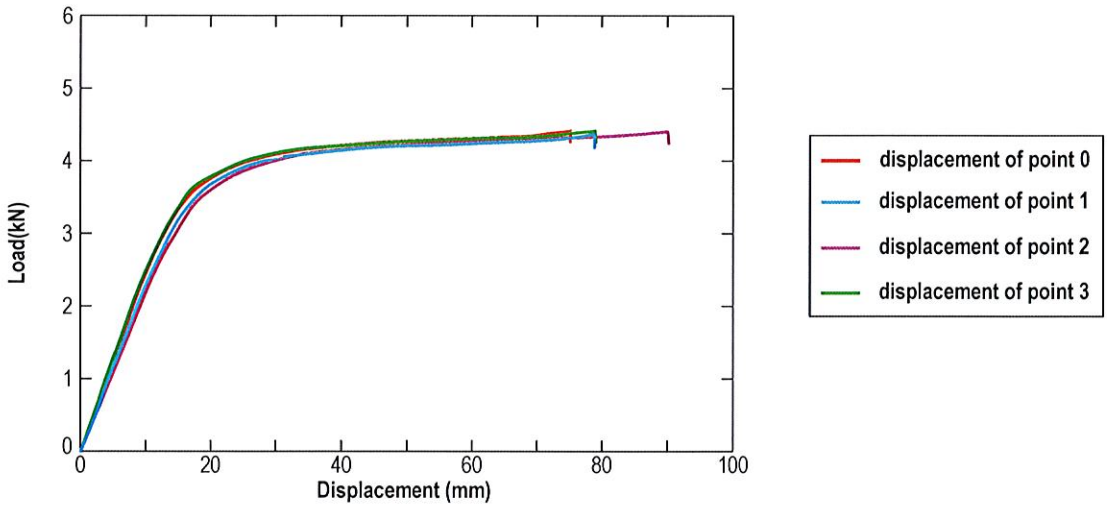


Figure 7: Deformed tubes after four point bending tests.





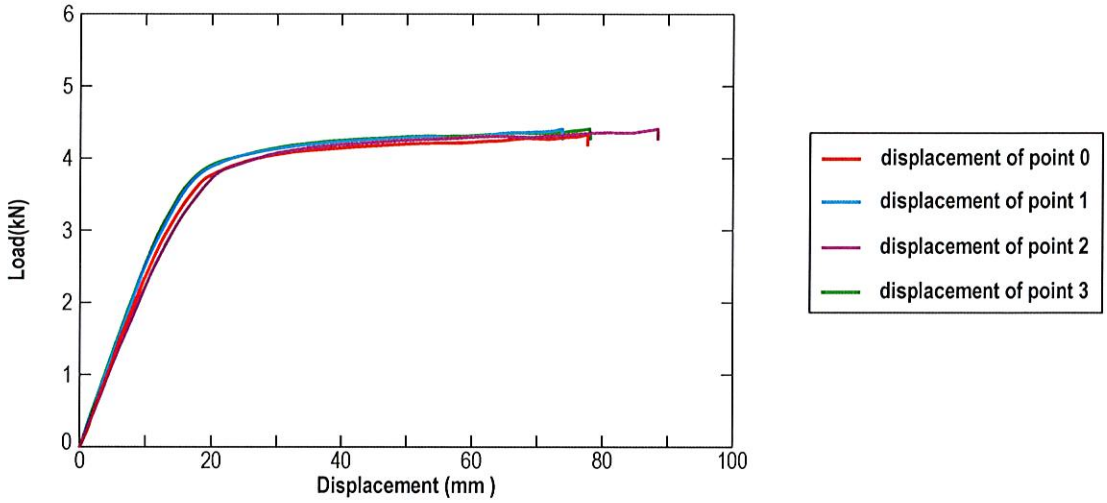


Figure 8: Load displacement curves for four point bending test on three samples of HSS 1.0"x1.0"x16ga.

Figure 8 contains curves for all three tested steel types. The curves represent the displacement of point d_i plotted against the exerted load.

CONCLUSIONS:

- Thin walled cross sections (like the ones used in other buses) should be avoided in the paratransit bus structure since they can buckle locally during bending.
- Compact cross sections (like the ones used by Turtle Top) do not buckle locally and thus they should be promoted among bus manufacturers as more efficient for the bus wall structures.

3.2 Connection bending tests

Crashworthiness of the bus structure during a side impact or rollover accidents depends substantially on its roof-to-wall and wall-to-floor connections. The strength limit of a connection should neither be reached by sudden elastic buckling of members nor by premature failure of welds or rivets. A well designed connection should exhibit an ability of high energy absorption which is only possible if yielding level in structural components is reached during bending tests.

In this test, a typical roof to wall or wall to floor connection is placed in the test apparatus as shown in Figure 9. The connection is clamped down to prevent the sample from moving during the test. An aluminum beam is mounted on the vertical section of the connection. This beam is at the location where a force will be applied to the connection, as well as where movement of the connection is tracked. With initial measurements taken, force begins to be applied to the connection using a hand winch connected to the beam though a steel cable. The magnitude of the force applied to the connection is measured with the use of a load cell located in the line with the loading cable. With the application of the load, the connection begins to deflect, which is measured with two displacement transducers on each side of the beam mounted to the sample. Forces and movements are measured until the connection sample exceeds a rotation of 45 degrees.

Using data acquired during the test, a graph showing the change in angle versus the applied moment is developed, which is a useful measure of the strength of a connection (compare Figure 12 and Figure 15).

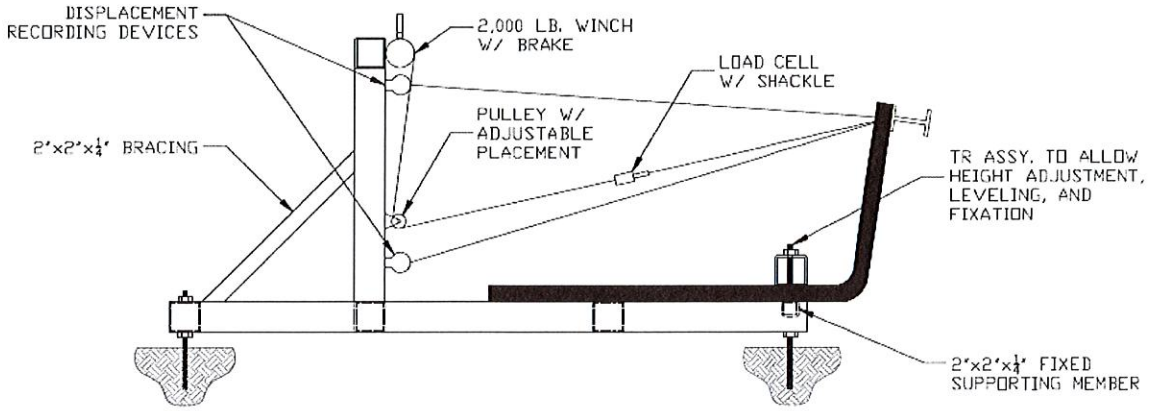


Figure 9: Test setup for connection tests.

3.2.1 Roof to wall connection

The connection testing of the two roof to wall connections provided was performed on April 17th, 2009. One sample was tested with a complete fiberglass shell skin, while the other sample was only the steel frame. The actual test setup is shown below as Figure 10. Each of the two roof to wall connections tested failed in a similar manner, as shown below in Figure 11. As shown in Figure 11, all plastic deformation is concentrated in the limited area of the connection between the cantrail beam and vertical portion of the roof members. The deformation in the developed plastic hinges is due to inelastic bending of the tube thin walls. The tube thin walls also contributed to the pull through of the cantrail.

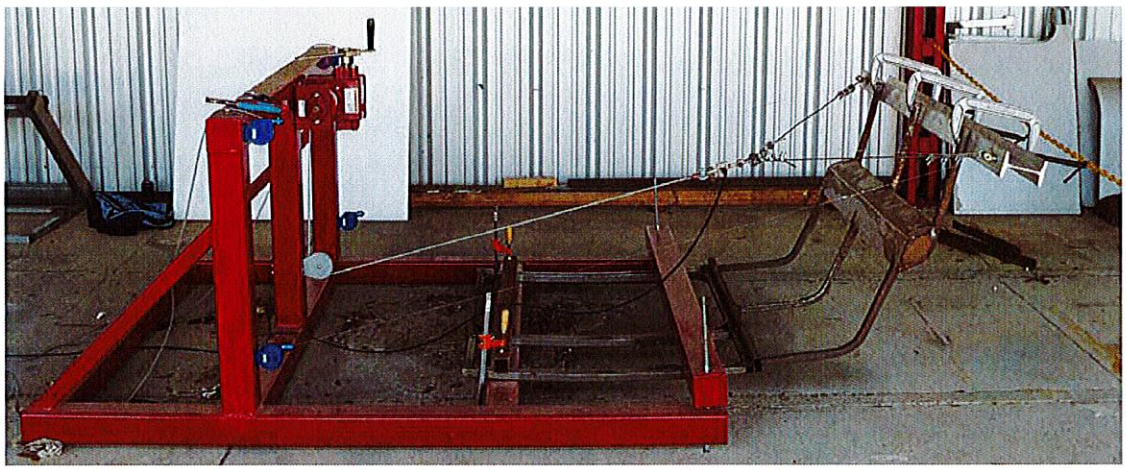


Figure 10: Test setup for roof to wall connection test.

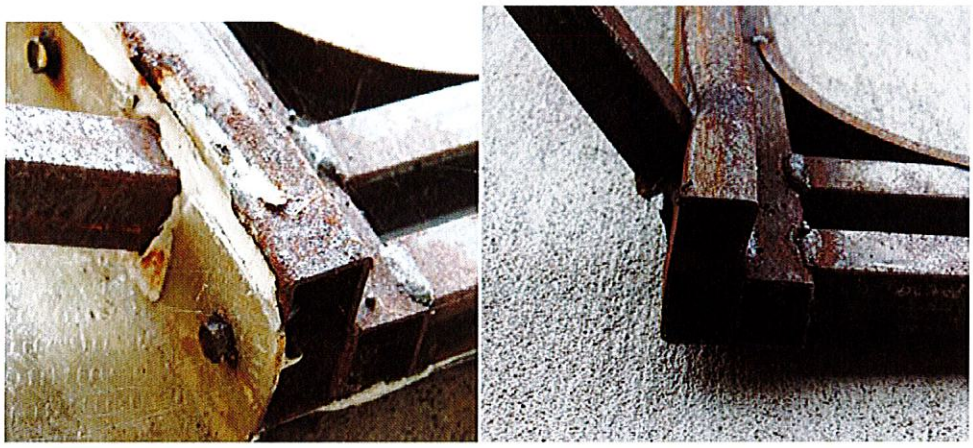


Figure 11: Mode of failure for roof to wall connections at vertical roof member.

Using data recorded with a data acquisition system, Figure 12 plots the experimental moment resisting capability of the two roof to wall connection samples tested vs. their change in angle. The maximum moment capacity for the skinned and shelled connection sample was 892 lb-ft (1,209 Nm) and 818 lb-ft (1,109 Nm) for the skinless sample. It also shows that the fiberglass shell contributes a slight strength increase to the roof to wall connection as it appears to help distribute forces more evenly along the cantrail as well as to brace the cantrail. This slightly different load path to the cantrail gave an increase in ultimate moment resisting capability of approximately 74 lb-ft (100 Nm).

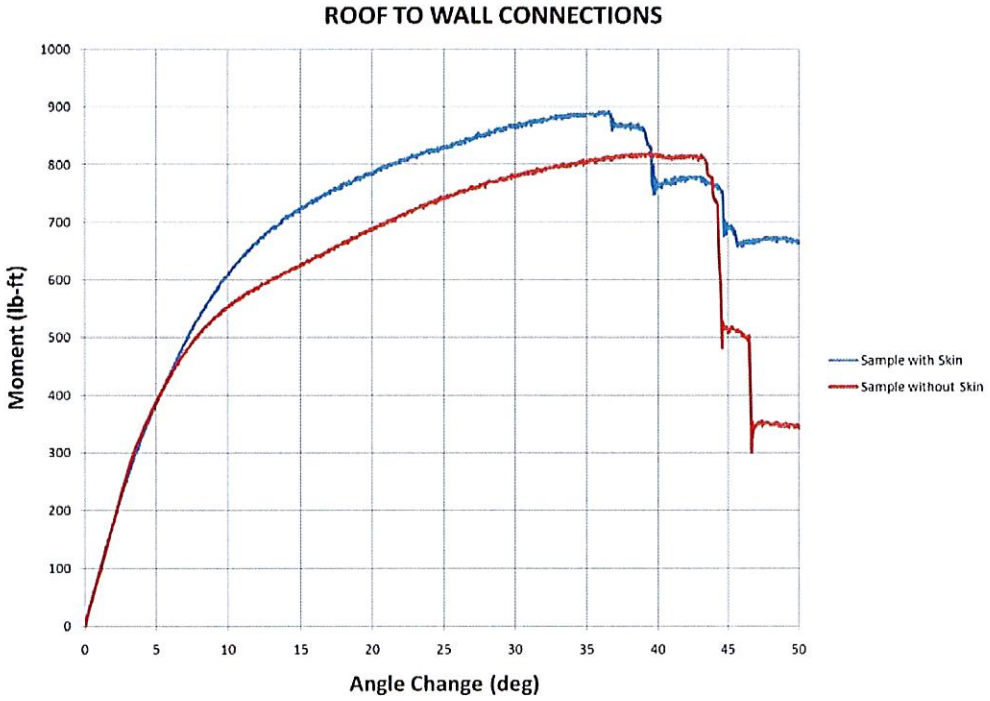


Figure 12: Experimental moment capacity of roof to wall connections.

3.2.2 Wall to floor connection

The connection testing of the two wall to floor connections provided was performed on July 7th, 2009. One samplewas tested as manufactured with skin and wood flooring, while the other sample was the steel frame only. Both samples showed similar failure modes as pictured in Figure 13. Although both samples failed similarly by pivoting around line welds, the sample with the skin and particle board flooring showed significantly higher moment resisting capabilities, which is discussed at the end of this section.

Figure 13: Mode of failure for wall to floor connections.

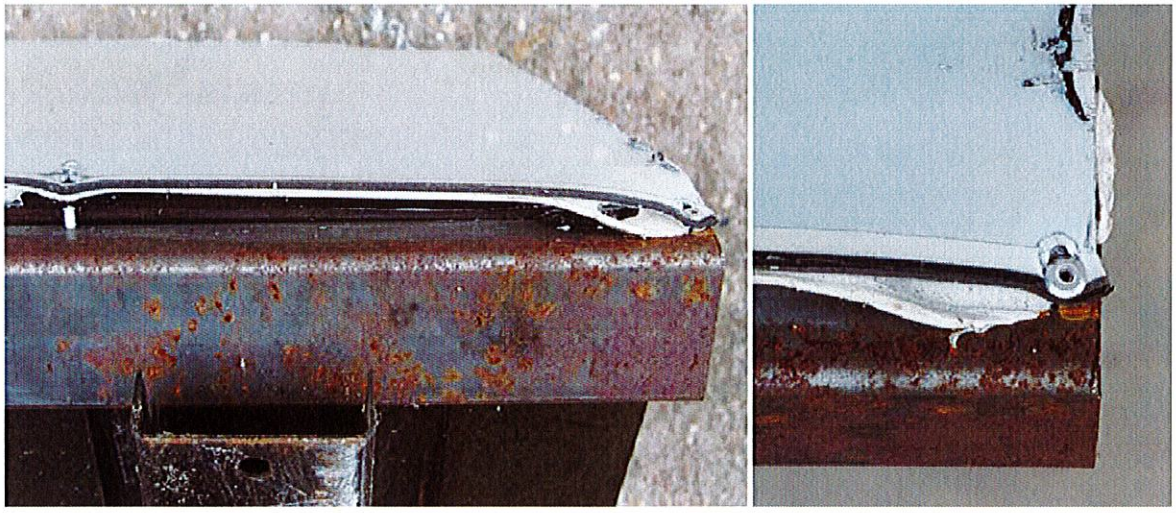


Figure 14: Localized damage to the skin as a result of testing.

Figure 15 presents the experimental moment resisting capabilities of the two wall-to-roof connection samples tested. The maximum moment capacity for the skinned connection sample was 1,190 lb-ft (1,613 Nm) and 119 lb-ft (161 Nm) for the skinless sample. In order for the sample with skin and flooring to pivot about the lines welds, it must crush the flooring, which attributed to the 1,071 lb-ft (1,452 Nm) increase in ultimate moment resisting capability. The sample without skin or flooring resisted the experimentally applied moment solely with the three single sided line welds. Pictured in Figure 14 is the damage done to the skin after the testing of the sample. Contrary to what Figure 14 appears to show, the skin on the sample provides minimal strength increase to the connection as it primarily provides another load path to the cantrail, which doesn't influence the crushing of the flooring.

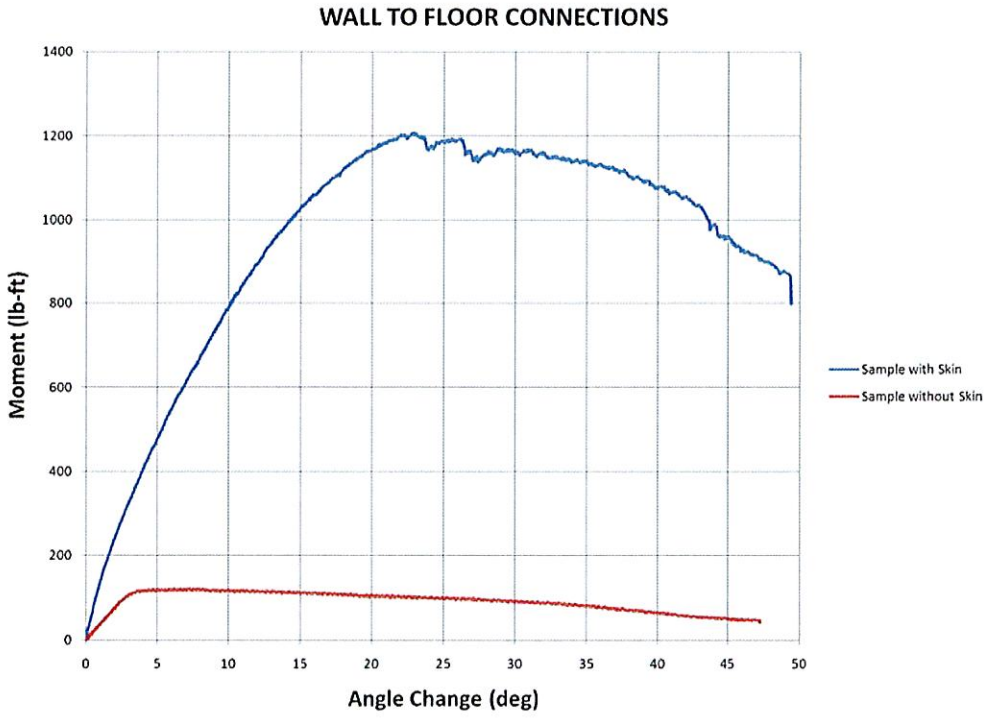


Figure 15: Experimental moment capacity of wall to roof connections.

CONCLUSIONS

- The tests revealed weak performance of the skinless wall to floor connection (see Figure 15)
- Additional welds on outside of the connection are recommended to improve the strength of the wall to floor connection (see Figure 3).

3.3 Side wall panel impact test

In this test, a typical sidewall assembly was placed in the impact hammer apparatus with the initial test conditions shown in Table 3 and Figure 16. The sidewall test assembly consists of the wall section from the cantrail to the floor level of the bus sidewall. With the test specimen resting on two 6 inch (150 mm)

diameter supports with variable span, the panel is impacted by a pivoting arm. The pivoting arm is comprised of a square impacting hammer with two perpendicular rectangular arms, which pivot freely about the axis of rotation. Prior to the test, the arm is raised to a pre-determined height with the use of a hand winch, and then released. The location of impact is determined by the midpoint of the average distance between the cantrail and floor level. Only the final deformation of the wall is recorded at the end of the test. The dimensions and the weight of the impacting device are listed in Table 3. The same drop height was used for both samples.

Table 3: Geometry of the panel and the impacting device.

Specification	
width of panels - a, in (mm)	47.25 (1,200)
length of panels - b, in (mm)	61.4 (1,559)
width of the hammer – A , in (mm)	96.5 (2,451)
cc length of the hammer arm – B, in (mm)	118.9 (3,020)
distance between the supports – C, in (mm)	56.9 (1,445)
mass of the hammer, lb (kg)	251.1 (113.9)

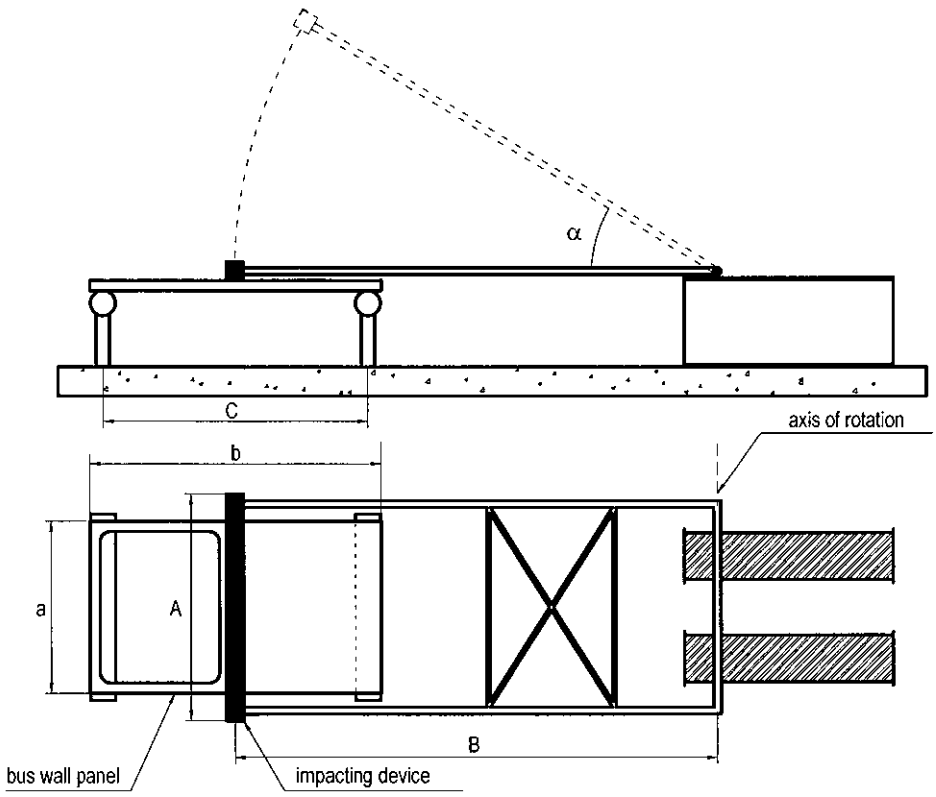


Figure 16: Test setup for impact hammer test.

The impact testing of the two wall sections provided was performed on the samples August 11th, 2009. Table 4 presents the final permanent deformation of the tested panels under the impact from the specified height. Figure 17 and Figure 18 show the final state of the skinless wall sample after being impacted with a drop height of 27.5 inches. Note that only the skinless wall sample is pictured below, as it is more difficult to see the slight permanent deformation in the skinned sample. Both: the sample with skin and the sample without exhibited similar performance. As pictured in the above referenced figures, the vertical columns were impacted and experienced very slight local deformation, causing minimal permanent deflection of the wall section.

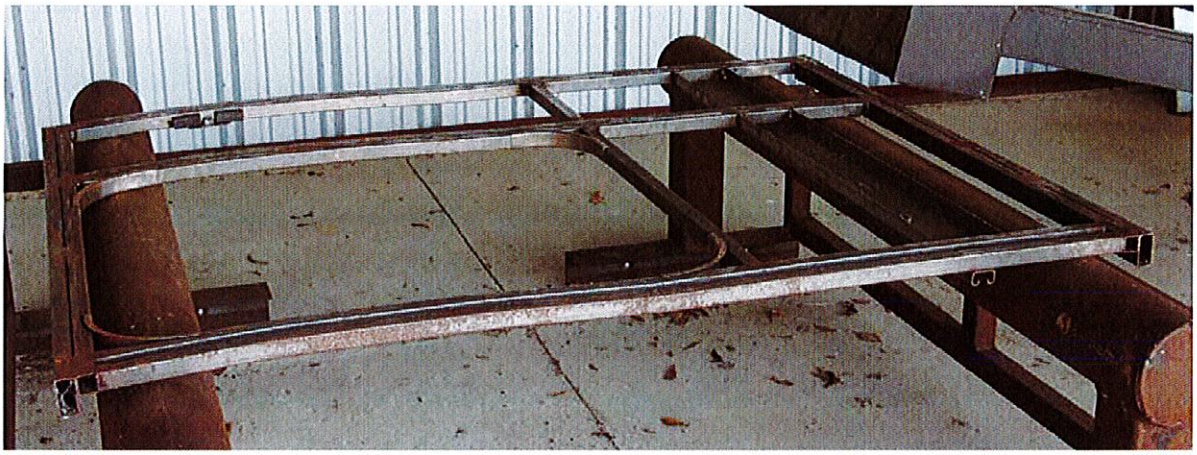


Figure 17: Slightly deformed skinless wall sample.

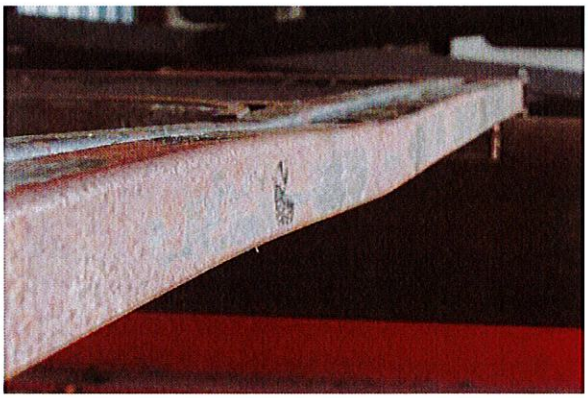


Figure 18: Close-up of slight local deformation in skinless wall sample.

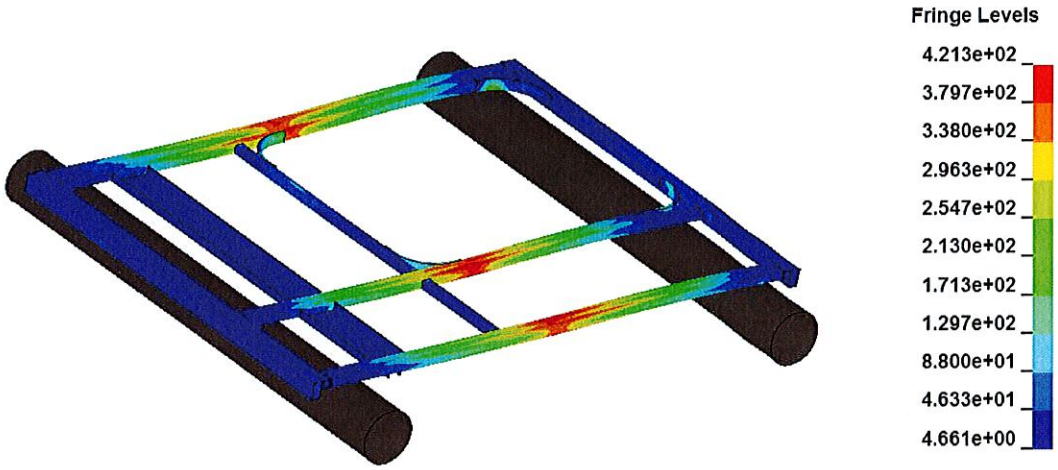


Figure 19: Effective stresses in skinless wall panel at instance of greatest deformation [MPa].

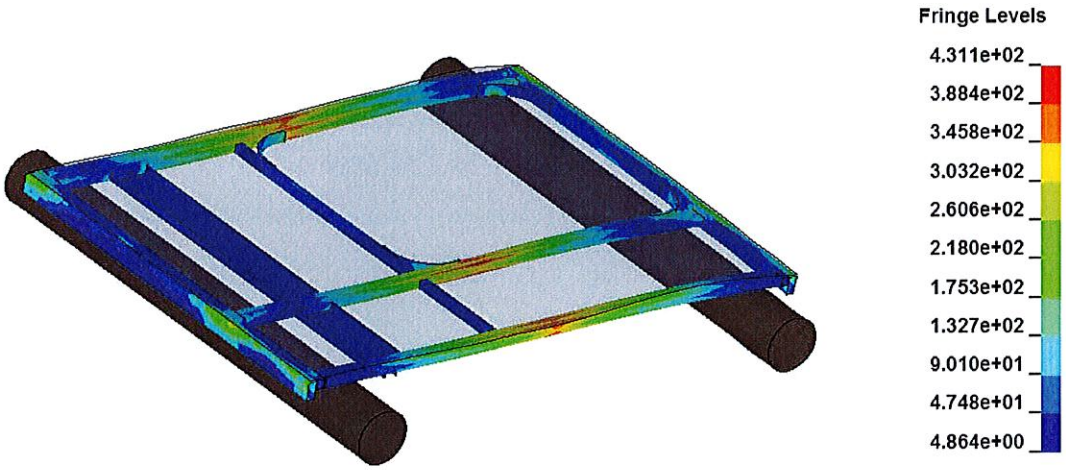


Figure 20: Effective stresses in skinned wall panel at instance of greatest deformation [MPa].

The skin provides an increase in the impact resisting capabilities of the sidewall samples, as it reduced the experimental final deformation by 0.4 inches (10.2 mm) as presented in Table 4 below. However, the skin in the tested panel was bolted into tubes only along two (top and bottom) edges. The tested samples performed well with more smaller continuous vertical members and their compact characteristics as stated in Section 4.1. It efficiently prevents local buckling of the sections and the development of plastic hinges in the panel. The developed FE models are presented in Figure 19 and Figure 20 graphically in addition to the numerical results located in Table 4.

Table 4: Deflections of the side wall panels.

	Drop height, in. (mm)	*Deflection in the experiment, in. (mm)*	*Deflection in FE model, in. (mm)*
Sample with Skin	27.5 (700)	1.1 (27.9)	0.9 (22.1)
Sample without Skin	27.5 (700)	1.5 (38.1)	1.1 (27.5)

CONCLUSIONS

- The tests revealed that the skin provides a slight increase in the impact resistance of the side wall panel (see Table 4)
- The use of multiple continuous compact tubes as vertical members in the construction of the side wall produce an efficient impact resisting assembly.

3.4 Center of gravity test

The center of gravity (CG) of the bus determines an unstable position and amount of kinetic energy in rollover tests. It indirectly influences the amount of energy absorbed by the structure during the deformation process. The measurement method used in this study is based on lifting a front axis of the bus with portable hydraulic lifts and measuring a change of weight distribution under rear axle. These measurements allow for determination of the CG location of the bus. The position of CG is defined by three parameters:

- longitudinal distance (l_1) from the centre line of front axle
- transverse distance (t) from the vertical longitudinal central plane of the vehicle
- vertical height (h_0) above the flat horizontal ground level when the tires are inflated as specified for the vehicle (see Figure 21 and Table 5)

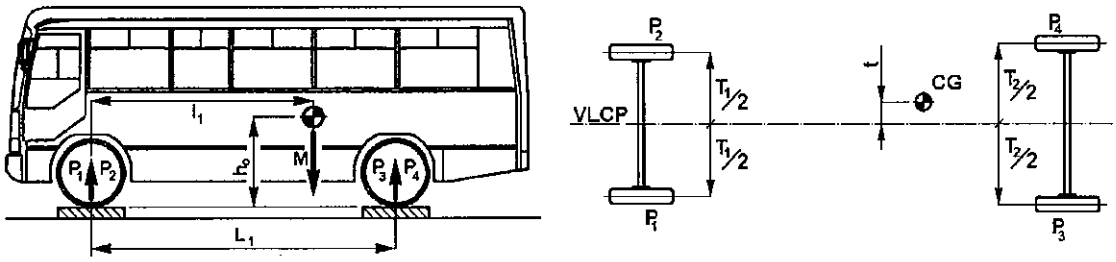


Figure 21: Location of center of gravity, [2].

The location of center of gravity is characterized by three parameters shown in the Table 5. Data from the FE model, and from a full scale CG test is included in the table. The actual Turtle Top bus was tested for CG as requested by the Turtle Top Bus Company.

Table 5: Center of gravity location in the FE model.

	FE model in (mm)	Full size CG test (mm)
l_1	81.9 (2079)	80.9 (2055)
t	1.1 (28)	- (-)
h_o	34.8 (885)	34.2 (867)

4. ROLLOVER TEST SIMULATION

The strength of the bus superstructure in rollover accidents is determined through a rollover test procedure [1, 2]. The procedure requires that a vehicle resting on a tilting table is slowly rotated on the weaker of its sides. When the CG reaches the critical position, gravitation causes a free falling off the bus into a ditch with a concrete floor placed 800 mm (31.5 in) beneath the tilt table horizontal position. The test setup is shown in Figure 22. The bus passes the test when no penetration into the residual space is observed during the deformation process (see Figure 23 for residual space definition, [1, 2]). Two cases were simulated for the bus with and without additional connections recommended in Section 1. For each case the mass of passengers was added to the model. The results for the bus structure with original connections are shown in Figure 24. Figure 25 presents results for the FE model of the bus with improved connections, detailed previously in this report. In both cases the bus structure passes the rollover test procedure - but for the improved structure the deformations are much smaller. This is especially apparent in the frontal part of the bus due to the effect of the stronger transition area.

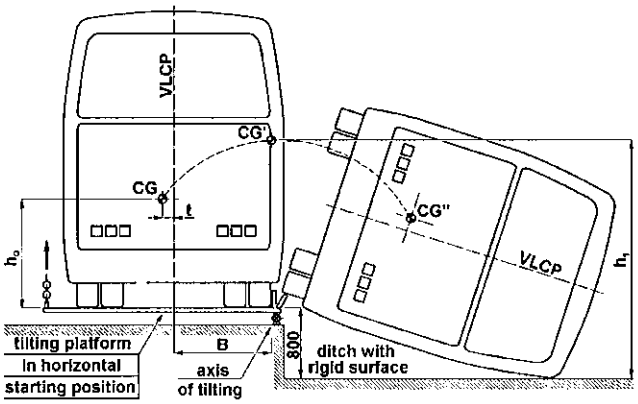


Figure 22: Rollover test setup [1, 2] (the dimensions are in millimeters).

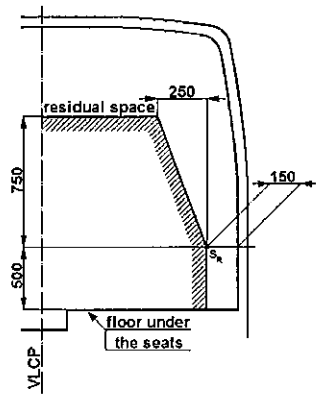


Figure 23: Residual space in bus cross-section [1, 2] (the dimensions are in millimeters).

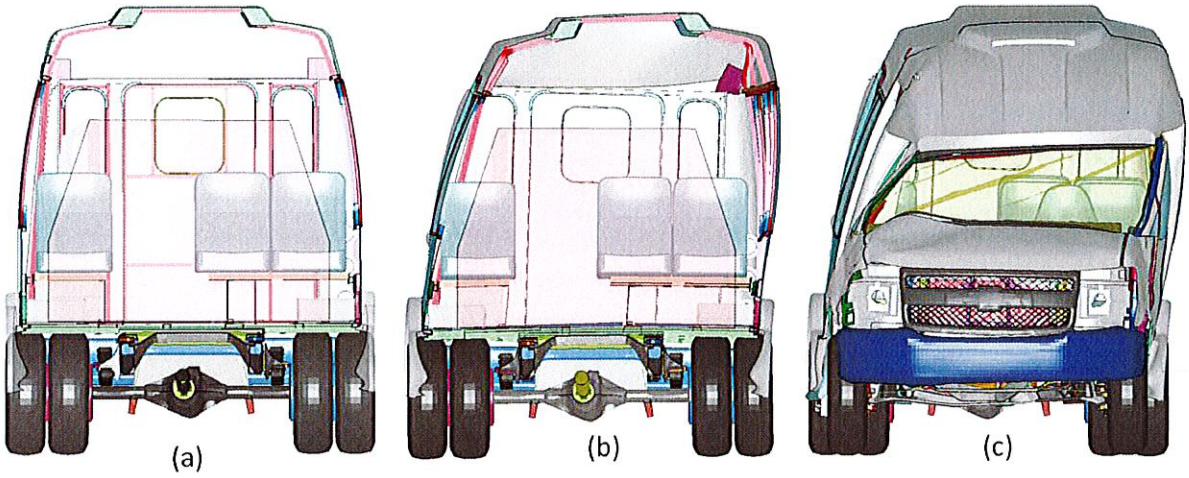


Figure 24: Deformation caused by simulated rollover test for the bus with original connections: (a) initial stage (b) deformed passenger compartment (c) exterior distortion of the bus.

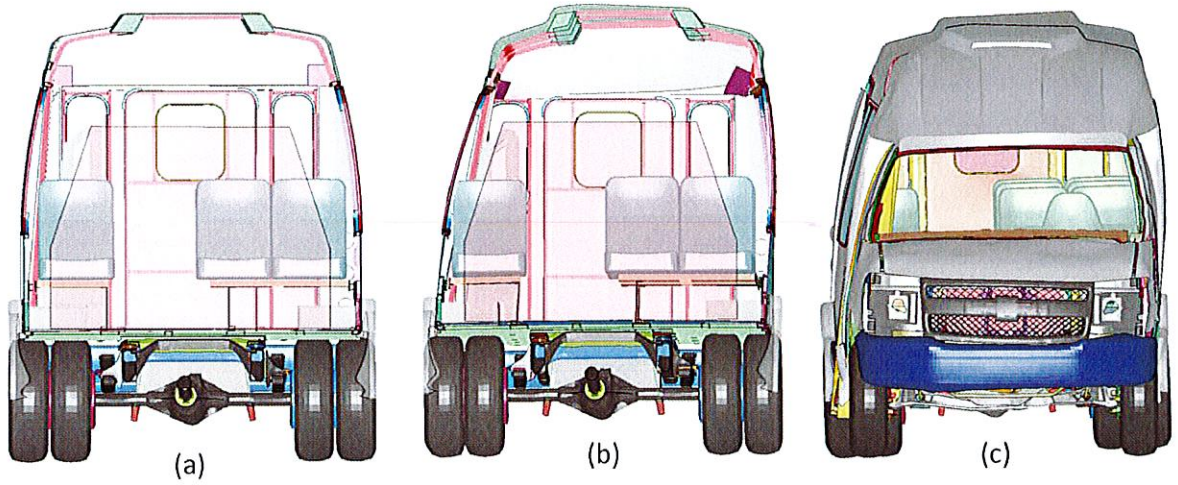


Figure 25: Deformation caused by simulated rollover test for the bus with improved connections: (a) initial stage (b) deformed passengers compartment (c) exterior distortion of the bus.

For original connection setup two rollover cases were investigated, rollover onto the curb side, and rollover onto the road side. As a result of these simulations the deformation indexes were calculated based on the equation given:

$$DI_{\alpha} = \frac{l}{400} \cdot \tan(\Delta\alpha_1) + \frac{(1250 - l)}{400} \cdot \tan(\Delta\alpha_2)$$

$$DI_{\alpha} = \frac{580}{400} \cdot \tan(\Delta\alpha_1) + \frac{(1250 - 580)}{400} \cdot \tan(\Delta\alpha_2)$$

$$DI_{\alpha} = 1.45 \cdot \tan(\Delta\alpha_1) + 1.675 \cdot \tan(\Delta\alpha_2)$$

Where:

l – is the distance between floor level and waistrail level,

α_1, α_2 – are the deformation angels.

Final results have been shown in Table 6.

Table 6 Deformation angles and deformation indexes for rollover tests.

Specification	*Rollover(curb side)*	*Rollover(road side)*
α_1	13.0	1.50
α_2	20.5	25.5
DI_{α}	0.96	0.83

CONCLUSIONS

- Turtle Top Terra Transport paratransit bus passes the computational rollover test procedure with mass of passengers added to the model for both the original and improved cases.
- The most deformation during the rollover test is in the front cap structure although the major impact is at the cantrail. A relatively weak front body structure (compared to the rest of the body) and weak connections between the bus body and the driver cabin is the reason for such behavior in the original bus.

5. SIDE IMPACT TEST SIMULATION

The test was conducted using the setup shown in Figure 26. The stationary Turtle Top bus is hit by the IIHS movable barrier (a barrier developed by the Insurance Institute for Highway Safety) with the mass of 1.54 tons and moving with the initial velocity of 48 km/h (30 mph). An open source FE model developed by the LSTC (Livermore Software Technology Corporation) was adopted for the computer simulations. The impact zone in the bus side wall was selected in such a way that the contact with doors, stairs, wheels and other parts stronger than regular side wall structure is limited.

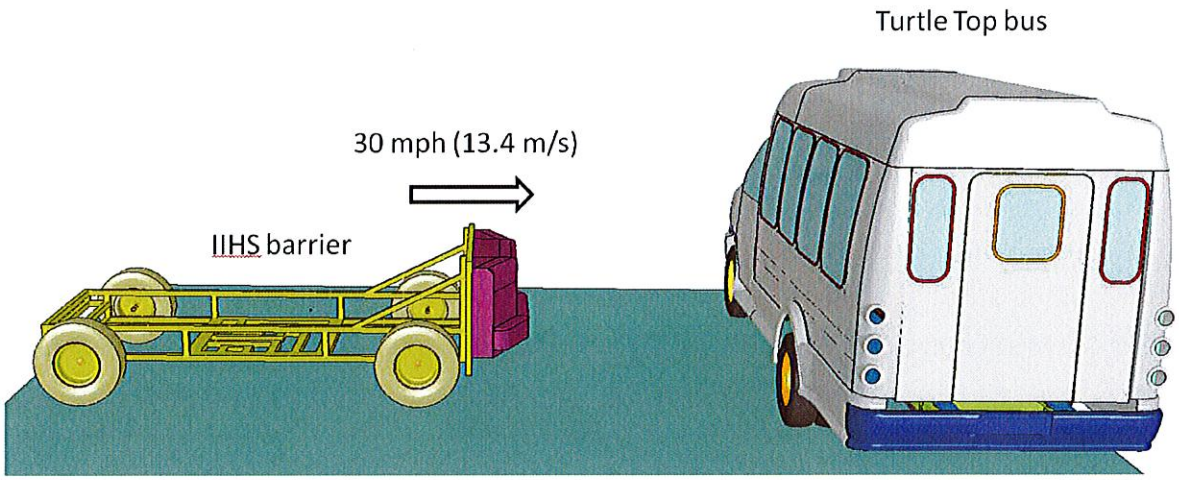


Figure 26: Side impact test initial conditions.

The numerical results of the test for both the original and improved structures are shown graphically in Figure 27 and Figure 28 . In both cases the residual space remains intact. The maximum permanent displacement of the bus's wall was 106 and 102 mm, for the original and improved bus respectivly. The added wall to floor connection spot welds and additional roof bow, have less effect on the bus performance during side impact than for the rollover test.

Figure 27: Final deformation of the bus body for the FE model without improved connections.

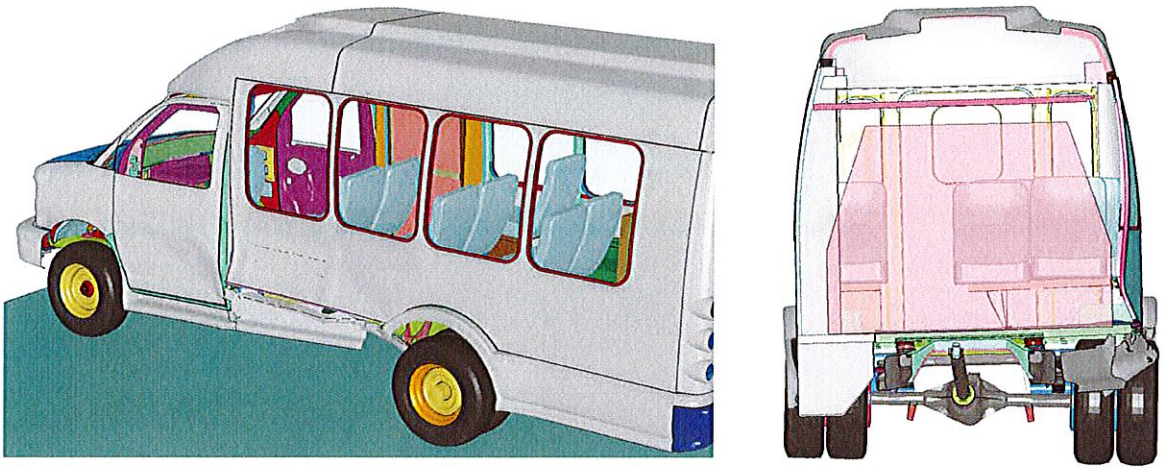


Figure 28: Final deformation of the bus body for the FE model with improved connections.

CONCLUSIONS

- The Turtle Top Terra Transport paratransit bus passes the side impact test procedure. Maximum intrusion inside the bus body was equal to 106 mm (4.2 in) whereas 150 mm (5.9 in) is admissible (see Figure 27).
- The public domain FE model of the IIHS barrier was used for the simulation of the impacting vehicle. The FDOT standard, in which the part dealing with the side impact is currently under revision, does not specify limit weight of the impacting vehicle. The IIHS barrier with mass 1.54 tons replaced in this study the Ford F250 pickup truck used previously. The Ford F250 pickup truck with mass of 3.00 tons which is recognized as one of the heaviest pickups. The type of impacting vehicle and the limit weight should be specified in the next version of the standard [1] based on further numerical studies and experimental validation.

6. REFERENCES

[1] Florida DOT: Crash and safety testing standard for paratransit buses acquired by the state of Florida. Rev. 2.01, August 10, 2007.

[2] United Nations; Strength of the superstructure of large passenger vehicles. Regulation 66. Revision 1. http://www.unece.org/trans/main/wp29/wp29regs/r066r1e.pdf, February 22, 2006, last access date: July 11, 2007.

[3] AISC, Steel Construction Manual. 13th ed, ed. AISC. 2005.

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 10 Section Number 2.7 Section Title Body Construction

Proposer's Request:

We request approval of the attached body specifications which meet all applicable commercial bus regulations.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: LaShaunda Drake Date: 6/8/20

Steel Frame Construction

Section 2

2.1 Steel frame construction consists of 11-gauge "U" shaped mounting rails that span the OEM chassis frame. 2"x3" 16-gauge tubes are space across the mounting rails and extend the full width of the body at approx. 22" intervals to form cross members.

2.2 OEM rubber isolator bushings are placed between the chassis frame and the "U" mounting rails bolted through the floor and torqued to specifications. The bushings provide a cushion between the frame and body, which allows the suspension and the frame to work independently of the body.

2.3 A drive shaft guard is welded at each drive shaft joint to the frame rails to lessen or eliminate the whipping action caused by a loose drive shaft in the event of a failure.

2.4 18-gauge galvanized steel heat shields are installed per Ford Qualified Vehicle Modifier (QVM) specifications to protect the body and OEM components from heat directly above the exhaust.

2.5 The vehicle will be equipped with a heavy-duty, corrosion resistant exhaust system. Attachment is through exhaust hangers and clamps attached to the component body. Routing configurations will vary depending on order content. The exhaust system meets OEM emissions requirements.

Steel Sidewall Construction **Section 3**

3.1 The sidewall construction consists of vertical 1" x 2" x 16-gauge steel wall tubes welded to a 1" x 2" x 16-gauge horizontal steel tube at the top and a 1" x 1" x 16-gauge steel tube at the bottom.

3.2 The window frame is completed by adding a 1"x1" 16-gauge tubes welded between the wall tubes and completed with pre-formed 1" x 18-gauge steel straps form the window radius corners.

3.3 Rolled 50,000 PSI 11-gauge steel seat track is welded to the 16-gauge steel tubes below the window openings. The seat frames are then bolted into track nuts placed in the seat track and torqued to specifications.

3.4 The entire sidewall assembly is welded to the 2" x 2" x 11-gauge perimeter floor angle.

3.6 The rear wall construction framework consists of welded 1" x 1" x 16-gauge steel tubing and 1" x 2" x 16-gauge steel tubing which includes openings for a rear egress window or optional rear door(s).

Steel Roof Construction **Section 4**

4.1 Attached to the top sidewall rail construction are formed roof bows. These are made of 1" x 1" x 16-gauge steel, formed to match the roof contour. The roof bows are welded to the 1" x 2" x 16-gauge top sidewall tubes from front to rear of the body assembly. There is a double bow at the front of the cage assembly and a triple roof bow at the rear of the cage assembly added in for additional strength. Angled stringers are welded in strategic locations to provide additional strength.

4.2. The front of the ceiling includes an additional vehicle support called the "super bow". This assembly is two formed roof bows encased by a formed 11-gauge plate, welded in the same manner as the rest of the vehicle bows. The combination of these systems allows for superior roof structure strength.

Floor Construction

Section 5

5.1 The floor framework is constructed of a perimeter of 2" x 2" x 11-gauge steel angle. This angle boxes each side of the floor, and is welded to the end of each cross-member. The wheel well sections are made with 14-gauge steel plate.

5.2 A 1" x 4 1/2" x 1" x 14-gauge steel channel is inverted and runs the full length of the floor approximately 29" in from both the driver side and passenger side. This channel is placed on the centerline of the seat track position for seat frame attachment. Rolled 50,000 PSI steel seat track is welded to these channels every 4", staggered per side. The seat frames are then bolted into track nuts placed in the seat track and torqued to specifications.

5.3 A 1" x 2" x 1" x 14-gauge steel channel is inverted and runs the full length of the floor to support the passenger aisle. This channel is also welded longitudinally between each frame rail, where necessary, to give added support to the flooring material. Additional steel plate may be added for vehicles requiring floor supported hardware in use for options. Additional support may also be needed for perimeter mounted seating and paratransit equipment and luggage equipment.

5.4 The entrance door step pan assembly consists of an 11-gauge steel step pan treads and risers with steel front and rear 14-gauge side jamb panels braced with 1" x 1" x 16-gauge steel tubing and a steel door header plate.

5.5 The steel floor framework is then overlaid with 19/32" pine plywood panel. It is cut to width in order to reduce seams. The wood panel is attached to the floor structure with a minimum ¼" bead of construction adhesive applied to the surface of all steel structures. Additionally, bugle head screws are placed at a minimum of every 12" along all edges and within the floor decking. A second additional layer of lauan is adhered on top of the plywood sub-floor with construction adhesive.

5.6 At the end of the construction process when all components have been attached to the underside of the floor, the perimeter joints and all other joints are sealed with Foamsulate™ expanding-type foam resin sealant prior to undercoating.

Cage to Body Mounting

Section 6

6.1 The steel cage construction is attached to the cab using cage to cab braces and steel tubing. This assembly consists of vertical and horizontal welded steel tubes as a roll cage with the vehicle cab and as channel assemblies to attach the vehicle cab to the cage welded on one end and "huck" riveted on the other end.

6.2 A channel floor assembly is attached to the component body floor. This assembly is a 2" x 2" x 11-gauge steel angle designed to join the component body floor and cap.

Attachment to the floor of the cab is accomplished through "huck" rivets and angled welded support tubes.

External Body

Section 7

7.1 Crane Composites Nobel® Select Exterior Sidewall Panels are used for the external body sidewalls. The composite material is a high gloss, exterior, gel-coated panel with UV protection and environmental properties. The external body consists of two individual panels, which facilitate and simplify the repair and/or replacement of any damaged panels.

7.2 Before the body panels are attached to the steel cage construction after the primer has been applied and dried, a ¼" V-bead of Manus-Bond, a high-strength bonding adhesive/sealant, is applied to the steel cage to bond the composite panel to the steel. After the adhesive is applied, the composite panel is attached to the steel cage construction and secured with 1/8" pop rivets along the perimeter of each panel. After the body panels are secured in place the window openings are routed out and removed. A drip rail gutter the length of the sidewall body panel is added with waterproof rivets above the window cutouts.

7.3 The sidewalls are insulated with closed cellofoam 1" type **#1** density EPS expanded polystyrene. The insulation provides high-quality sound deadening and temperature control properties.

7.4 Crane Composites Nobel® Choice Exterior Sidewall Panels comprise the lower body panels. The skirting is braced on the backside of the skirt to the steel cross-members using braces and rivets. The seam between the body panels and skirts is sealed with Loctite® 5510 adhesive. A 2" aluminum retainer trim is screwed into place with exterior perimeter fasteners over the seam created by the sidewall material and skirt joint. A cosmetic paintable vinyl seal trim covers the retainer trim and fasteners.

7.5 Wheel flairs are made of white TPO paintable material attached with Manus-Bond and rivets.

7.6 The front cap is constructed of durable reinforced fiberglass and is a one-piece assembly, built for strength. The cap is attached to the vehicle cab and the superbow roof assembly with Loctite® 5510 adhesive and 1" aluminum retainer trim screwed into place over the seam and capped off with a paintable vinyl cover for cosmetic appeal. The transitions (from body to cab) are attached in the same method and bolted to the roof cap.

7.7 The rear cap is constructed of durable reinforced fiberglass is a one-piece assembly, built for strength. It is attached to the rear wall and cage assembly with Loctite® 5510 adhesive and 1" retainer trim screwed into place over the seam and capped off with a paintable vinyl cover for cosmetic appeal.

7.8 The body roof is a one-piece TekModo CosmoLite Ruggedized Commercial Roof Membrane. The roof membrane follows the curve of the roof bows and overlaps the top of the sidewalls. This seamless one-piece roof design minimizes the potential for leaks.

Bumpers and Mud Flaps

Section 8

8.1 The vehicle is equipped with the chassis manufacturers' standard front bumper.

8.2 The standard rear bumper is a heavy duty power-coated steel assembly. Mounting is achieved through steel bracket assemblies attached directly to the vehicle frame extension. A rear Romeo RIM HELP® bumper is available as an option.

8.3 The vehicle is supplied with Turtle Top rear mud flaps installed with supports.

Ceiling and Sidewalls

Section 9

9.1 The interior ceiling and sidewalls are one-piece assemblies consisting of Crane Composites Filon® Smooth Flexroof. It is a smooth gel-coated finished fiberglass reinforced polyester (FRP) resin material with a smooth cleanable surface that is stain and scratch resistant. The material is adhered to the interior surface of the roof bows using 3/8" rivets at each ceiling bow and is joined at the center with the aluminum light extrusion. The material bends downward from the ceiling to the sidewalls at the upper corners of the bus to the top of the wall seat track. Sidewalls and the rear wall are adhered to the structure into the wall bows with 3/8" rivets and the window trim rings help to hold the interior wall material in place. Below the wall seat track (if bus style seats are installed) to the floor is the same material attached as the ceiling and sidewalls.

9.2 Vinyl ceiling and sidewall material is available as an option.

Floor Covering

Section 10

10.1 Industrial contact adhesive is applied to the plywood panel sub-flooring and black industrial grade R.C.A. Rubber Transit-Flor® flooring prior to mating the rubber to the plywood panel sub-floor material. The rubber flooring material is smooth with a ribbed aisle. Optional colors of rubber flooring are available as well as Altro brand flooring.

10.2 The entrance step-well treads are ribbed rubber and include color contrasted metal reinforced rubber step tread nosing edges. The step nosings are installed with adhesive and #8 x 3/4" zinc screws. Smooth rubber is installed on the step risers.

Stanchions, Grab Rails and Barrier Panels

Section 11

11.1 The stanchions and grab rails are manufactured by ASC Industries of 1¼" OD high grade, low carbon type 304 stainless steel clad tubing. Where possible, the stanchions are bent or welded to eliminate fasters. An angled hand rail is installed at the left of the entrance door. Additional entry grab handles and ceiling overhead grab rails are available as well as colors and covers.

11.2 Modesty barrier panels are standard on the passenger side just rearward of the entrance door. The modesty barrier panel is made of stanchion material and vinyl/fabric covered foam padded ½" plywood. The driver's side modesty panel is optional and can include an optional plexiglass driver barrier shield.

11.3 All stanchions, grab bars, passenger assist devices, and barriers comply with all applicable ADA requirements for strength and placement.

Entrance Doors

Section 12

12.1 Driver cab door and co-pilot cab door delete and co-pilot seat delete is standard for the in-cab front passenger bi-fold entrance doors. The commercial style bi-fold entrance door panels are from A & M Systems. The door systems is an electrically operated opening/closing door system which is driver controlled through the switch panel.

12.2 Doors are corrosion resistance through the use of aluminum, stainless and zinc plated components. Doors are clear coat anodized finish and door leaf glass panels are tempered AS2 tinted glass.

12.3 Torque arms are located on the upper hinges. Doors have radius edges on the hinged side to ensure proper mating to the vertical seal and to prevent air and moisture from entering the door entrance when closed. The edges of the doors have a flexible rubber safety seal which seals the door area from weather and air infiltration. It will also prevent serious injury if someone should inadvertently be caught in the closing of the door.

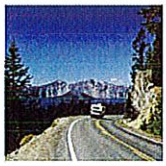
12.4 The optional in-body side passenger bi-fold entrance doors are built to the same specifications as the in-cab front passenger bi-fold entrance doors. The chassis driver and co-pilot cab doors are retained as well as the cab co-pilot passenger seat.

12.5 A manually operated door controller is optional. An optional single "sedan" style recreational vehicle manual door with or without window is also available.

NOBLE™ Select

All-Composite Wood-Free Panel

fiberglass reinforced plastic
EXTERIOR SHEET GLASS SIDEWALL PANELS

GIVE THEM MORE OF WHAT THEY RV FOR.

An all-composite, wood-free exterior panel with superior surface and weathering performance. Noble Select is designed for both laminated and free-hung wall applications and is preferred where full-body paint is required.

- No wood fibers, 100% formaldehyde free
- Superior gel-coat for paints and graphics
- High Strength and durability to withstand extreme weather and road conditions
- Up to 20% lighter than wood-backed sidewalls

CRANE Composites
GENUINE FIBERGLASS

ADDITIONAL INFORMATION IS AVAILABLE ON OUR WEBSITE

Physical Properties (#65143)
Care and Maintenance (#6998)
Repair Guide (#7005)
Material Safety Data Sheet (#7042)

www.CCIRV.com
1.800.435.0080 | 1.815.467.0080 | 1.815.467.8666 fax
Form 7043 Rev. 2 | (5258)

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 10 Section Number 2.7.i.6 Section Title Window Size

Proposer's Request:

Please accept standard window size of 30" x 36" keeping in mind that steel surround meets the specified language. 24" x 30" is specific to one manufacturer only.

Type text here

The District's Response:

Approved: Denied: X Noted: See Addendum: #2

Comments: The District prefer 24"x30" window to do not compromise the construction of the wall.

Procurement Officer: Shaunda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 10 Section Number 2.7.g.3 Section Title WC Door Frame

Proposer's Request:

We request approval of aluminum tube door frame as stainless steel is not available from the door manufacturers.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Shaunda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 13 Section Number 2.7.l.2 Section Title Seat Mounting

Proposer's Request:

Specification refers to seat track on floor and then states seats must be bolted to floor. Please clarify that seat track is acceptable as this cannot be changed to an untested method and there is only one manufacturer that bolts seats directly to the floor.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments: Bolted seat on Body on Chassis

Procurement Officer: LaTaunda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 22 Section Number 2.13 Section Title Paint

Proposer's Request:

We request approval of standard Akzo Noble paint in lieu of the specified DuPont. Our paint shop is a certified AN paint facility and cannot spray a different type. Please see attached.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Samanda Drake Date: 6/8/20

sikkens

LV650
Basecoat/Topcoat

Features

- One system for all your needs
- HAPS Compliant
- Thousands of colors available
- More robust system
- High solids

Benefits

- Product assortment reduction, less inventory
- Meets all current environmental regulations
- More OE and Fleet color capabilities including metallics and pearls
- Superior sag resistance and improved results in hot and humid conditions
- Better coverage with only a cross coat application results in increased productivity

Autocoat® BT LV650 is latest innovation for the commercial market. The product, a multi-generational upgrade to the popular Autocoat LV, utilizes the same set of toners for both base clear and single stage systems. This capability was added in an effort to help businesses better manage their inventory. It also provides maximum application flexibility. LV650 was specifically designed to be used in either OE or repair markets. In either situation it enables commercial businesses to minimize inventory by providing one system for all application needs.

For more information about Autocoat BT LV650 Sealer or any other Autocoat BT products, contact your AkzoNobel Representative, visit **www.sikkenscv.com**, call **1-800-618-1010** or contact any AkzoNobel Distributor.

Autocoat BT

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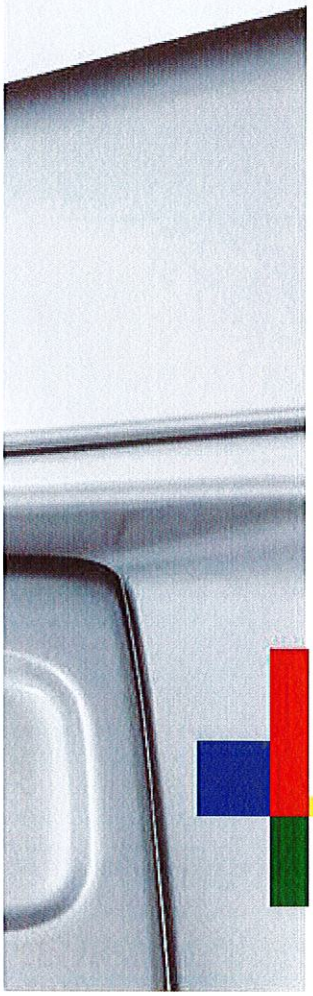
Autocoat® BT LV650 Clear

LV650 Clear Anti-Graffiti



Features

- Low VOC
- Easy application
- Excellent flow and leveling
- Fast air dry capability
- Hardness after bake
- Improved mar resistance
- Easy anti-graffiti option

Benefits

- VOC of 3.5 lbs/gal or 2.1 lbs/gal meets current environmental regulations
- User friendly, less time in the booth
- Goes on smooth – reduces the need to flat sand and polish
- Dust free in 30 minutes, dry to handle in 1 hour
- Faster drying means quicker throughput
- More durable, reduced handling damage
- Only substiture the reduce toachieve anti-graffiti properties

Autocoat® BT LV650 Clear is a two-component VOC compliant clear coat specifically designed for original equipment and repairs for commercial vehicles. The ready to spray VOC is <3.5 lbs/gal when reduced with the LV650 Reducers or <2.1 lbs/gal when reduced with the LV650 Exempt Reducer.

LV650 Clear provides easy application and excellent flow on large objects making it the perfect clear for Builder OE and Fleet shops. Easy application and fast drying does not mean you have to sacrifice performance. LV650 Clear offers superior gloss and durability to ensure high quality results time after time.

For more information about Autocoat BT LV650 Clear or any other Autocoat BT products, contact your AkzoNobel Representative, visit **ww.sikkenscv.com** or call **1-800-618-1010.**

Autocoat BT

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Autocoat® BT LV260 Epoxy Primer

Features

- Low VOC, HAPS free
- High solids
- Great adhesion over multiple substrates
- Can be topcoated with Autocoat BT LV650 or LV451

Benefits

- < 3.5 VOC
- Better coverage results in increased productivity
- Excellent corrosion protection
- Use with multiple topcoats means fewer primer SKUs

Autocoat® BT LV260 Epoxy Primer is a two-component high solids, low VOC, HAPs free epoxy pimer. Available in buff or gray, LV260 exhibits fast drying times with excellent corrosion protection over multiple substrates. LV260 can be applied in several methods. It can be applied as a wet on wet, non-sanded primer sealer. Working with aluminum? LV260 is the ideal primer-sealer over sanded aluminum. Need a primer for blasted steel? LV260 also performs as a high build primer over blasted steel. With all these capabilities, it is easy to see that LV260 offers a shop maximum versatility while minimizing inventory.

LV260 can be topcoated with any Autocoat BT topcoat including LV650 and LV451.

For more information about Autocoat BT LV260, contact your AkzoNobel Representative, visit **www.sikkenscv.com** or call **1-800-618-1010.**

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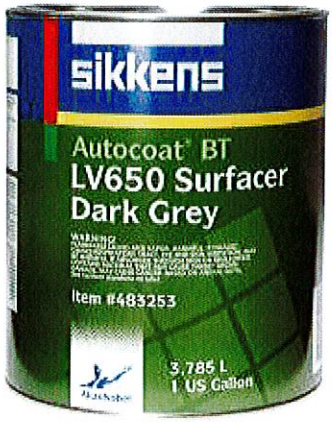

Autocoat® BT
LV650 Surfacer

Features

- High build
- Excellent sandability
- Double coat application
- Robust application
- Fast air dry time
- Common hardener

Benefits

- Easy to cover surface defects, fewer pinhole defects when applied over plastic fillers
- Powders up easily, less sandpaper waste, increased productivity
- Achieve film build quickly with minimum flash time between coats, increased productivity
- Superior sag resistance
- Increased throughput
- Less inventory, easier mixing

Sikkens Autocoat® BT LV650 Surfacer is a two-component, high solids urethane surfacer. It provides high build, excellent sanding properties and an extra smooth finish when sanded. The ready to spray VOC is 3.5 lbs/gal when reduced with the LV650 Reducers or 2.8 lbs/gal when reduced with the LV650 Exempt Reducer.

LV650 Surfacer is all about productivity. Its high film build covers surface defects quickly without the worry of sagging. The excellent sanding properties results in less sandpaper waste and faster throughput. LV650 Surfacer shares a common hardener with the rest of the LV650 product line meaning less inventory is needed.

For more information about Autocoat BT LV650 Surfacer or any other Autocoat BT products, contact your AkzoNobel Representative, visit **www.sikkenscv.com**, call **1-800-618-1010** or contact any AkzoNobel Distributor.

Autocoat BT

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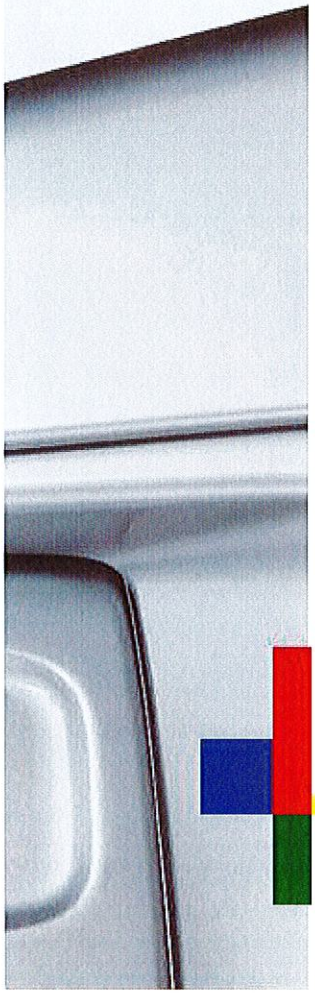
Autocoat® BT
LV650 Sealer

Features

- Quick dust free dry time
- Smooth appearance
- Common hardener

Benefits

- Flatter finish, eggshells quickly, less trash and surface defects
- Less orange peel, A-Class foundation for an A-Class finish
- Less inventory, easier mixing



Sikkens Autocoat® BT LV650 Sealer is a two-component, high solids wet-on-wet urethane sealer that is available in a light grey or buff color. It can be applied at a ready to spray VOC of 3.5 lbs/gal or 2.8 lbs/gal depending on reducer selection.

LV650 Sealer has quick dust free dry time which reduces the chances of dust and dirt causing surface defects during drying, resulting in fewer reworks and increased throughput. It offers excellent flow and leveling on large objects making it the perfect sealer for Builder OE facilities. Since LV650 Sealer is tintable with Autocoat BT Toners, it offers even more flexibility as the foundation for an A-Class finish.

For more information about Autocoat BT LV650 Sealer or any other Autocoat BT products, contact your AkzoNobel Representative, visit **www.sikkenscv.com**, call **1-800-618-1010** or contact any AkzoNobel Distributor.

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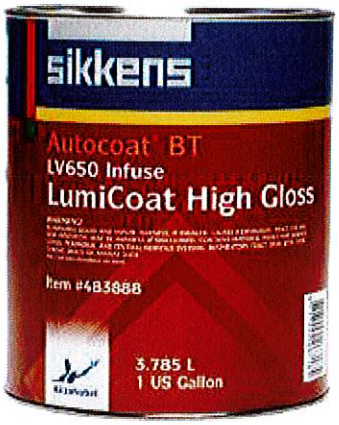

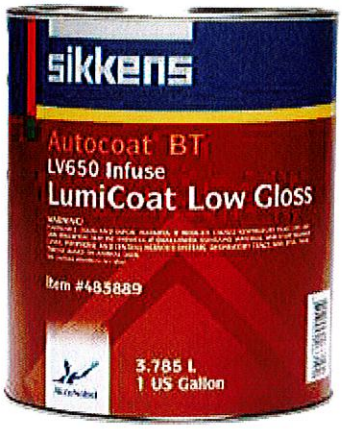

Autocoat® BT LV650 Infuse LumiCoat

Features	Benefits
Brilliant appearance	• Enhance your coatings appeal with reflectance • Illuminate parts in dark or poorly visible environments • Even distribution of reflective particles • Smooth, class A finish
Two layer PU systems	• Unlimited color combinations • Exterior commercial OE durability
Two gloss levels	• Gloss or non-glare appearance
Application friendly	• Use with HVLP or typical OE application equipment • Cross coat application • Wet-on-wet application with LV650 products
Environmentally friendly	• High solids, less paint usage • <3.5 lbs/gal and HAPs compliant

Sikkens Autocoat® BT LV650 Infuse LumiCoat is a final finish polyurethane (PU) topcoat that offers the ability to add reflectance or brilliance to any Autocoat BT LV650 color. LumiCoat is user friendly and can be applied over any LV650 basecoat/topcoat, Infuse FormCoat or Infuse SpeckCoat.

Infuse LumiCoat was engineered to provide Commercial OE performance and quality right out of the can. Whether you need it for safety features or you just want to add some brilliance to your work, LV650 Infuse LumiCoat is the best choice to let your creativity sparkle.

For more information about Autocoat BT LV650 Infuse LumiCoat or any other Autocoat BT products, contact your AkzoNobel Representative, visit www.sikkenscv.com, call **1-800-618-1010** or contact any AkzoNobel Distributor.

If you can think it...Infuse it.

Autocoat BT

AkzoNobel

Typical Test Results

	Adhesion	Pencil Hardness	WOM	Humidity	Water Soak	Salt Spray	Chip Resistance
	ASTM D3359	ASTM D3363	SAE J2527	ASTM D2247	ASTM D870	ASTM B117	ASTM D3170
	X-scribe / Cross-hatch		3000hrs	500hrs	72hrs x 100°F	500hrs	-20°F
LumiCoat High Gloss	100%	≥ HB	<1.5 ΔE_{cmc} >90% gloss retain	Pass	Pass	Pass	Pass
LumiCoat Low Gloss	100%	H – 2H	<1.5 ΔE_{cmc} >90% gloss retain	Pass	Pass	Pass	Pass

	MEK	Battery Acid	Anti-Freeze	Diesel	Hydrau-lic Fluid	Motor Oil	M600	Salt Water	Trans-mission Fluid
		ASTM D1308 24 hour spot @ Room Temperature							
LumiCoat High Gloss	No effect (50 double rubs)	No effect	No effect	No effect	No effect	No effect	No effect	No effect	No effect
LumiCoat Low Gloss	No effect (25 double rubs)	No effect	No effect	No effect	No effect	No effect	No effect	No effect	No effect

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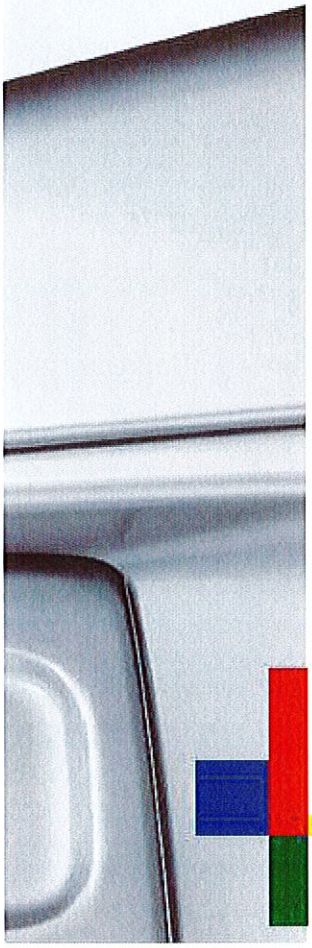
Autocoat® BT LV650 Infuse FormCoat



Features	Benefits
Texture coating	• Engineered to give uniform part to part texture look • Texture density hides many surface imperfections • Durable protection against scratch and mar defects
Utilize with BT Toners	• Thousands of FormCoat formulas available in MixIt • Excellent exterior color durability
Multiple texture sizes	• Texture range from functional to aesthetic
Application friendly	• Use with HVLP pressure feed or gravity (2.2mm tip) • Easy 4:1 mix ratio with LV650 Hardener • Wet-on-wet application with LV650 products
Environmentally friendly	• High solids, less paint usage • <3.5 lbs/gal and HAPs compliant

Sikkens Autocoat® BT LV650 Infuse FormCoat is a low gloss, two-component polyurethane coating that offers the ability to add a range of texture to any Autocoat BT LV650 color. FormCoat can be used to hide imperfections, add durability and to improve uniformity of appearance over multiple substrates. It comes in two sizes, so you can match the right texture for the job.

Since it is part of the Autocoat BT family, FormCoat shares common hardeners and utilizes the current Autocoat BT toners. This allows for more flexibility while keeping inventory levels low.

Infuse FormCoat was engineered to provide Commercial OE performance and quality right out of the can. Whether you need an added texture for function or aesthetics, LV650 Infuse FormCoat is the best choice to unlock your creativity.

For more information about Autocoat BT LV650 Infuse FormCoat or any other Autocoat BT products, contact your AkzoNobel Representative, visit www.sikkenscv.com, call **1-800-618-1010** or contact any AkzoNobel Distributor.

If you can think it...Infuse it.

Autocoat BT

AkzoNobel

Typical Test Results

	Adhesion	Pencil Hardness	WOM	Humidity	Water Soak	Salt Spray	Chip Resist-ance	Abrasion
	ASTM D3359	ASTM D3363	SAE J2527	ASTM D2247	ASTM D870	ASTM B117	ASTM D3170	ASTM D4060
	X-scribe / Cross-hatch		3000hrs	500hrs	72hrs x 100°F	500hrs	-20°F	1000g CS10 1000 cycle
FormCoat	100%	H - 2H	<2.0 ΔE_{cmc} >90% gloss retain	Pass	Pass	Pass	Pass	<80 mg loss

	A.F.F.F	1% HCL	1% NaOH	Anti-Freeze	Diesel	Hydrau-lic Fluid	Motor Oil	M600	Salt Water	Trans-mission Fluid
ASTM D1308 24 hour spot @ Room Temperature										
FormCoat	No effect	No effect	No effect	No effect	No effect	No effect	No effect	No effect	No effect	No effect

sikkens

Autocoat® BT LV650 Infuse SpeckCoat

Features	Benefits
Multi-colored specks	• Engineered to give uniform part to part speckled look • Unique decorative multi-colored appearance • Speckled texture camouflages imperfections
Durable	• Excellent mar and wear resistance • Exterior commercial OE durability
Multiple combinations	• Standard industry "compartment" colors available • Or customize with unlimited color combinations • Or apply directly to an Autocoat BT primer • Coarse to fine feel
Application friendly	• Use with HVLP pressure feed or gravity (2.2mm tip) • Great sag resistance, perfect for compartment areas • Easy 4:1 mix ratio with LV650 Hardener • Wet-on-wet application with LV650 products
Environmentally friendly	• High solids, less paint usage • <3.5 lbs/gal VOC and HAPs compliant • Made with recycled materials

Sikkens Autocoat® BT LV650 Infuse SpeckCoat is a low gloss, two-component polyurethane topcoat that offers the ability to add a range of speckled appearances to any Autocoat BT LV650 color. Its unique multi-colored texture is decorative and gives a camouflaging effect to underlying blemishes. SpeckCoat is application friendly and can be applied wet on wet with other LV650 products using standard HVLP equipment. It is a low VOC and HAPs compliant product.

Infuse SpeckCoat was engineered to provide Commercial OE performance and quality right out of the can. SpeckCoat is durable and mar-resistant, making it an ideal coating for the wear-and-tear of frequently used areas like commercial vehicles interior compartment and storage areas.

For more information about Autocoat BT LV650 Infuse SpeckCoat or any other Autocoat BT products, contact your AkzoNobel Representative, visit **www.sikkenscv.com**, call **1-800-618-1010** or contact any AkzoNobel Distributor.

Autocoat BT

AkzoNobel

Typical Test Results

	Adhesion	Pencil Hardness	WOM	Humidity	Water Soak	Salt Spray	Chip Resist-ance	Abrasion
	ASTM D3359	ASTM D3363	SAE J2527	ASTM D2247	ASTM D870	ASTM B117	ASTM D3170	ASTM D4060
	X-scribe / Cross-hatch		3000hrs	500hrs	72hrs x 100°F	500hrs	-20°F	1000g CS10 1000 cycle
SpeckCoat	100%	2H	<1.5 ΔE_{cmc} >90% gloss retain	Pass	Pass	Pass	Pass	<100 mg loss

	A.F.F.F	1% HCL	1% NaOH	Anti-Freeze	Diesel	Hydrau-lic Fluid	Motor Oil	M600	Salt Water	Trans-mission Fluid
	ASTM D1308 24 hour spot @ Room Temperature									
SpeckCoat	No effect	No effect	No effect	No effect	No effect	No effect	No effect	No effect	No effect	No effect

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 22 Section Number 2.13 Section Title Paint

Proposer's Request:

Most Turtle Top models are overall painted, however the model chosen for this bid has pre-finished panels. Based on the language we prefer to pain the vehicle white as the gel coating process doesn't match the three-stage process used to paint. However, including paint while others rely on pre-finished panels will render us less competitive. Would the agency consider requiring every bidder to use the same process eliminating subjectivity if pre-finished panels actually meet the spec?

The District's Response:

Approved: Denied: X Noted: See Addendum: #2

Comments: The District prefer pre-finished panels.

Procurement Officer: Alexandra Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Specs, Pg. 22 Section Number 2.13.a Section Title Paint Design

Proposer's Request:

Could GHTD please provide schematics of paint design so we can price accurately?

The District's Response:

Approved: Denied: X Noted: See Addendum: #2

Comments: The District does not have the schematics of paint design

Procurement Officer: LaShaunda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Dattco/Turtle Top
Proposer/Vehicle Manufacturer

RFP Part Ford Transit Section Number II Section Title Dimensions

Proposer's Request:

Would agency allow use of 138" WB, Ford Transit HD cutaway chassis with body to meet this specification? Or is agency looking for an OEM van?

The District's Response:

Approved: Denied: X Noted: See Addendum: #2

Comments: The District is looking for an OEM Van.

Procurement Officer: Shaunda Dalle Date: 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 2.0 Section Number _____ Section Title Equipment

Proposer's Request:

Sample floor plans and descriptions for seating capacity shown on page 4 under 2.0 equipment do not match. Please clarify for each bus type, do you want front or rear lift? How many seats (foldaway and fixed) and how many wheelchair securements are required for each bus type? Just as an example, on the A type, the chart on page 4 shows the bus as an 8 + 2 or a 7+ 2 depending on front or rear lift but the floor plan on page 17 shows seating for 12 passengers and securements for 4 wheelchairs. Please clarify what is desired for each floor plan. Is the floor plan shown correct or is the chart correct?

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:
1. Front Lift only
2. Foldaway seats (12 Pass 6 seats)(Cutaway)
3. 4 wheel chair securements per wheel chair
4. Ford Transit Floor Plan – 8 Pass / 2 Wheel Chairs
5. Cutaway Floor Plan – 12 Pass / 4 Wheel Chairs

LaShaunda Drake 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 2.8 Section Number 11 Section Title Seating Layout

Proposer's Request:

We have attached our proposed floor plan drawings based on the sample floor plan drawings you have supplied (assuming the sample floor plans are correct and the chart on page 4 is not). Please note on each floor plan we have depicted the maximum dimensions we can offer for the slide n click wheelchair securements. The maximum dimensions vary by floor plan and vary from the dimensions you are showing on your sample floor plans. We are requesting approval by floor plan for the dimensions of the wheelchair securements depicted.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

LaShaunda Drake 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 2.6 Section Number F Section Title Electrical System

Proposer's Request:

Please accept Weather-Pak connectors for all exterior electrical connectors

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

LaShaunda Drake 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 2.6 Section Number F Section Title Electrical System

Proposer's Request:

Please accept Optronics LED lighting ilo Dialiaght or Trucklite brands. Documents attached.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

LaShaunda Drake 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 2.6 Section Number G Section Title Electrical System

Proposer's Request:

Please accept wiring labeled every 12" ilo 6".

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

LaShaunda Drake 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 2.5 Section Number _____ Section Title Air Conditioning

Proposer's Request:

Please accept Trans Air brand A/C rated at 70,000 BTU's with a 3 fan skirt condenser and a dual compressor as an approved equal.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

LaShaunda Drake 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 2.6 Section Number E Section Title Electrical System

Proposer's Request:

The spec calls for an as built laminated wiring diagram and CD. Please accept an as built wiring diagram on a flash drive as an approved equal in lieu of the CD.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

LaShaunda Drake 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 2.7 Section Number A Section Title Body Construction

Proposer's Request:

The spec calls for a steel roof in 2 continuous panels. Please accept a single sheet of FRP for the roof as an approved equal. The single sheet of FRP does not have a seam which can develop water leaks.

The District's Response:

Approved: Denied: X Noted: See Addendum: # 2

Comments: The District prefer the 2 continuous panels.

Amanda Drake 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 2.7 Section Number O Section Title Body Construction

Proposer's Request:

Body dimensions are given for type B and C buses but not type A. Can you provide requested dimensions for type A buses?

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:
1. Body width shall be 96 inches maximum, excluding mirrors.
2. Body length shall be minimum 250 inches to maximum 275 inches including both the bumpers.
3. Wheel base shall be 138~156 inches. Body manufacturer shall select body length and wheel base such that the front and rear overhangs are within the CTDMV mandated regulations.
4. Body height shall not exceed one hundred twenty four (124) inches, and the roof hatch opening venting position.
5. Interior width in passenger compartment shall be a minimum ninety (90) inches.

LaShaunda Drake 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 2.7 Section Number i Section Title Body Construction

Proposer's Request:

Please accept 36"wide x 36"tall and 24"tall x 36"tall windows ilo 24" x 30" windows.

The District's Response:

Approved: Denied: X Noted: See Addendum: # 2

Comments: GHTD prefer to stay with the existing 24" X 30" windows to do not compromise the wall construction.

Jo Shaunder Drake 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 2.7 Section Number O Section Title Body Construction

Proposer's Request:

Please accept for type b and c: Body length shall be minimum 265 inches to maximum 306 inches including both the bumpers. IIo Body length shall be minimum 265 inches to maximum 303 inches including both the bumpers.

The District's Response:

Approved: X Denied: Noted: See Addendum: # 2

Comments:

LaShaunda Drake 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 2.8 Section Number A Section Title Operator's Seat

Proposer's Request:

Page 15 section 2.8 Please accept USSC G2E driver's seat ilo Recaro Ergo LXS, the Recaro seat doesn't meet Buy America requirements any longer.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

LaShaunda Drake 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 2.13 Section Number A Section Title Paint

Proposer's Request:

Please supply a photo or drawing of the GHTD logo and swooshes.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments: See attached word document / see addendum

LaShaunda Drake 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 2.12 Section Number _____ Section Title Undercoating

Proposer's Request:

Page 22 Undercoating Please accept Z-tech 9900 undercoating ilo Z-guard 20060-b-2

The District's Response:

Approved: X Denied: Noted: See Addendum: # 2

Comments:

LaShaunda Drake 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 4 Section Number _____ Section Title Options

Proposer's Request:

Are we supposed to supply pricing for options listed on page 26? We only see on the submission form where we can supply prices for LPG and low floor. Where do we supply information and pricing for the other options listed that we might like to propose?

The District's Response:

Approved: Denied: Noted: X See Addendum: #2

Comments: This question was answered in the addendum. Please refer to addendum #2 for the response.

LaShaunda Drake 6/8/20

APPROVED EQUAL FORM

*Attach as many of these forms as necessary to RFP

Don Brown Bus / Starcraft Bus

Proposer/Vehicle Manufacturer

RFP Part 2.3 Section Number 2.3d1 Section Title Chassis

Proposer's Request:

Bid states that any frame or chassis modification requires pre approval and that altering of the chassis wheelbase will not be accepted. It is standard practice for our manufacturer to extend the wheelbase of the Ford chassis per the Ford QVM requirements. A copy of the Ford specified procedure is attached.

Please accept the Ford specified procedure for extending chassis wheelbases per the attached memo as an approved equal.

The District's Response:

Approved: X Denied: Noted: See Addendum: # 2

Comments: Approved on C type Bus only.

Procurement Officer: Jennifer Drake Date: 6/8/20

BETTER VALUE • BETTER OPTIONS • BETTER LIGHTING

Founded in 1972

The fastest-growing vehicle lighting manufacturer in the U.S., Optronics International attributes its success to delivering better value, better options and better lighting to its customers. Optronics International is a premier worldwide manufacturer of industrial and commercial vehicle safety lighting products. Optronics specializes in interior and exterior LED and incandescent lighting for the HD, trailer, RV, marine, and transit vehicle markets.

ISO Certified

Optronics is headquartered in Tulsa, Oklahoma, with an ISO/TS 16949:2009 certified manufacturing facility in Annan District, Tainan, Taiwan, and additional manufacturing capabilities in its ISO 9001:2008 certified facility in Muskogee, Oklahoma. The company has an ISO 9001:2008 certified distribution facility in Goshen, Indiana, as well as distribution through its location in Ontario, Canada.

Lifetime LED Warranty

***ALL* Optronics LED lighting** is now covered by a one-diode lifetime warranty that replaces the lamp if even one diode fails.

Muskogee, OK

Goshen, IN

Tainan City, Taiwan

MCL66 SERIES

Sealed LED Surface Mount Marker/Clearance Lights

MCL66AB

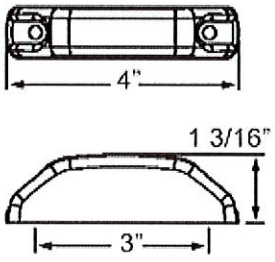
MCL66CAB

MCL66CRB

MCL66RB

- Select from 6-LED and 2-LED models in amber and red
- Sonically sealed, waterproof
- Surface mount, mounts on 3" centers
- Includes both lead and gound wire
- MCL166 series lights include a gasket and wire outlet grommet

BULK P/N	POLYPACK P/N	DESCRIPTION	QTY
		YELLOW	
MCL66AB	MCL66ABP	6-LED, 12V	20
MCL66APG	MCL66APGP	6-LED, 12V, .180 male bullets	20
MCL66A24B	MCL66A24BP	6-LED, 12-24V	20
MCL66CAB	MCL66CABP	6-LED, 12V, clear lens	20
MCL166AB	MCL166ABP	2-LED, 12V with gasket	20
		RED	
MCL66RB	MCL66RBP	6-LED, 12V	20
MCL66RPG	MCL66RPGP	6-LED, 12V, .180 male bullets	20
MCL66R24B	MCL66R24BP	6-LED, 12-24V	20
MCL66CRB	MCL66CRBP	6-LED, 12V, clear lens	20
MCL166RB	MCL166RBP	2-LED, 12V with gasket	20
		ACCESSORIES	
A66GB	A66GBP	Gasket, black	100
BK66DB	BK66DBP	Heavy duty armored base, die cast metal	50
		RETAIL	
MCL66AS	Retail Ready	Yellow 6-LED, 12V, clam	12
MCL66RS		Red 6-LED, 12V, clam	12

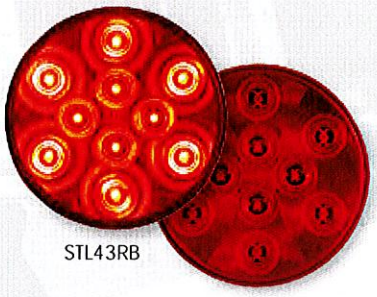


FMVSS	P2
MATERIALS	Polycarbonate lens and housing
VOLT/AMP	12.8VDC - 0.057A
WT/DIMS	.088 lbs. / 4" x .875" x 1.188"
WARRANTY	Lifetime LED Warranty

STL43 SERIES

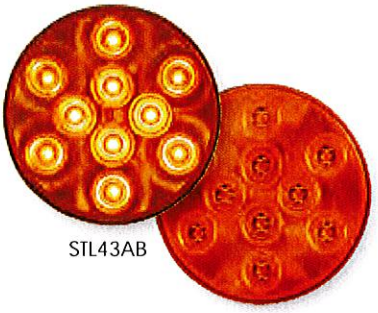
4" Round Sealed LED Lights

- Sonically sealed, waterproof
- Kits include grommet and plug
- Mount in any 360 degree position
- Available in 12V and 24V models
- Available with standard PL-3 or optional weathertight connection

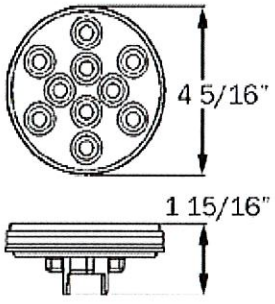

STL43RB

BULK P/N	POLYPACK P/N	DESCRIPTION	QTY
RED STOP/TURN/TAIL LIGHT - 10 DIODES			
STL43RB	STL43RBP	PL-3 connection, 12V	10
STL43RKB	STL43RKBP	Kit with A45GB & A47PB, PL-3, 12V	10
STL43R24B	STL43R24BP	PL-3 connection, 24V	10
STL43RMB	STL43RMBP	Weathertight connection, 12V	10
STL53RCB	STL53RCBP	Clear lens, red diode, PL-3	10
YELLOW PARKING/TURN SIGNAL - 10 DIODES			
STL43AB	STL43ABP	PL-3 connection, 12V	10
STL43A24B	STL43A24BP	PL-3 connection, 24V	10
STL43AKB	STL43AKBP	Kit with A45GB & A47PB, PL-3, 12V	10
ACCESSORIES			
A45GB	A45GBP	Grommet	50
A45PB	A45PBP	Pigtail, 3-wire PL-3	100
A47PB	A47PBP	Right angle pigtail, 3-wire PL-3	100
A45PMB	A45PMBP	Weathertight pigtail	100
AL45PWTB	AL45PWTBP	Weathertight to PL-3 adaptor	50
BK45BB	BK45BBP	Black steel bracket	10
A45BB	A45BBP	Black plastic flange	100
A45SB	A45SBP	Stainless steel mounting flange	20
A45CGB	A45CGBP	Chrome grommet cover	20
RETAIL			
STL43RK	Retail Ready	12V kit with A45GB & A47PB, clam	6


STL53RCB


STL43AB

FMVSS	Red S T I P2; Yellow I6 P
MATERIALS	Polycarbonate lens and housing
VOLT/AMP	Red: 12.8VDC - .360A Stop/Turn, .030A Tail
	Yellow: 12.8VDC - .310A Turn, .046A Parking
WT/DIMS	.265 lbs. / 4.313" x 4.313" x 1.938"
WARRANTY	Lifetime LED Warranty



HOLE CUT-OUT: 4.5"

EVOLUTION G2E

Evolution G2E Driver Seats

Engineered to enhance your vehicle's design with maximum comfort and safety.

USSC's Evoultion G2E driver seats are ergonomically designed to help reduce day-to-day driver fatigue and stress. The structural integrity built into each seat greatly dampens erratic movements caused by varying road surfaces.

Design options give you a variety of custom seat choices catering to your immediate and long term needs.

Headrest

A 4-way adjustable headrest is built in.

Upholstery

Standard durable seat materials include black fabric inserts and vinyl boxing material.

Lumbar Support

A two-way mechanical lumbar is operated by a rotational knob located on right-hand side of seat.

Back Recline

Seat backrest can easily be adjusted from 45 to 110 degree positions with right or left-hand side seat knob.

Dymetrol® Active Suspension

Greatly enhances driver ride quality by dampening road vibrations.

For more information visit us at
www.usscseating.com
or call 610.265.3610

EVOLUTION G2E

Options For Convenience, Personalization and Longevity

Silicone Seat Cushion	for additional support and comfort. Comes with a 10-year warranty.
Protective Backshell	additional seat upholstery protection is provided with a molded backshell that fits securely on the backrest and covers the entire rear and side edges of the upper backrest.
Armrests	a right or left hand-molded front armrest adjusts relative to the backrest's position and can be flipped out of the way.
Upholstery	custom seat upholstery options available with customer specified material.
Air Lumbar	additional back support is provided with an air bag located in the lumbar region. Lumbar is actuated by a manual hand pump bulb located on the right hand side of the seat.

150 Gordon Drive
Exton, PA 19341 USA
Phone: 610.265.3610
www.usscseating.com

Z TECHNOLOGIES CORPORATION
World Leaders in Corrosion Protection

ISO 9001:2008 CERTIFIED

August 12, 2014

Subject: Z Guard 9902 Water Based Corrosion Preventative

To Whom It May Concern

Z Technologies Product, Z Guard 9902, was tested to the requirements of Specification A-A- 55295 which supersedes Specification MIL PRF 62218 which supersedes Specification TT C 520.

The test results are attached.

Based on the results of testing, Z Guard 9902 meets or exceeds the performance requirements of the specification.

The product Z Guard 9902 is widely utilized in the Commercial Vehicles OEM market and carries a three year corrosion warranty.

Sincerely

Ellis Breskman Ph.D.
Director of Research & Development
Dr. Kurt Ziebart Memorial laboratory

Z Technologies Corporation
26500 Capitol Ave.
Redford, MI 48239 USA
E Mail ellisbreskman@ztechprotection.com
Desk 313 937 0710 xt 211
Fax 313 937 1470
Cell 313 506 2772
www.ztechprotection.com
World Leaders in Corrosion Protection

Production Part Approval - Material Test Results

Supplier		Part Name	
Z Technologies Corporation			
Name Of Laboratory			
	Dr. Kurt Ziebart Memorial Laboratories	Z-Guard ® 9902	
	Material Specification		
Spec. No.#	Com. Item Description A-A-59295	Superseding MIL - PRF - 62218B June 3, 1996; which supersedes TT C 520B	
2	Type I Motor Vehicles and Trailers	Originally issued Sept. 9, 1998	
	NSN 8030-01-127-3683		

	REQUIREMENTS:	RESULTS	OK	NOT OK
3.1	INGREDIENTS			
3.1	Non Volatiles dispersed in petroleum solvent	water based	X	
3.1.1	no highly toxic ingredients	comply	X	
3.1.1.1	No benzene or HAPS	comply	X	
3.1.1.2	No halogenated hydrocarbons	comply	X	
3.2	CHEMICAL AND PHYSICAL CHARACTERISTICS			
3.2.1.2	Non Volatiles (weight) not less than 52% ± 5%	61%	X	
3.2.1.3	Wt per liter to not vary by more than 5% ASTM D1475	comply	X	
3.2.1.4	Sulfated Ash content Each batch shall be within 10% of established value ASTM D95	comply	X	
3.2.2	Water Content shall be less than 1% ASTM D95	water based coating	X	
3.2.3	Lead Content less than 0.015% ASTM D3335	< 0.006%	X	
3.2.4	Flash Point not less than 100F ASTM D93	>240 F	X	
3.2.5	Condition in Container: no settling, lumps, skins, or separation of the solvent	comply	X	
3.2.6.2	Color Color Brown or Black: no fluorescent pigments or dyes	black	X	
3.3	PERFORMANCE PROPERTIES			
3.3.1	Sag Sag resistance ≥ 10 wet mils (250µ)	23 mils	X	
3.3.2.2	Creep (1) expose 2 std cold rolled steel panels to 24 Hrs of ASTM 117 Salt Spray (2) Clamp the panels together so that they overlap by 1/2 inch (3) apply the coating with a spatula to the joint (4) allow the test panels to stand in a vertical orientation for 7 days at room temp. (5) examine for creep of coating no more than 0.25 inches allowed	creep 0.1 inches pass	X	
3.3.3	Copper Corrosion The compound shall not be corrosive to copper when tested to ASTM D130 Test duration 3 hours Test Temperature 100C Copper strip classification value shall not exceed 1-b (slight tarnish, dark orange)	1-b Pass	X	
3.3.4	Fire Resistance: Expose the coating to a flame for 20 seconds The coating shall not support combustion for more than 15 seconds after the flame is removed per ASTM D1310	flame out in 5 seconds Pass	X	
3.3.5	Detergent Resistance Immerse the dry coating into a solution of 2 5 grams sodium lauryl sulfate or equivalent per liter of water at 50C (122F) for 10 minutes The coating must remain intact and continuous	Slightly affected	X	
3.3.6	Chip Resistance ASTM D3170 rating of 3A or better	4A Pass	X	
3.3.7	Solvent Vapor Wash Resistance Place fresh wet film into non air circulation oven at 121C for 15 minutes After 15 min cool at room temp, no evidence of sag, channeling, or removal from surface	no evidence of sag channeling or removal	X	
3.3.8	Condition to Touch After 7 days at room temp, the coating shall be dry to touch	dry to touch; Pass	X	
3.3.9	Environmental Testing shall conform to SAE J1959	Pass	X	
3.3.9.1	Low Temperature Stability Expose the films to temperature of -20F for 16 hours Film shall remain homogenous	no effect Pass	X	
3.3.9.2	Low Temperature Sprayability Coating applies at temperatures 4C (40F) or above	OK pass	X	
3.3.9.3	Low Temperature Flexibility Coating shall be flexible at temperatures -20F and above	Pass	X	
3.3.9.4	High Temperature Sprayability The coating shall spray well 100F or below	Pass	X	
3.3.9.5	High Temperature Flow Resistance Expose dry film to 300F for 2 hours: No sag allowed	No Sag Pass	X	
3.3.9.6	Salt Fog Apply coating to corroded surface Expose to 1000 hours per SAE J1959 Rating must be 2 or better	ASTM Rating of 6: Pass	X	
3.3.9.7	Salt Water Immersion: Immerse dry film for 21 days in solution of 27 6 grams of NaCl,2 4 grams CaCl2 in one liter of water Adjust pH to 7 8 - 8 2 with sodium carbonate See SAE J1959 The compound shall inhibit corrosion	Pass	X	
3.3.9.8	Cyclic Environmental conditions Test to SAE J1959 section 3 12 The coating shall inhibit corrosion	SAE J2334 Cyclic Pass	X	
4	REGULATORY REQUIREMENTS	Material is recoverable	X	
4.1	Attempt to utilize Recovered Material			
5	QUALITY ASSURANCE PROVISIONS	certified to ISO 9001	X	
5.1	Contractor Required to perform all examinations and tests			
5.2	Same product as sold to the commercial market	same product	X	

The above test results were obtained from validation testing to CID A-A-59295 Type II

Ellis Breskman PhD Technical Officer

MAY 12, 2014

Date

Z TECHNOLOGIES CORPORATION
World Leaders in Corrosion Protection

06/21/2017

MB#

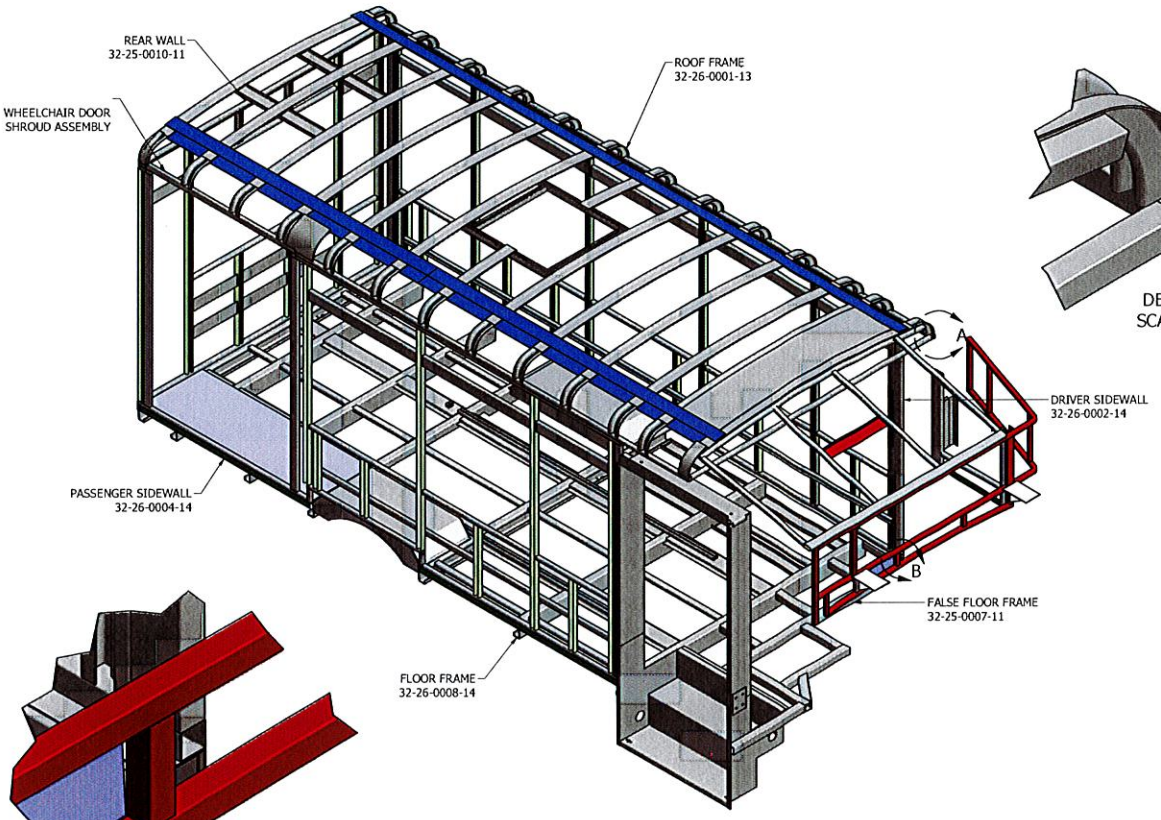
Z GUARD ™ 9902 STAR

A wax based undercoating intended to protect commercial vehicles from corrosion. The wax electrochemically inhibits the rate of corrosion and also, due to the film characteristics, provides a coating resistant to stone impingement and elevated temperatures.

PHYSICAL PROPERTIES

Appearance	Black Liquid
% NVM by WT.	50
Density	10.43 lb/gal
Viscosity (after reduction with water) per Brookfield RVT #5 Spindle 20RPM	2500
Viscosity per #4 Zahn cup	26 sec.
Mechanical Stability	Excellent
Heat Stability	Excellent
V.O.C.	0.00 lbs/gal
D.O.T. Flammability Rating	>200q F
pH	8.5
Cryptometer/#2 Wedge, ASTM D1212	15
60° Gloss	< 5 matt finish)
Sag (mils)	>15

Z TECHNOLOGIES CORPORATION
26500 Capitol Avenue, Redford, Michigan 48239-2597
Telephone (313) 937-0710 · Fax (313) 937-1470



ISOMETRIC VIEW

DETAIL A
SCALE 1 / 2

DETAIL B
SCALE 1 / 2

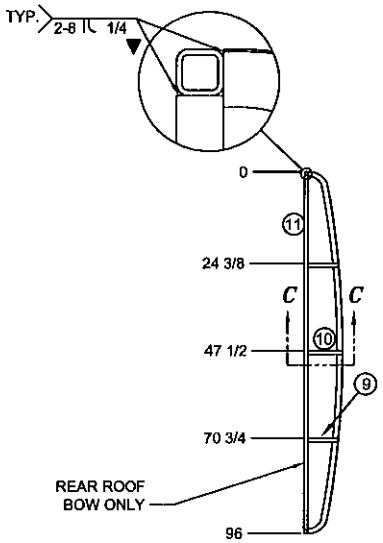
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
CAGES	"A"	Added missing standard roof steel	10/29/2013	TAS
31-28	"B"	Added Wheelchair door shroud Assembly	8/12/2015	TAS

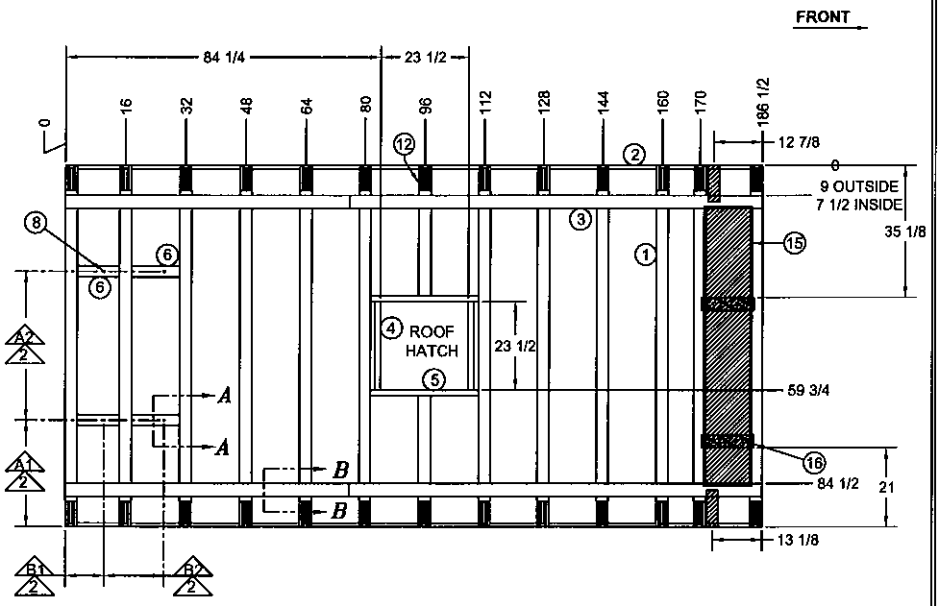
STARCRAFT BUS
a division of Forest River, Inc.

DFTSN: TAS	TITLE Ford ALLSTAR - 158 WB - 174 BOX CAGE W/C REAR LIFT, STANDARD STYLE FLOOR
DATE: 06/03/14	DWG NO 84033-1 SHEET 1 OF 1

▼ CRITICAL CONTROL ITEM

USAGE: 2011 ALLSTAR, FORD, 158" WB - MODEL 24





** WHEN ADDING REAR LUGGAGE ADD THE SIZE OF THE REAR LUGGAGE TO DIM. B1

NOTES:

1- DRAWING VIEWED FROM EXTERIOR SIDE OF UNIT.
2- A/C BOLT PATTREN MAY VERY SEE SALES ORDER.
3- BEFORE CUT ROOF HATCH SEE SALES ORDER.
4- SCREW LOCATION AT SEAMS AND EDGES 8" ON CENTER ALL OTHER LOCATION 16" ON CENTER.
5- SEALANT USAGE: 1/4" MIMIMUM 3/8"MAXIMUM BEAD ON ALL ROOF FRAME TO LUAN SURFACES.
6- ADD STRAP FOR CHEVY ONLY

REF. No.	QTY.	PART No.	MATERIAL DESCRIPTION
16	2		STRAP: 11ga. x 3-1/2" x 13-3/4"Lg.
15	1		PLATE: 16ga. x 12-3/4" x 75"Lg.
14	1		SHEET STEEL: 16ga. x 2" x 103"Lg.
13	2		SHEET STEEL: 16ga. x 3-1/2" x 38-1/2"Lg.
12	2	02062357	ROOF BOW W/CAP 16ga. x 3-3/16 x 35-1/4"Lg.
11	1		TUBE: 11ga. x 1" x 1" x 94"Lg. A-513
10	1		TUBE: 11ga. x 1" x 1" x 8-1/2"Lg. A-513
9	2		TUBE: 11ga. x 1" x 1" x 8"Lg. A-513
8	4		BOLT: 3/8-16 x 3"Lg. HEX HEAD
7	2		SHEET STEEL: 16ga. x 3-1/2" x 36-1/2"Lg.
6	4	70009046	"C" CHANNEL: 16ga. x 1" x 3-1/2" x 14-1/2"Lg.
5	2	70009047	"C" CHANNEL: 16ga. x 1-3/8" x 1-3/8" x 30-1/2"Lg.
4	2	70009047	"C" CHANNEL: 16ga. x 1-3/8" x 1-3/8" x 24-1/4"Lg.
3	4		SHEET STEEL: 16ga. x 3-1/2" x 120"Lg.
2	2		TUBE: 16ga. x 1" x 1" x 186-1/2"Lg. A-513
1	10	02062357	ROOF BOW W/CAP 16ga. x 3-3/16 x 96"Lg.

REV. LET.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.
A	2011 STYLE UPDATES	MK		10/29/13	

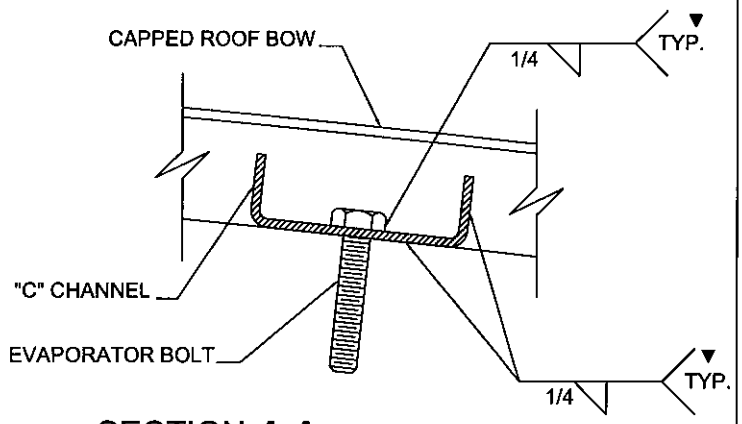
TOLERANCE UNLESS OTHERWISE SPECIFIED
± .00 ± .030
± .000 ± .015
± .0000 ± .005

STARCRAFT BUS
a division of Forest River, Inc.

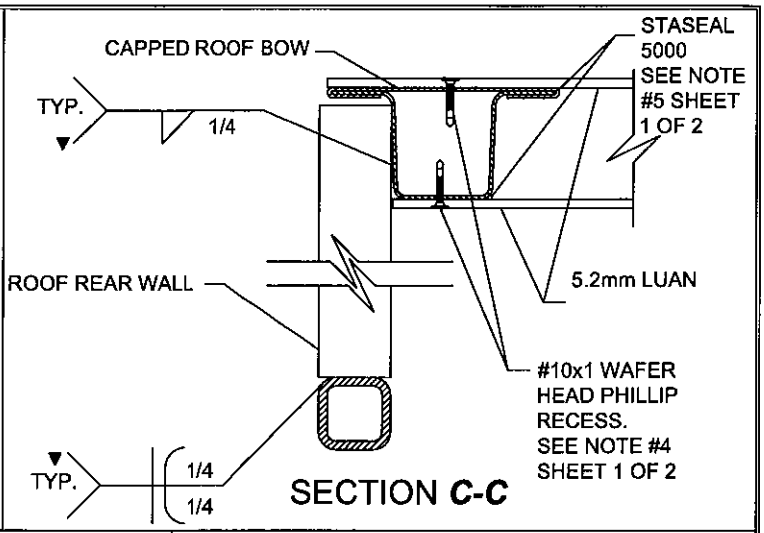
DATE: 10/13/10
DFTSN: MDK
CHKR:
APRVD:

TITLE: Frame, Roof Ford & Chevy Model 24, 2011 Allstar
DWG. No. 32-13-0017-10
SCALE
DISK No.
SHEET 1 OF 2

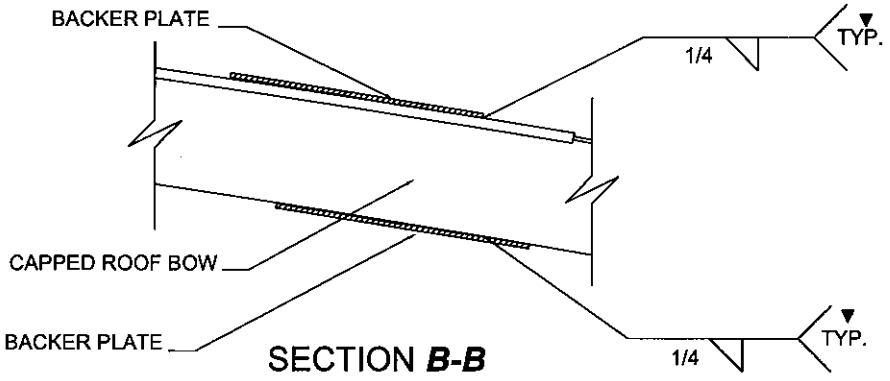
▼ CRITICAL CONTROL ITEM



SECTION ***A-A***



SECTION ***C-C***



SECTION ***B-B***

T/A-71 NEW STYLE	33-5/8	30	10	12-1/4
ACC 23022 SERIES	38	20	10	14-3/4
ACC 23023 SERIES	33-5/8	28-3/4	10	14-3/4
T/A-77	18-1/4	59-1/2	10	10-3/8
T/A-73	28-1/4	39-1/2	10	9-1/2
T/A-71 OLD STYLE	33-5/8	28-3/4	10	12-1/4
T/A-70	36-3/4	22-1/2	10	11-5/8
T/A-30	31	34	10	9-1/2
EM-14 & RE-29	30-3/4	34-1/2	10	9-1/2
EM-6 & RE-10	36	24	10	9-1/2
EM-3 & RE-30	28-1/4	39-1/2	10	16
RE-15 & RE-20	28-1/4	39-1/2	10	9-1/2
EM-1 & EM-2	28-1/4	39-1/2	10	9-1/2
EM-7 GEN 5	36-1/8	23-3/4	10	9-1/2
EM-2 GEN 5	32-3/8	31-1/16	10	9-1/2
EM-1 GEN 5	28-3/16	39-5/8	10	9-1/2
EVAPORATOR MODEL	A-1	A-2	B-1	B-2

REV. LET.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.

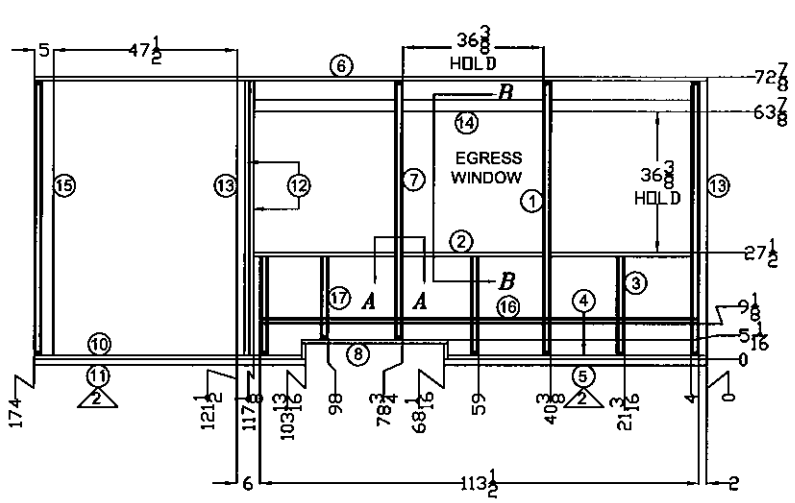
STARCRAFT BUS
a division of Forest River, Inc.

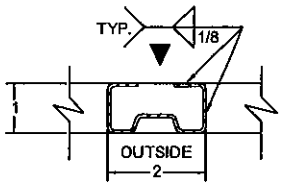
DATE: 10/08/10	TITLE: Frame, Details Roof, 2011 Allstar, Ford & Chevy Model 24
DFTSN: MDK	
CHKR:	DWG. No. 32-13-0017-10
APRVD:	SCALE
	DISK No.
	SHEET 2 OF 2

TOLERANCE UNLESS OTHERWISE SPECIFIED
± .00 ± .030
± .000 ± .015
± .0000 ± .005

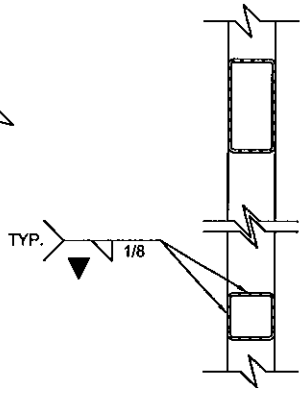
▼ CRITICAL CONTROL ITEM

USAGE: FORD 158"WB/MODEL 24



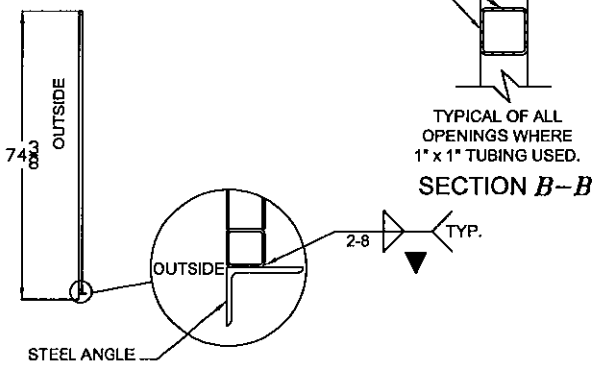


SECTION *A–A*



TYPICAL OF ALL OPENINGS WHERE 1" x 1" TUBING USED.

SECTION *B–B*



NOTES:

1- DRAWING VIEWED FROM EXTERIOR SIDE OF UNIT.

△2 2- ANGLE TO BE WELDED FLUSH WITH OUTSIDE EDGE OF WALL.

REF. No.	QTY.	PART No.	MATERIAL DESCRIPTION
9	0		TUBE: 16ga. x 1" x 1" x 24-3/8"Lg. A-513
8	1		FRAME, SIDEWALL WHEEL WELL FORD
7	1	02062351	WALL BOW: 18ga. x 1" x 2" x 66-13/16"Lg. A-513
6	1	02071055	TUBE: 16ga. x 1" x 1" x 174"Lg. A-513
5	1	02071056	ANGLE: 11ga. x 1-1/2" x 2" x 68-1/16"Lg. A-513
4	1	02071055	TUBE: 16ga. x 1" x 1" x 67-1/16"Lg. A-513
3	3	02062351	WALL BOW: 18ga. x 1" x 2" x 25-1/2"Lg. A-513
2	3		TUBE: 16ga. x 1" x 1" x 36-3/8"Lg. A-513
1	4	02062351	WALL BOW: 18ga. x 1" x 2" x 70-7/8"Lg. A-513
REF. No.	QTY.	PART No.	MATERIAL DESCRIPTION

REF. No.	QTY.	PART No.	MATERIAL DESCRIPTION
17	1		WALL BOW: 18ga. x 1" x 2" x 21-7/16"Lg. A-513
16	1		SEAT TRACK: 113-1/2"Lg.
15	1		TUBE: 18ga. x 1" x 3" x 70-7/8"Lg. A-513
14	3		TUBE: 18ga. x 1" x 3" x 36-3/8"Lg. A-513
13	2		TUBE: 18ga. x 1" x 2" x 70-7/8"Lg. A-513
12	2	02071055	TUBE: 16ga. x 1" x 1" x 70-7/8"Lg. A-513
11	1	02071056	ANGLE: 11ga. x 1-1/2" x 2" x 70-3/16"Lg. A-513
10	1	02071055	TUBE: 16ga. x 1" x 1" x 69-3/16"Lg. A-513

STARCRAFT BUS
a division of Forest River, Inc.

REV. LET.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.

TOLERANCE UNLESS OTHERWISE SPECIFIED
± .00 ± .030
± .000 ± .015
± .0000 ± .005

DATE: 10/08/10
DFTSM: MKLINE
CHKR:
APRVD:

TITLE: 158" WB MODEL 24, PASSENGER SIDEWALL, REAR LIFT, STANDARD FLOOR

DWG. No. 32-13-0009-10

SCALE

DISK No.

SHEET 1 OF 1

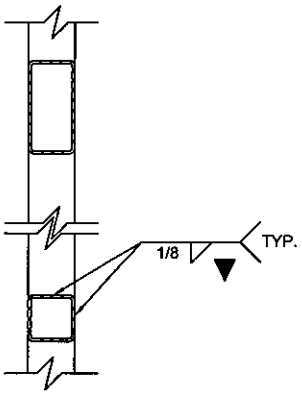
▼ CRITICAL CONTROL ITEM

USAGE: FORD 158"WB/MODEL 24

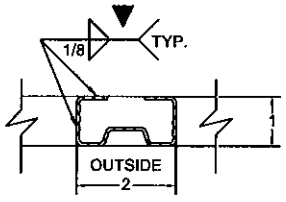
NOTES:

1- DRAWING VIEWED FROM EXTERIOR SIDE OF UNIT.

2- ANGLE TO BE WELDED FLUSH WITH OUTSIDE EDGE OF WALL.

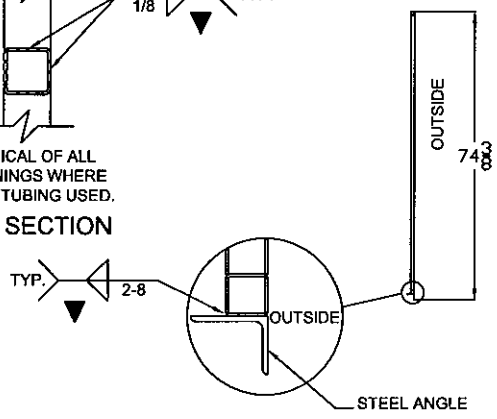


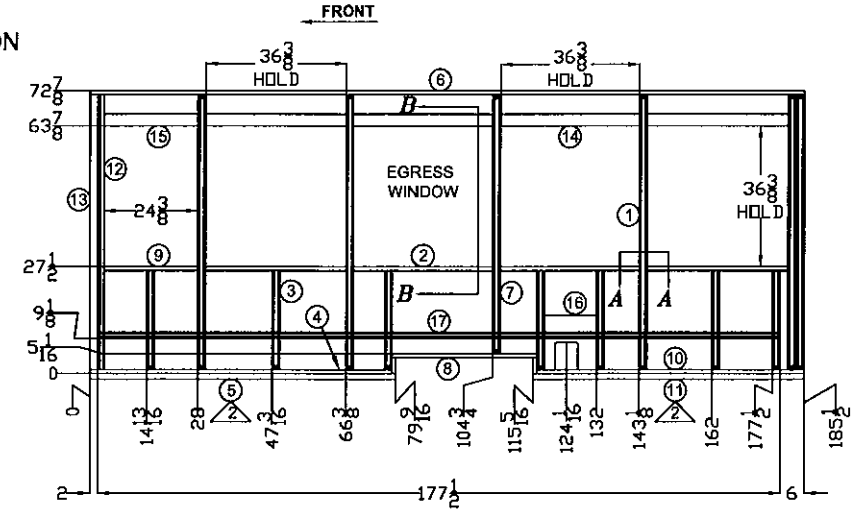
TYPICAL OF ALL OPENINGS WHERE 1" x 1" TUBING USED.



A–A SECTION

B–B SECTION





REF. No.	QTY.	PART No.	MATERIAL DESCRIPTION
9	1		TUBE: 16ga. x 1" x 1" x 24-3/8"Lg. A-513
8	1		FRAME, SIDEWALL WHEEL WELL FORD
7	1	02062351	WALL BOW: 18ga. x 1" x 2" x 68-13/16"Lg. A-513
6	1	02071055	TUBE: 16ga. x 1" x 1" x 185-1/2"Lg. A-513
5	1	02071056	ANGLE: 11ga. x 1-1/2" x 2" x 79-9/16"Lg. A-513
4	1	02071055	TUBE: 16ga. x 1" x 1" x 78-9/16"Lg. A-513
3	7	02062351	WALL BOW: 18ga. x 1" x 2" x 25-1/2"Lg. A-513
2	4		TUBE: 16ga. x 1" x 1" x 36-3/8"Lg. A-513
1	5	02062351	WALL BOW: 18ga. x 1" x 2" x 70-7/8"Lg. A-513

REF. No.	QTY.	PART No.	MATERIAL DESCRIPTION
17	1		SEAT TRACK: 177-1/2"Lg.
16	1		FUEL FILL BACKER BOARD
15	1		TUBE: 16ga. x 1" x 3" x 24-3/8"Lg. A-513
14	4		TUBE: 16ga. x 1" x 3" x 36-3/8"Lg. A-513
13	1		TUBE: 18ga. x 1" x 2" x 70-7/8"Lg. A-513
12	1		TUBE: 18ga. x 1" x 1" x 70-7/8"Lg. A-513
11	1	02071056	ANGLE: 11ga. x 1-1/2" x 2" x 70-3/16"Lg. A-513
10	1	02071055	TUBE: 16ga. x 1" x 1" x 69-3/16"Lg. A-513

STARCRAFT BUS
a division of Forest River, Inc.

REV. LET.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.

TOLERANCE UNLESS OTHERWISE SPECIFIED
± .00 ± .030
± .000 ± .015
± .0000 ± .005

DATE: 10/08/10
DFTSN: NXLINE
CHKR:
APRVD:

TITLE: 158" WB MODEL 24, DRIVERS SIDEWALL, ALL PASSENGER

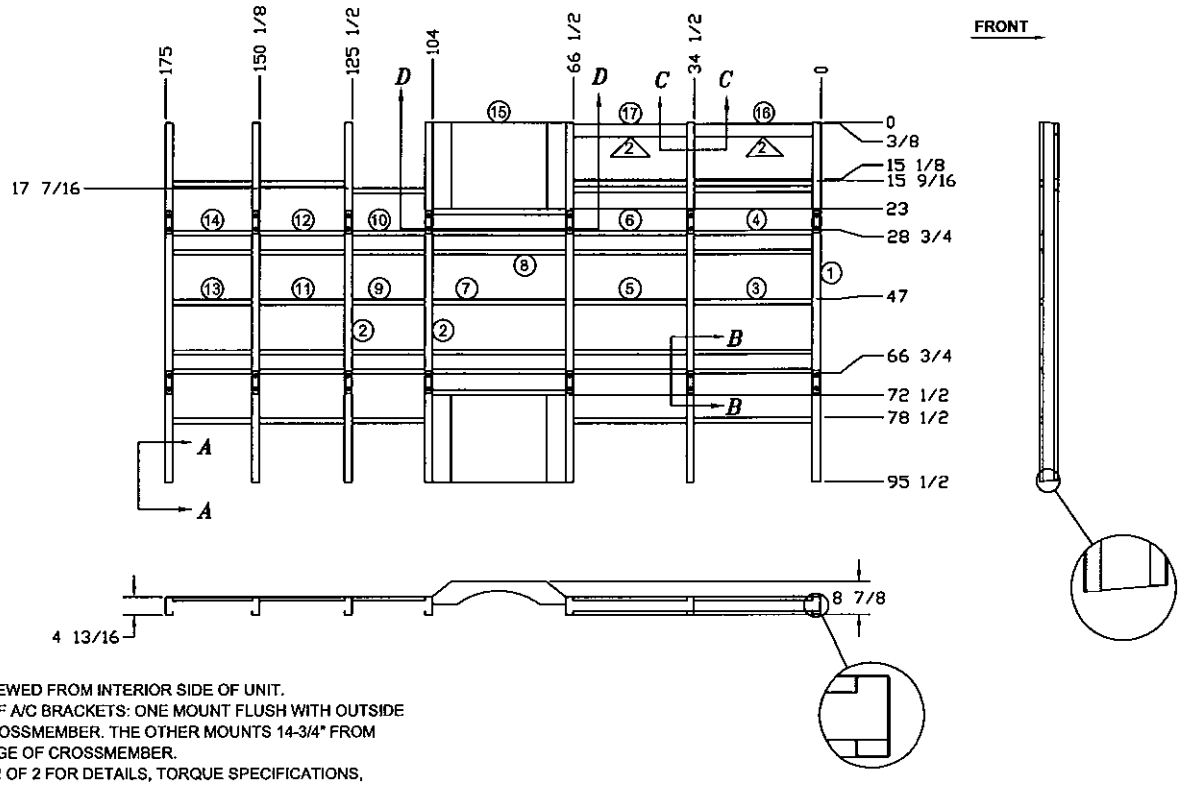
DWG. No. 32-13-0001-10

SCALE

DISK No.

SHEET 1 OF 1

▼ CRITICAL CONTROL ITEM **USAGE: 2012 FORD 158" WHEEL BASE, 175"BODY**



NOTES:

1- DRAWING VIEWED FROM INTERIOR SIDE OF UNIT.

2- LOCATION OF A/C BRACKETS: ONE MOUNT FLUSH WITH OUTSIDE EDGE OF CROSSMEMBER. THE OTHER MOUNTS 14-3/4" FROM OUTSIDE EDGE OF CROSSMEMBER.

3- SEE SHEET 2 OF 2 FOR DETAILS, TORQUE SPECIFICATIONS, SECTION VIEWS AND CUT LIST.

REV. LET.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.
A	RELEASED TO PRODUCTION	EF		1/17/06	

UNLESS OTHERWISE SPECIFIED: WOOD ± 1/8" | ± 1" | OTHER | ± 1/16" | ± 1/2"

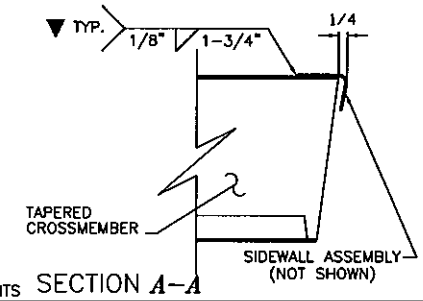
Starcraft Bus
Division of Forest River,Inc.

TITLE: Frame, Floor Ford 158" Wheel Base 175" Body

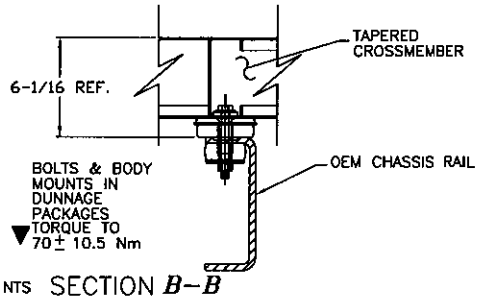
DATE: 08/02/12 | SCALE: | SHEET 1 OF 2

DFTSN: MDK | CHKR: | DWG. No. 31-08-0016-12

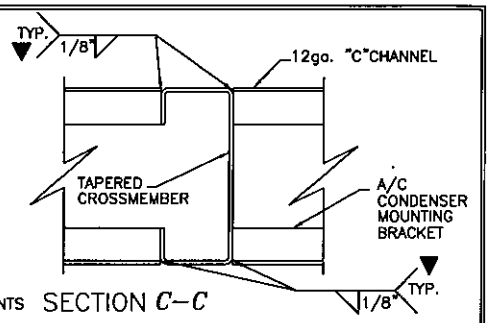
▼ CRITICAL CONTROL ITEM



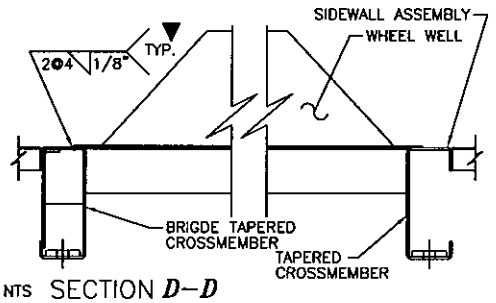
NTS SECTION *A–A*



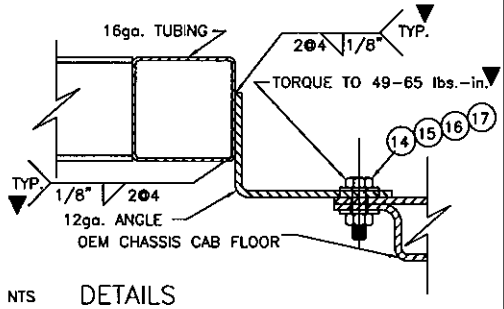
NTS SECTION *B–B*



NTS SECTION *C–C*



NTS SECTION *D–D*



NTS DETAILS

USAGE: 2012 FORD 158" WHEEL BASE, 175"BODY

REF. No.	QTY.	PART No.	MATERIAL DESCRIPTION
17	7		"C" CHANNEL: 16ga. x 1" x 3-1/2" x 30"Lg.
16	7		"C" CHANNEL: 16ga. x 1" x 3-1/2" x 32-1/2"Lg.
15	2		WHEEL WELL WIDE BODY
14	2		HAT CHANNEL: 16ga. x 1" x 6-5/16" x 20-7/8"Lg.
13	3		"C" CHANNEL: 16ga. x 1" x 1-1/2" x 20-7/8"Lg.
12	2		HAT CHANNEL: 16ga. x 1" x 6-5/16" x 22-5/8"Lg.
11	3		"C" CHANNEL: 16ga. x 1" x 1-1/2" x 22-5/8"Lg.
10	2		HAT CHANNEL: 16ga. x 1" x 6-5/16" x 19-1/2"Lg.
9	3		"C" CHANNEL: 16ga. x 1" x 1-1/2" x 19-1/2"Lg.
8	2		HAT CHANNEL: 16ga. x 1" x 6-5/16" x 35-1/2"Lg.
7	3		"C" CHANNEL: 16ga. x 1" x 1-1/2" x 35-1/2"Lg.
6	2		HAT CHANNEL: 16ga. x 1" x 6-5/16" x 30"Lg.
5	3		"C" CHANNEL: 16ga. x 1" x 1-1/2" x 30"Lg.
4	2		HAT CHANNEL: 16ga. x 1" x 6-5/16" x 32-1/2"Lg.
3	3		"C" CHANNEL: 16ga. x 1" x 1-1/2" x 32-1/2"Lg.
2	2		Bridged Crossmember: 14ga. x 2 x 4-13/16 x 95-1/2
1	5		Crossmember: 14ga. x 2 x 4-13/16 x 95-1/2

REV. LET.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.
A	RELEASED TO PRODUCTION	MK		8/1/12	

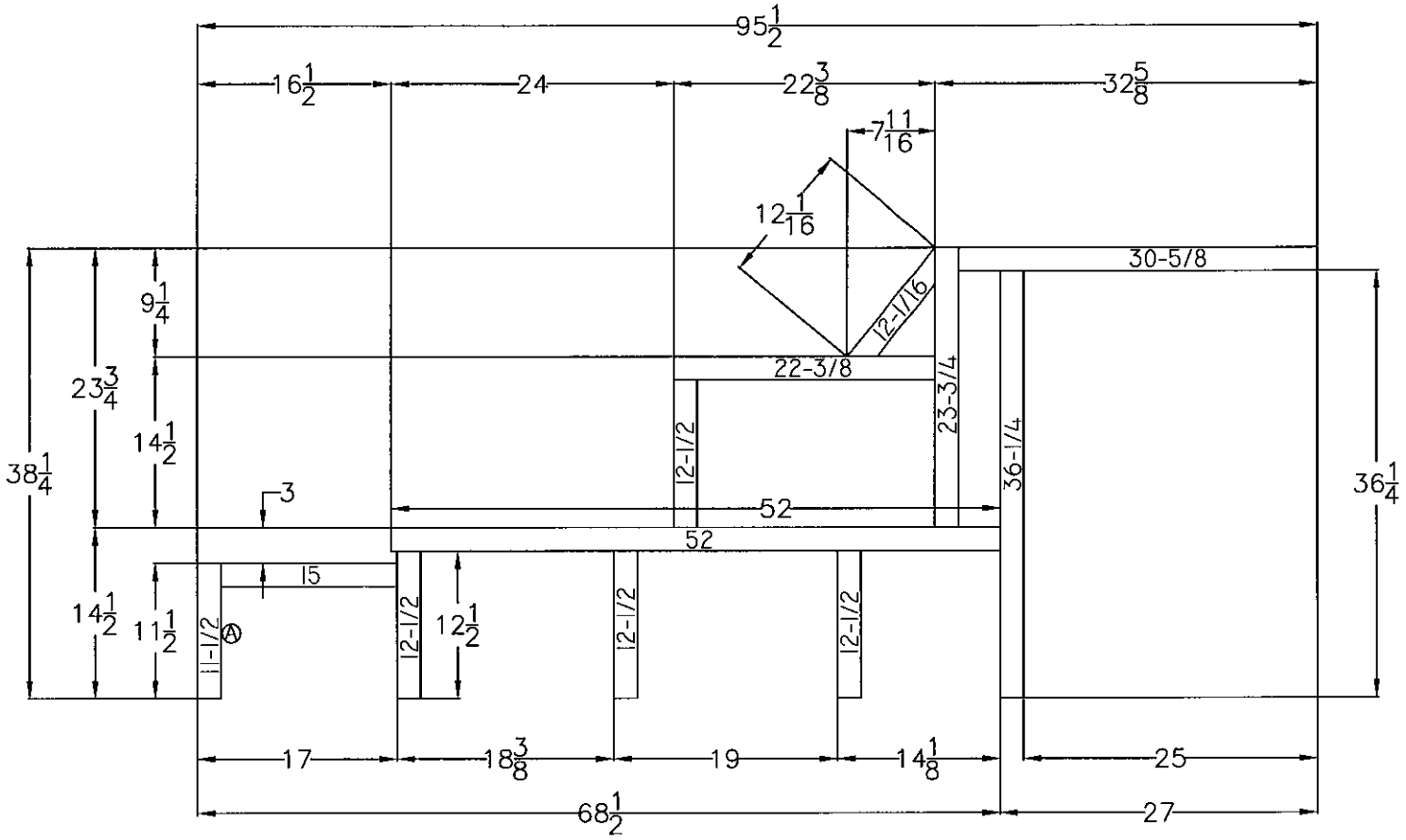
TOLERANCE UNLESS OTHERWISE SPECIFIED: WOOD ± 1/8" | ± 1° | OTHER | ± 1/16" | ± 1/2°

Starcraft Bus
Division of Forest River,Inc.

TITLE: Frame, Details Floor Ford 158" Wheel Base 175" Body

DATE: 8/02/12 | SCALE: | SHEET 2 OF 2

DFTSN: MDK | CHKR: | DWG. No. 31-08-0016-12



MAT'L-16GA. 2" x 2" TUBE

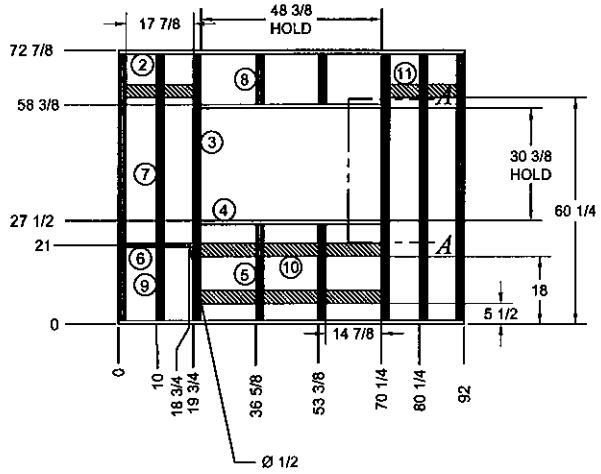
REV. LET.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.
A	SHORTENED TUBE 5/16"	MDK		6/14/10	

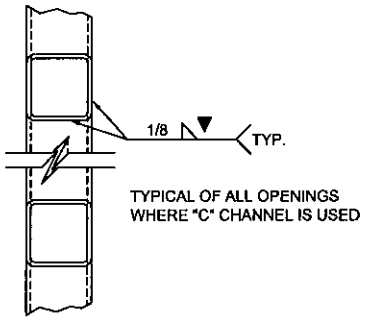
STARCRAFT BUS
a division of Forest River, Inc.

DATE: 06/10/10	TITLE: 2011 ALLSTAR NEW STYLE FALSE FLOOR
DFTSN: MKLINE	
TOLERANCE UNLESS OTHERWISE SPECIFIED: .00 ±.030, .000 ±.015, .0000 ±.005	
CHKR:	DWG. No. 31-28-0534-10
APRVD:	SCALE
	DISK No.
	SHEET 1 OF 1

▼ CRITICAL CONTROL ITEM

USAGE: ALLSTAR W/ REAR EGRESS WINDOW





SECTION *A-A*

NOTES:

1- DRAWING VIEWED FROM EXTERIOR SIDE OF UNIT.

REF. No.	QTY.	PART No.	MATERIAL DESCRIPTION
11	2		STEEL PLATE: 11ga. x 3 1/2" x 17-7/8"Lg. A-513
10	6		STEEL PLATE: 11ga. x 3 1/2" x 14-3/4"Lg. A-513
9	1	02062351	WALL BOW: 18ga. x 1" x 2" x 19"Lg. A-513
8	2	02062351	WALL BOW: 18ga. x 1" x 2" x 12-7/8"Lg. A-513
7	1	02062351	WALL BOW: 18ga. x 1" x 2" x 50-7/8"Lg. A-513
6	1	02071055	TUBE: 16ga. x 1" x 1" x 17-3/4"Lg. A-513
5	2	02062351	WALL BOW: 18ga. x 1" x 2" x 25-1/2"Lg. A-513
4	2	02071055	TUBE: 16ga. x 1" x 1" x 48-3/8"Lg. A-513
3	5	02062351	WALL BOW: 18ga. x 1" x 2" x 70-7/8"Lg. A-513
2	2	02071055	TUBE: 16ga. x 1" x 1" x 92"Lg. A-513
1			

STARCRAFT BUS
a division of Forest River, Inc.

REV. LET.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.
A	ADDED 11ga. STRAP STEEL REINFORCMENT FOR BAGS AND RESTRAINTS			10/29/13	

TOLERANCE UNLESS OTHERWISE SPECIFIED
± .00 ± .030
± .000 ± .015
± .0000 ± .005

DATE: 09/20/10
DFTSN: MDK
CHKR:
APRVD:
SCALE
DISK No.

TITLE: **Frame, Rear Wall With 30" x 48" Window**

DWG. No. 31-28-0003-05

SHEET 1 OF 1

STARCRAFT BUS
a division of Forest River, Inc.

AMERICA'S #1
SHUTTLE BUS
MANUFACTURER

The following information is submitted as supporting documentation of the structural soundness and impact resistance of the Allstar and Starlite bodies manufactured. All vehicles are built using virtually the same materials with some minor differences in the height and width of cross members due to entry floor heights and/or body width variations.

3.0 Body Construction – General Frame Construction

Manufactured from all steel products, the floor, roof, side walls, rear wall, driver halo assembly and entry door assembly are all wire welded (MIG) together to form an integral steel frame that is thoroughly coated in our primer paint shop, then mounted with specified hardware to the rubber body mount points (pucks) supplied by the chassis manufacturer. Once joined to the chassis, the bus finishing process begins.

3.0.1 Floor frame construction and assembly –

3.0.1.1 Cross Members -- The floor cross members form the base structural support for the rest of the frame components. Our cross members are constructed of 14 gauge steel, formed to a capital "C" shape. Cross members over the fuel tank are made to provide the clearance needed to conform with FMVSS301 and include formed internal reinforcements welded in place for additional strength. All additional longitudinal and latitudinal structure is flush welded in place to form a one piece floor upon completion.

3.0.1.2 Steel "Hat Posts" – 1"x1"x4"x1"x1" run the length of the floor between cross members and are welded into place.

3.0.1.3 Seat Track - High Strength Low Alloy roll formed steel seat track is welded to the 4" dimension of the hat posts, providing even more strength to the floor structure.

3.0.1.4 Steel C Channel – 1"x1.5" C channel is welded in between cross members the full length of the floor in 5 places. Coupled with the Hat Posts this provides a one-piece strong "ladder" type frame for the flooring.

3.0.1.5 Wheel Wells -- Constructed of 14 gauge steel, wheel wells are also welded in during the floor construction process. All seams in the wheel well are welded to create a one piece water resistant wheel housing structure. The wheel wells also provide additional strength to the body assembly, when welded in place.

3.0.1.6 Structural Steel Angle – 1/8" thick 1.5" x 2.5" structural steel angle is used the full perimeter length of each floor assembly, welded to the ends of all floor cross members. This provides not only a flat plane for joining the sidewall assembly, but also ties all cross members together and provides additional side impact resistance.

3.0.1.7 Additional structure – When adding vertical stanchions, wheel chair lifts and/or tie down options, additional structure is welded into the floor at locations specified by our engineering department on CAD drawings.

top flat pieces from flange to flange to provide abundant surface area for securing the exterior roof material. Each bow is welded to the 1" tubing referenced below.

3.0.4.2 Steel Tubing – 1"x1" 16 gauge steel tubing is welded to the full perimeter of the roof for mating to the sidewall and rear wall, with short vertical pieces providing support on the front and rear ends. The 3" wide steel tube supplies a structural mounting surface for shoulder belt attachment and has been pull tested to federal standards.

3.0.4.3 Steel Plate 3" wide is welded full length longitudinally on each side of the roof to provide further strength and stability to the roof structure.

3.0.4.4 Steel Plate of varying dimensions is welded into the roof structure between bows to provide mount points for items such as stanchions for secure mounting whenever the items are not placed directly beneath a roof bow.

3.0.5 Driver Compartment Overhead Halo –

3.0.5.1 Steel Tubing – 1"x1" 16 gauge steel tubing is cut and jig welded into an integrated one piece structure spanning from the front roof bow of the body to the newly cut roof line of the cab. Also created during the structure manufacture is the housing for mounting the electronic circuit board.

3.0.5.2 11 Gauge Steel – formed to make brackets used to mount to the chassis roof.

3.0.6 False Floor (Cab to body transition) –

3.0.6.1 Steel Tubing – 2" x2" 16 gauge steel tubing is welded together forming a flat body floor transition from the step area back to the actual body area. An overhang on the curbside provides a secure attach point frontally for the entry door frame added later.

3.0.6.2 Structural steel angle – 11 gauge 1.5"x1.5" structural angle is added in short lengths five places to provide attachment points to the chassis floor.

3.0.7 Interior Vertical Transition Frames –

3.0.7.1 Steel Tubing – 1"x1" 16 gauge steel tubing is used vertically and a ladder type assembly is made welding the 1x 1 tube to .75"x.75" 11 gauge steel tube that is used horizontally in the assemblies. These pieces transition from the body fronts on each side to the driver halo side assembly and the entry door frame assembly on the curbside.

3.0.8 Entry Door & Step Assembly Frame –

3.0.8.1 Steel Tubing – 1"x1" 16 gauge vertical and .75"x.75" 11 gauge horizontal steel tube is cut to length and welded together in a ladder type construction forming a rigid frame for attaching the entry door/step assembly.

3.0.9 Entry Door/Step Assembly –

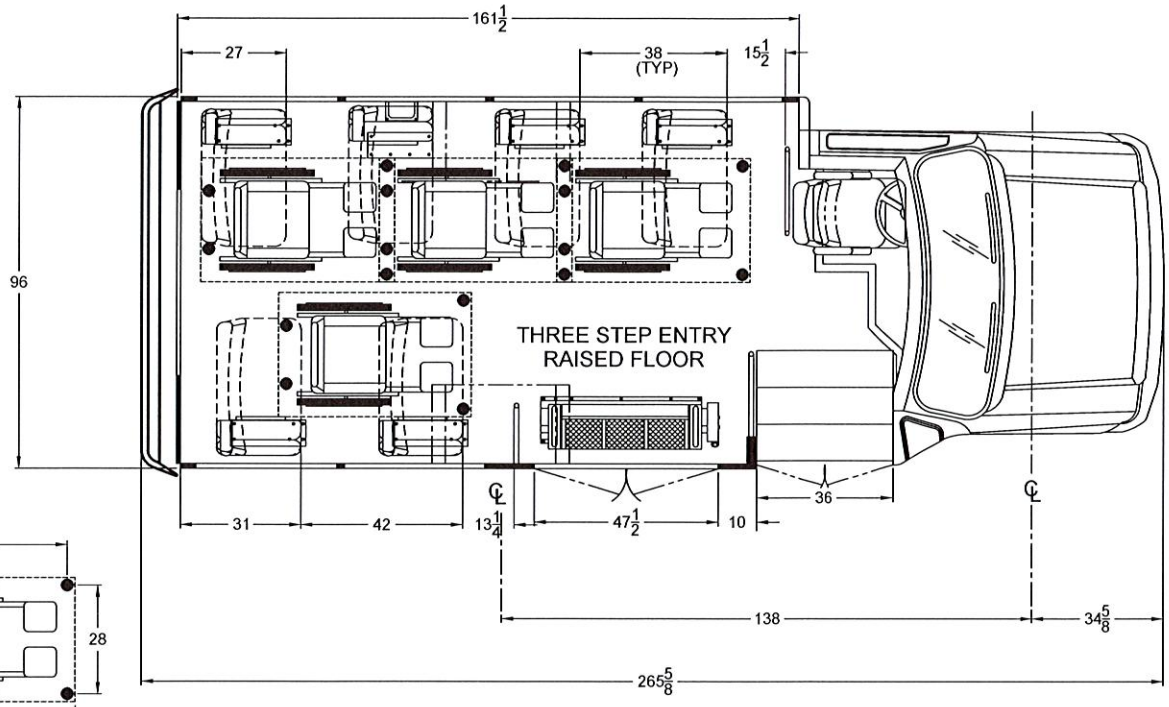
3.0.9.1 11 Gauge Steel – The step riser/tread piece is manufactured from one-piece 11 gauge steel and uses 90° bends at all risers and treads. The bottom tread also adds an

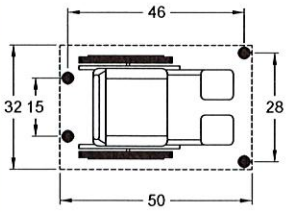
STARCRAFT BUS
a division of Forest River, Inc.

AMERICA'S #1
SHUTTLE BUS
MANUFACTURER

As above, product data sheets are attached for Manus 75-UHVFC and also the VHB tape for your information. A pictorial information sheet of the process is also attached to enable a visual understanding of the process as well.

Should you have any questions, please contact your Starcraft Bus representative.





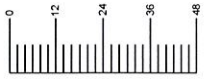
DEALER APPROVAL

☐ APPROVED

CUSTOMER SIGNATURE

NOTE: SHOWN WITH MID HI FREEDMAN SEATS
ALLSTAR E-350 12,500 GVWR
THIS FLOOR PLAN IS FOR ILLUSTRATION PURPOSES ONLY.
A WEIGHT ANALYSIS HAS NOT YET BEEN PERFORMED.
FINAL APPROVAL WITH A WEIGHT ANALYSIS IS REQUIRED UPON RECEIPT OF A COMPLETED ORDER WITH ALL OPTIONS SHOWN.
OPTIONAL EQUIPTMENT MAY BE SHOWN.
THE SALES ORDER PLACED DICTATES ACTUAL OPTION CONTENT.

SCALE IN INCHES



REV. LET.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.

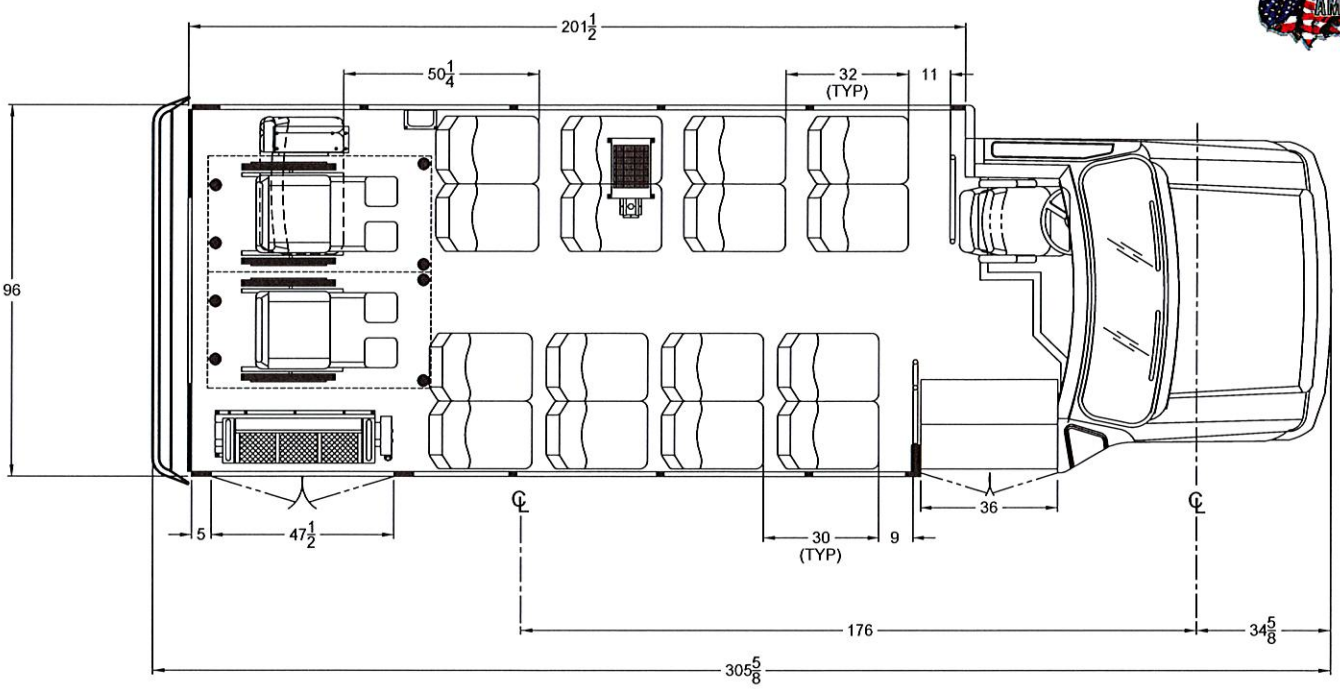
TOLERANCE UNLESS OTHERWISE SPECIFIED

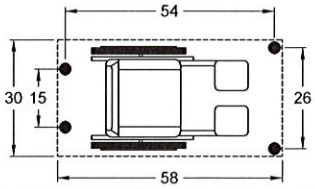
WOOD	OTHER
± 1/8"	± 1/16"
± 1°	± 1/2°

STARCRAFT BUS
a division of Forest River, Inc.

DATE: 05/29/20
NAME: PWM
DWG. No. 4 WC 6 DB FOLDS 138 150-3 USA

TITLE: 4 WC 138" WB 20' ALLSTAR





DEALER APPROVAL
☐ APPROVED
_____
CUSTOMER SIGNATURE

NOTE: SHOWN WITH MID HI FREEDMAN SEATS
ALLSTAR E-450 14,500 GVWR
THIS FLOOR PLAN IS FOR ILLUSTRATION PURPOSES ONLY.
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OPTIONAL EQUIPMENT MAY BE SHOWN.
THE SALES ORDER PLACED DICTATES ACTUAL OPTION CONTENT.

SCALE IN INCHES

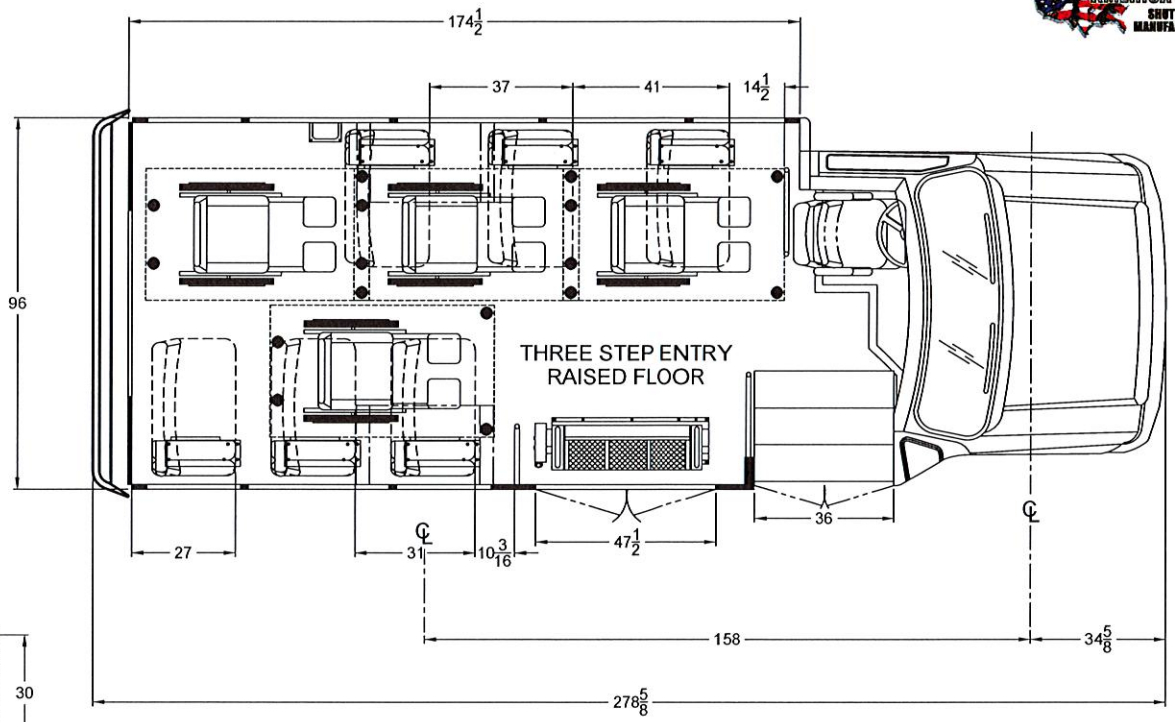
REV LET.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.

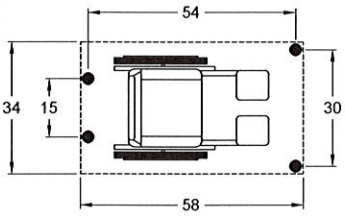
TOLERANCE UNLESS OTHERWISE SPECIFIED

WOOD	OTHER
± 1/8"	± 1/16"
± 1°	± 1/2°

STARCRAFT BUS
a division of Forest River, Inc.

DATE: 04/08/19
NAME: JPC
TITLE: 16 2 WC PASSENGER 25' ALLSTAR
DWG. No. 16 2 WC 1 DB FOLD 176 190-22 USA





DEALER APPROVAL

☐ APPROVED

CUSTOMER SIGNATURE

NOTE: SHOWN WITH MID HI FREEDMAN SEATS
ALLSTAR E-450 14,500 GVWR
THIS FLOOR PLAN IS FOR ILLUSTRATION PURPOSES ONLY.
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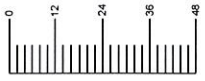
SCALE IN INCHES



REV LET.	DESCRIPTION OF CHANGE	BY	CHK	DATE	ECN No.

TOLERANCE UNLESS OTHERWISE SPECIFIED

WOOD	OTHER
± 1/8"	± 1/16"
± 1°	± 1/2°

STARCRAFT BUS
a division of Forest River, Inc.

DATE: 05/29/20 TITLE: 4 WC 6 DB FOLDS 158 WB 163 BDY 22' ALLSTAR

NAME: PWM

DWG. No. 4 WC 6 DB FOLDS 158 163-6 USA

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Gerflor
Proposer/Vehicle Manufacturer

RFP Part 27 Section Number C5 Section Title The Floor

Proposer's Request:
Please accept ~~Gerflor~~ Tarabus as an alternate to the specified Altro Flooring. Gerflor's Tarabus flooring was designed and first introduced into the heavy duty bus market with our 2.25mm thickness. The 2.25mm, with its 100% pure PVC wear layer, has proven over the years to be very durable in the heavy-duty bus market. With the success in the heavy-duty market, this has carried over to the shuttle bus market with the 2.25mm proving to be more than durable enough to last throughout the life cycle of a light and medium duty bus and the 12 year warranty on the Tarabus product line is longer than the average life cycle of a light/medium duty bus.

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: LaShaunda Drake Date: 6/8/20

gerflorusa.com

Gerflor
theflooringgroup

595 Supreme Drive
Bensenville, IL 60106

May 28, 2020

Please accept Gerflor Tarabus as an alternate to the specified Altro flooring. Gerflor's Tarabus flooring was designed and first introduced into the heavy-duty bus market with our 2.25mm thickness. The 2.25 mm, with its 100% pure PVC wear layer, has proven over the years to be very durable in the heavy-duty market. With the success in the heavy-duty market, this has carried over to the shuttle bus market with the 2.25 mm proving to be more than durable enough to last throughout the life cycle of a light and medium duty bus and the 12-year warranty on the Tarabus product line is longer than the average life cycle of a light/medium duty bus.

- Tarabus is 2.25 mm thick and is designed to be extremely durable and last the life of a heavy duty bus with a 12-year warranty.
- Tarabus is a homogenous floor and has a pure 100% compact PVC wear layer. Gerflor uses no fillers such as chalk or quartz.
- Tarabus has silicon carbide and emboss that makes the floor highly slip resistant and ADA compliant. (Independent ASTM D2047 slip testing data available on request)
- Tarabus wear layer is very dense creating a floor that is easy to keep mop clean.
- Tarabus has a glass fiber web that gives superior dimensional stability that resists shrinking and cracking.
- Tarabus has a unique proprietary textile backing for superior adhesion, allowing a mechanical as well as chemical adhesion.
- Tarabus is extremely lightweight weighing 4.05lb per square yard.
- All seams will be heat welded to eliminate the possibility of water intrusion.
- Gerflor Tarabus meets FMVSS 302 and Docket 90 requirements.
- Gerflor Tarabus is anti-microbial.

Sincerely,
Larry Mabery
Regional Sales Manager
Gerflor USA Inc.
810-877-2101
larry.mabery@gerflor.com
http://www.tarabusbygerflor.com/

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. / Coach & Equipment Mfg. Corp.
Proposer/Vehicle Manufacturer

SECTION II - TECHNICAL
RFP Part ____ Section Number C. Section Title Vehicle and Optional Feature Pricing

initial 365 days firm/fixed price period...Producer Price Index (PPI) for SIC Industry Group 371.

Proposer's Request:
Shepard Bros., Inc. requests the use of the U.S. Department of Labor/Bureau of Labor Statistics Producer Price Index (PPI) Category 1413, "Trucks and Bus Bodies" after a period of 90 days.

Rational: Category 1413, "Trucks and Bus Bodies" provides a more accurate reflection of the overall cost of the PARATRANSIT VEHICLES specified in this procurement. In todays economic environment a period of 90 days is more likely to provide better initial pricing and insulate all parties from affects of todays extreme economic circumstances.

The District's Response:

Approved: X Denied: Noted: See Addendum: # 2

Comments: The District approves the use of the U.S. Department of Labor/Bureau of Labor Statistics Producer Price Index (PPI) Category 1413, "Trucks and Bus Bodies" after a period of 90 days.

Procurement Officer: Shaunda Drake Date: 6/8/20

Paul E. Hubbard Jr.
Shepard Bros., Inc. | (Representing) Coach & Equipment Mfg. Corp.
20 Eastern Blvd., Canandaigua, NY 14424,
(585) 330-2402 | PHubbard@ShepardBrosInc.com

2.0 EQUIPMENT:

Vehicles shall conform to the requirements of the following table:

VEHICLE CLASS	A Ford E350	A GM 3500	B Ford E450	B GM 4500	C Ford E450	C GM 4500
SPECIFICATIONS						
Number of Minimum Wheelchair Positions	2	2	2	2	2	2
Minimum Seat Positions-Rear Lift	8	8	12	12	16	16
Minimum Seat Positions-Front Lift	7	7	11	11	14	14
Minimum OEM Gross Vehicle Weight rating in lbs	11,500	12300	14500	14200	14,500	14,500
Wheel Base (Inches)	138	139	158	159	176-190	176-190
Minimum Entrance Door Height (in)	72	75	75	75	75	75
Minimum Clear Door Width (in)						
Front Lift	27	27	30	30	30	30
Rear Lift	30	30	30	30	30	30
Minimum Engine Size (Liters)	5.4	6.0	7.3	6.0	7.3	6.0

Proposer's Request: Shepard Bros Inc. respectfully requests the acceptance of a 14,000 lb. GVWR.

Reason for request: The 2021 Ford chassis is available with a 7.3L V-8 gas engine with two power ratings (see next page). If an operator wants to take advantage of the improved fuel economy of the economy engine the maximum GVWR available with the Economy Rated engine is 14,000 lbs.

Note: All of the Type B & C seating layouts can be built on an E450 with a 14,000# GVWR. The increased horsepower engine and higher GVWR can be offered in the option section of the RFP.

The District's Response:
Approved: X Denied:_____ Noted: See Addendum: #2

Comments:

Procurement Officer: Shaunda Drake Date: 6/8/20

2021 E-Series > Specs > Powertrain

Engine

Driveline Layout	**Front engine, rear wheel (RWD)**	
Engine Type	**7.3L PFI Gas V8 Premium-Rated**	**7.3L PFI Gas V8 Economy-Rated**
Displacement (liters/cu. in.)	7.3/445	7.3/445
Horsepower @ rpm	350 @ 3,900	300 @ 3,750
Torque (lb.-ft.) @ rpm	468 @ 3,900	425 @ 3,250
Compression Ratio	10.5:1	10.5:1
Valvetrain	SOHC	SOHC
Valve Operation	Push rod	Push rod
Bore & Stroke (in.)	4.21 x 3.98	4.21 x 3.98
Main Bearings	5	5
Induction	Naturally aspirated	Naturally aspirated
Fuel System	Sequential Multiport	Sequential Multiport
Fuel Requirement (octane)	87 (min.)	87 (min.)/E85

2021 E-Series > Specs > Powertrain

Fuel System Data

Electronic Fuel Injection	7.3L PFI Gas V8 Premium-rated	Sequential Multiport Fuel Injection
	7.3L PFI Gas V8 Economy-rated	Sequential Multiport Fuel Injection
Fuel Pump	7.3L PFI Gas V8 Premium-rated	Electric-in-Tank High Pressure
	7.3L PFI Gas V8 Economy-rated	Single Electric-in-Tank High Pressure (one per tank)
Fuel Filter	7.3L PFI Gas V8 Premium-rated	In-line Large Capacity (One)
	7.3L PFI Gas V8 Economy-rated	In-line Large Capacity (One)
Air Cleaner	7.3L PFI Gas V8 Premium-rated	Dry Element, Replaceable
	7.3L PFI Gas V8 Economy-rated	Dry Element, Replaceable

GVWR/Payload/Spring & GAWR/Base Curb Weight

Model	WB (in.)	Engine/Trans.	Maximum GVWR (lbs.)	Maximum Payload (lbs.)	Spring/GAWR (lbs.)[1]		Base Curb Weight (lbs.)		
					Front Range Min.-Max.	Rear	Front	Rear	Total
E-350 Cutaway	138 SRW	7.3L PFI Gas V8 Premium/6R140	10,050	5,100	4,200	6,084	2,958	1,992	4,950
		7.3L PFI Gas V8 Economy/6R140	10,050	5,100	4,050-4,200	6,084	2,958	1,992	4,950
	138 DRW	7.3L PFI Gas V8 Premium/6R140	11,500	6,270	4,050-4,600	7,800	3,001	2,224	5,225
		7.3L PFI Gas V8 Economy/6R140	11,500	6,270	4,050-4,600	7,800	3,001	2,224	5,225
	158 SRW	7.3L PFI Gas V8 Premium/6R140	10,050	5,030	4,200	6,084	3,039	1,973	5,012
		7.3L PFI Gas V8 Economy/6R140	10,050	5,030	4,200	6,084	3,039	1,973	5,012
E-350 Cutaway	158 DRW	7.3L PFI Gas V8 Premium/6R140	11,500	6,210	4,200-4,600	7,800	3,082	2,205	5,287
		7.3L PFI Gas V8 Economy/6R140	11,500	6,210	4,050-4,600	7,800	3,082	2,205	5,287
		7.3L PFI Gas V8 Premium/6R140	12,500	7,210	4,200-5,000	8,500	3,082	2,205	5,287
		7.3L PFI Gas V8 Economy/6R140	12,500	7,210	4,050-5,000	8,500	3,082	2,205	5,287
	176 DRW	7.3L PFI Gas V8 Premium/6R140	12,500	7,200	4,200-5,000	8,500	3,148	2,149	5,297
		7.3L PFI Gas V8 Economy/6R140	12,500	7,200	4,200-5,000	8,500	3,148	2,149	5,297
E-350 Stripped Chassis	138 DRW	7.3L PFI Gas V8 Premium/6R140	11,500	6,870	4,400-4,600	7,800	2,421	2,204	4,625
		7.3L PFI Gas V8 Economy/6R140	11,500	6,870	4,200-4,600	7,800	2,421	2,204	4,625
	158 DRW	7.3L PFI Gas V8 Premium/6R140	12,500	7,820	4,600-5,000	8,500	2,480	2,198	4,678
		7.3L PFI Gas V8 Economy/6R140	12,500	7,820	4,600-5,000	8,500	2,480	2,198	4,678
	176 DRW	7.3L PFI Gas V8 Premium/6R140	12,500	7,760	4,600-5,000	8,500	2,535	2,197	4,732
		7.3L PFI Gas V8 Economy/6R140	12,500	7,760	4,600-5,000	8,500	2,535	2,197	4,732
E-450 Cutaway	158 DRW	7.3L PFI Gas V8 Premium/6R140	14,200	8,680	4,600	9,600	3,078	2,434	5,512
		7.3L PFI Gas V8 Premium/6R140	14,500	8,980	5,000	9,600	3,078	2,434	5,512

		7.3L PFI Gas V8 Economy/6R140	14,000	8,480	4,400-5,000	9,600	3,078	2,434	5,512
	176 DRW	7.3L PFI Gas V8 Premium/6R140	14,200	8,680	4,600	9,600	3,161	2,358	5,519
		7.3L PFI Gas V8 Premium/6R140	14,500	8,980	5,000	9,600	3,161	2,358	5,519
		7.3L PFI Gas V8 Economy/6R140	14,000	8,480	4,400-5,000	9,600	3,161	2,358	5,519
E-450 Stripped Chassis	158 DRW	7.3L PFI Gas V8 Premium/6R140	14,500	9,690	5,000	9,600	2,531	2,274	4,805
		7.3L PFI Gas V8 Economy/6R140	14,000	9,190	4,600-5,000	9,600	2,531	2,274	4,805
	176 DRW	7.3L PFI Gas V8 Premium/6R140	14,500	9,640	5,000	9,600	2,566	2,292	4,858
		7.3L PFI Gas V8 Economy/6R140	14,000	9,140	4,600-5,000	9,600	2,566	2,292	4,858

(1) Gross Axle Weight Rating is determined by the rated capacity of the minimum component of the axle system (axle, wheels, tires) of a specific vehicle. Front and rear GAWRs will, in all cases, sum to a number equal to or greater than the GVWR for the particular vehicle. Maximum loaded vehicle (including passengers, equipment and payload) cannot exceed the GVWR or GAWR (front or rear).

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

RFP 07-020 Exhibit J: Cutaway Specifications Page 4 Section 2.1 f. Speed limited to 68 mph

Proposer's Request: Shepard Bros Inc. respectfully requests the speed limiting specification be moved to the optional pricing section of the procurement with limits of 65 and 75 mph.

Reason for request: Speed Limitation is only available with specific option content. See the next two pages, which were extracted from the 2021 E-Series Cutaway/Stripped Chassis dealer sourcebook. The requested speed limits are the only settings available on the 2021 E450 chassis.

The District's Response: Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Shaunda Drake Date: 6/8/20

Pucks — frame (isolators) incl. 12 body mounts (incl. with School Bus Prep, Shuttle Bus Prep and Multi-Function School Activity Bus Prep Packages)	O	—
Rear-frame crossmember delete (NA with School Bus Prep Package or Multi-Function School Activity Bus Prep Package)	S(2)/O(1)	S(2)/O(1)
School Bus Prep Package (select Cutaway models; reqs. School Bus Yellow exterior paint)	O	—
Shuttle Bus Prep Package	O	—
Spacers		
Alternate lateral frame (6 lateral all WB; incl. frame pucks; NA with School Bus Prep Package or Multi-Function School Activity Bus Prep Package)	O	—
Standard pattern frame (4 long/2 lateral w/138" & 158" WB; 4 lateral/2 long w/176" WB; 6 lateral w/RV Stripped Chassis; incl. frame pucks; NA with School Bus Prep Package or Multi-Function School Activity Bus Prep Package)	O	—
Speed limitation — 65-mph governed top speed (reqs. 7.3L PFI Gas V8 Economy-rated and 40-gal. fuel tank up to 12,500-lb. GVWR on E-350; 7.3L PFI Gas V8 Economy-rated, DRW and 40-gal. fuel tank up to 14,000-lb. GVWR on E-450)	O(3)	O(3)
Speed limitation — 75-mph governed top speed (reqs. 7.3L PFI Gas V8 Economy-rated and 40-gal. fuel tank up to 12,500-lb. GVWR on E-350; reqs. 7.3L PFI Gas V8 Premium-rated on E-450)	O(3)	O(3)
Tires		
LT225/75R16E all-season BSW (DRW, Hankook)	S	S
LT245/75R16E all-season BSW (Cutaway SRW, Hankook)	S(1)	—
Steel valve stems (standard on DRW)	S	—
Trailer Towing Package — Class I (incl. with Motorhome Prep Package. Opt. with 7.3L PFI Gas V8 Economy-rated engine or 7.3L PFI Gas V8 Premium-rated engine with 4.10 axle or 4.56 SRW axle or E-450 Cutaway. NA with Ambulance Prep Package, Multi-Function School Activity Bus Package or School Bus Prep Prep Package)	O	O
Upfitter Interface Module (UIM)	O	—
Upgraded Trailer Towing Package — Class I (incl. on Motorhome Prep Package. Available only with 7.3L PFI Gas V8 Economy-rated engine and 4.56 DRW axle. NA with Ambulance Prep Package, Multi-Function School Activity Bus Prep Package or School Bus Prep Package)	O(1)	O(1)
User-defined switches — 4 upfitter switches on the instrument panel	O	—

(1) E-350 only.

(2) E-450 only.

(3) Fleet.

S = Standard

O = Available as a stand-alone option, part of a package or part of an Equipment Group

— = NA

NOTE: The above information is an excerpt to be used with the 1/17/20 E-Series Cutaway/Stripped Chassis Dealer Ordering Guide. For more information and the latest Dealer Ordering Guides, go to fmcdealer.com.

PACKAGED OPTIONS/EMISSIONS

AC PREP PACKAGE (57Z)
Availability:
- Optional on Stripped Chassis only

Includes:
- A/C Compressor, condenser, drive belt, tensioner attaching brackets and bolts

AMBULANCE PREP PACKAGE (47H)
NOTE: CHECK WITH UPFITTER ON CHARGE MARGIN ACCEPTABILITY
Availability:
- Optional on Cutaway only

Not available with:
- E-350 158" WB, SRW
- E-350 176" WB, DRW
- E-450 176" WB, DRW
- Seat options 21F, 21D, 21W, 21S, 21Z, 21B or 21T
- Trailer Tow Pkg. (534) or Upgraded Trailer Tow Pkg. (535)
- Motorhome Prep Pkg. (47R), School Bus Prep Pkg. (47S), Shuttle Bus Prep Pkg. (47B), Multi-Function School Activity Bus Prep Pkg. (47J)

Includes:
- Dual 78 amp-hr heavy-duty batteries (634)
- Auxiliary Heater – Air Conditioning Connector Package (57L)[1]
- Auxiliary Fuel Port (945)
- Limited-Slip Axle
- Alternator – 240 amp (63O)
- Front Max GAWR
- Spare Tire and Wheel (51A)
- Mirrors, Telescoping Trailer Tow with Manual Adjustments (54D)[2]
- Vinyl headliner and sun visors
- Two (2) exhaust heat shields mounted in mid-chassis, right-hand side for upfitter-installed frame pucks
- License plate bracket
- Badging (shipped in dunnage)

NOTE 1: May upgrade to Auxiliary Heater – Air Conditioning Connector Package with Rear Controls (57X)
NOTE 2: May select Exterior Mirror Delete (54F) to delete Manual Trailer Tow Mirrors (54D) from Ambulance Prep Package. Vehicle will be built without exterior mirrors. – OR – May select Telescoping Trailer Tow Mirrors with Power Glass Adjustments (54E) if Power Windows and Locks Group (903) is selected.
NOTE 3: May order optional Frame Pucks (559) when Alternate Lateral Frame Spacers (554) are not ordered, exclusive of prep package.
NOTE 4: May add Rear View Camera Kit (43C)
NOTE 5: May upgrade to Dual Alternator - 240 amp / 157 amp (63N)

AUXILIARY HEATER – AIR CONDITIONING CONNECTOR PACKAGE (57L) (w/o REAR A/C CONTROLS)
Availability:
- Optional on Cutaway only

Includes:
- Front heater connector
- Front air conditioning connector

NOTE: This package is intended to provide necessary hardware for body-builders to install own auxiliary system.

AUXILIARY HEATER – AIR CONDITIONING CONNECTOR PACKAGE (57X) (w/REAR A/C CONTROLS)
Availability:
- Optional on Cutaway only

Includes:
- Front heater connector
- Front air conditioning connector
- Rear A/C controls in instrument panel

NOTE: This package is intended to provide necessary hardware for body-builders to install own auxiliary system.

[1] Only available on MFSAB Prep Package (47J), School Bus Prep Package (47S), Motorhome Prep Package (47R) or Shuttle Bus Prep Package (47B)
[2] Only available on Motorhome Prep Package (47R) or Shuttle Bus Prep Package (47B)

SPEED LIMITATION – 75-MPH (917)
Availability: Fleet only w/valid FIN code
- E-350 Cutaway (SRW or DRW) with 40-gallon fuel tank
- E-450 Cutaway (DRW) with the 7.3L V8 Economy engine and 55-gallon fuel tank
- E-450 Cutaway (DRW) with the 7.3L V8 Premium engine and 40-gallon fuel tank or 55-gallon fuel tank
- E-350 Stripped Chassis (DRW) with 40-gallon fuel tank
- E-450 Stripped Chassis (DRW) with the 7.3L V8 Economy engine and 55-gallon fuel tank
- E-450 Stripped Chassis (DRW) with the 7.3L V8 Premium engine and 40-gallon fuel tank or 55-gallon fuel tank

Not available with:
- E-350 Cutaway (SRW) is not available with 10,050# GVWR and the 7.3L V8 Economy engine

SPEED LIMITATION – 65-MPH (916)
Availability: Fleet only w/valid FIN code
- E-350 Cutaway (SRW or DRW) with 40-gallon fuel tank
- E-450 Cutaway (DRW) requires 40-gallon fuel tank
- E-350 Stripped Chassis (DRW) with 40-gallon fuel tank
- E-450 Stripped Chassis (DRW) with 40-gallon fuel tank

Not available with:
- E-450 Cutaway (DRW) is not available with 14,500# GVWR and the 7.3L V8 Premium engine
- E-450 Stripped Chassis (DRW) is not available with the 7.3L V8 Premium engine

HIGH-SERIES EXTERIOR UPGRADE PACKAGE (18A)
Availability:
- Optional on Cutaway only

Includes:
- Front chrome bumper
- Chrome grille

RADIO PREP PACKAGE (58F), (58W)
Availability:
- Optional on Cutaway only

Includes:
- In-dash USB plug/cable for aftermarket radio, antenna, speaker grilles and wiring that are normally provided with single-CD radio packages
- 2 speakers (58F)
- 4 speakers (58W)

INSULATION PACKAGE (552)
Availability:
- Optional on Cutaway only
- Included with Interior Upgrade Package (18C)
- Not available with Motorhome Prep Package (47R)

Not available with:
- Rear View Camera Kit (43C)

Includes:
- Front cloth headliner
- Cloth sun visors

INTERIOR UPGRADE PACKAGE (18C)
Availability:
- Optional on Cutaway only

Not available with:
- Right Hand Door Delete (60X)
- School Bus Package (47S)
- Multi-Function School Activity Bus Package (47J)
- Motorhome Package (47R)
- Rear View Camera Kit (43C)

Includes:
- Front cloth headliner
- High-series door-trim panels
- Floor covering – front, black vinyl
- Dual Cloth Captain's Chairs (21A)
- Cloth sun visors
- Power door-locks and windows (903)
- Insulation Package (552)

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc.
Proposer/Vehicle Manufacturer

Exhibit J: Cutaway Specifications Page 6 Section 2.3.9

Proposer's Request:

Request approval to supply Safe Fleet exterior mirrors. Safe Fleet mirrors use a chassis mount curbside design to reduce vibration. The roadside installation unitizes the chassis OEM door mount. Safe Fleet will supply stainless steel mirror arms, outside turn signals, and upper/lower remote glass control. All Safe Fleet mirror glass is easily serviced with a mechanical attachment (Brochure attached).

The District's Response:

Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Shaunte Pride Date: 6/8/20

TRANSIT MIRRORS

SAFE FLEET Bus & Rail

SHUTTLE MIRROR

New Features

- Reduced vibration
- Inner & outer fender support = yields more stable mirror with less vibration
- Non-hood mount like typical "fender applications"
- Supplied drill fixtures for increased mounting consistency installation ease
- 10% reduced weight (compared to previous models)

Glass Options

- Heated
- Remote
- Outside Turn Signal (OTS)

Head Options

- 9" x 13"

23% VIBRATION REDUCTION!

U.S. Patent 9,180,816

MOTORCOACH MIRRORS

SAFE FLEET Bus & Rail

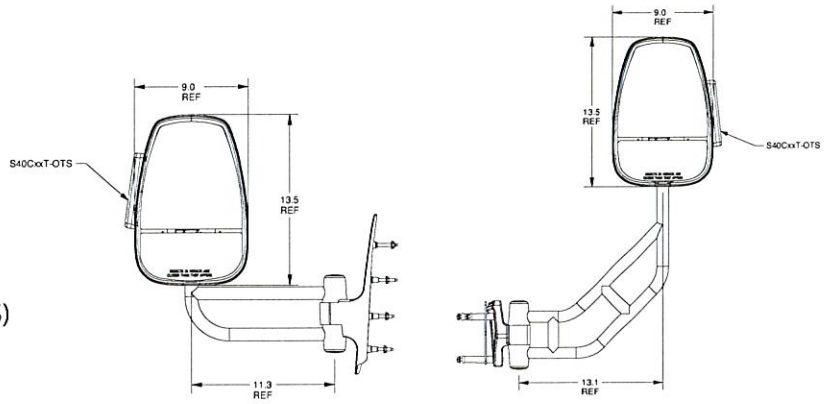
EXTERIOR & INTERIOR

Head Size

- 9" x 13"

As Specified

- Heated
- Remote
- Outside Turn Signal (OTS)



Roadside Mirror Ford E350/450	
Mirror Model 9x13	Part #
MFMCX	S40C06T
HMFHMCX	S40C08T
RFMCX	S40C22T
HRFHMCX	S40C10T
RFRCX	S40C24T
HRFHRCX	S40C12T

Curbside Mirror Ford E350/450	
Mirror Model 9x13	Part #
MFMCX	S40C07T
HMFHMCX	S40C09T
RFMCX	S40C23T
HRFHMCX	S40C11T
RFRCX	S40C25T
HRFHRCX	S40C13T

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

RFP 07-020 Exhibit J: Cutaway Specifications Page 7 2.5 Air Conditioning:

a. Front and rear air-conditioning shall be provided with dual compressor, three (3) fan condenser, 70,000 BTU rated A/C systems for Type A & B. At ambient conditions of 95F and 50% humidity,...

Proposer's Request: Shepard Bros Inc. respectfully requests the GHTD confirm that the specification requirment applies to all three body on chassis types (A,B, and C).

Reason for request: Clarification.

The request also applies to the following section:
RFP 07-020 Exhibit J: Cutaway Specifications Page 8

2.6 Electrical System:
a.
3. Battery compartment shall be of closed box type construction to keep the road dust and debris out and shall be large enough to hold two batteries for types A & B. Tray.....

The District's Response: Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Shaunda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

RFP 07-020 Exhibit J: Cutaway Specifications Page 12

g. Lift Door:

1. In addition to a front passenger door and rear emergency door, the vehicles shall have an ADA compliant door for the lift. The lift door shall be located on the curbside, immediately behind the passenger door for Types A & B.
2. Lift door shall have minimum 44" x 72 " high clear opening meeting all ADA requirements for this style

Proposer's Request: Shepard Bros Inc. respectfully requests the GHDT accept a wheelchair lift door with a clear opening of 68 inches minimum.

Reason for request: Although the Phoenix body has a wheelchair lift door with a 74" rough opening, the clear opening can be impacted by valances, padding, and hold open devices; however, the minimum clear opening is always 68" per ADA guidelines.

The District's Response: Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Jaqueline Drake Date: 6/8/20

APPROVED EQUAL FORM
*Attach as many of these forms as necessary to RFP

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

RFP 07-020 Exhibit J: Cutaway Specifications Page 14

l.

2. Seat Mounting Rails....threading bolts into and 11 gauge integral plate. The seats must then be bolted through the floor with ½" grade 8 bolts).

Proposer's Request: Shepard Bros Inc. respectfully requests the GHTD accept seat mounting hardware that meets the FMVSS seatbelt pull test requirement for the type of seat installed.

Reason for request: 1/2" grade 8 bolts will not fit through the bolt opening on most paratransit shuttle bus seats. The only seat that requires a 1/2" grade 8 bolts is a 2 passenger foldaway seat with integrated lap & shoulder belts.

The District's Response: Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Jaunda Dale Date: 6/8/20

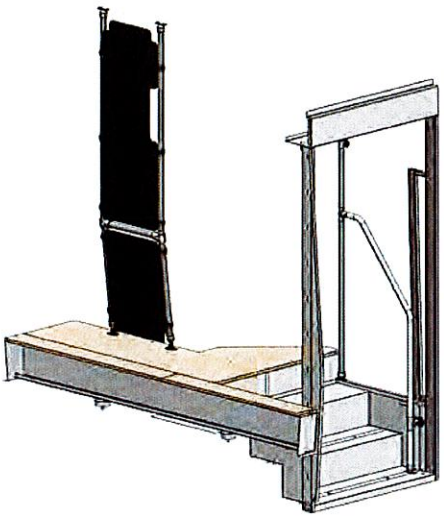
APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

RFP 07-020 Exhibit J: Cutaway Specifications Page 14

4. A vertical stanchion shall be installed at the right rear corner of operator's seat in such a position as neither to interfere with adjustment of operator's seat nor to obstruct the aisle. A guardrail shall extend from this stanchion to the wall on the left of the operator's seat.

Proposer's Request: Shepard Bros Inc. respectfully requests the GHTD accept a Driver's stanshios that stanchio guardrail that extends between two stanchion in lieu of to the wall (see print below).



The District's Response: Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

RFP 07-020 Exhibit J: Cutaway Specifications Page 14

4. A vertical stanchion shall be installed at the right rear corner of operator's seat in such a position as neither to interfere with adjustment of operator's seat nor to obstruct the aisle. A guardrail shall extend from this stanchion to the wall on the left of the operator's seat. A rigid, tinted plastic or molded Plexiglas shield shall be provided to the rear of operator station. The shield shall be wide enough and tall enough to eliminate the possibility of contact from a person or object originating from the passenger(s) directly to the rear of the operator's seat. The shield shall allow full adjustment for driver headrest and seat. The fasteners used to secure the modesty panels and the Plexiglas barrier shall be minimum 1/4" size, and driven into steel. Sheet metal screws shall not be used as fasteners to secure any panels, or grab rails.

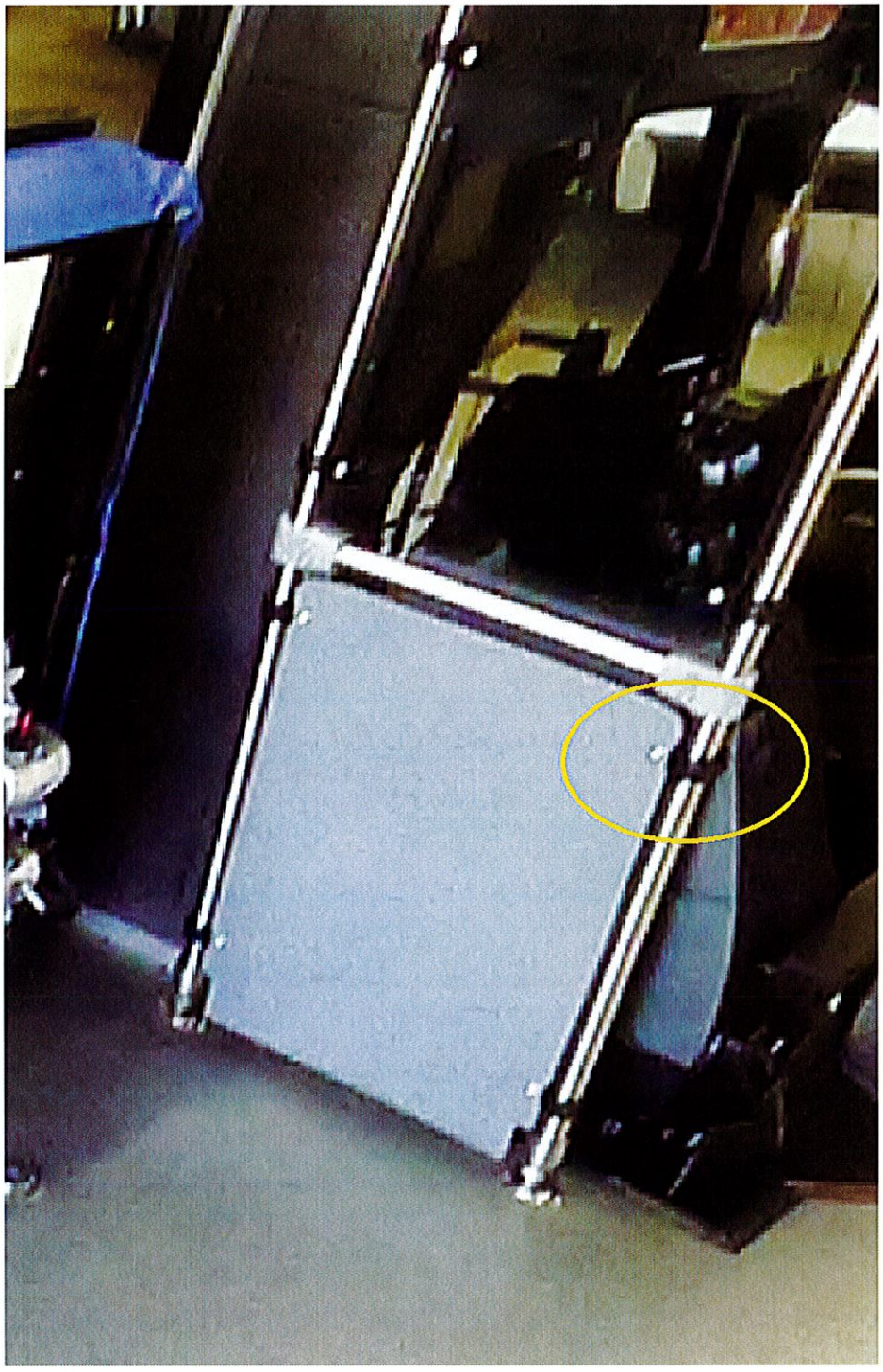
Proposer's Request: Shepard Bros Inc. respectfully requests the GHTD accept nylon clamps for securing panels to stanchions

Reason for request: Cleaner more durable installation (see attached).

The District's Response: Approved: X Denied: Noted: See Addendum: # 2

Comments:

Procurement Officer: Shaunda Dodd Date: 6/8/20



APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

RFP 07-020 Exhibit J: Cutaway Specifications Page 14-15

mi. Stanchion and Guard Rails:

7. Entrance grab rails shall be positioned on right and left sides of the door such that passengers shall have support while boarding or disembarking the vehicle. The left side (while entering the vehicle) grab rail shall be parallel to the steps. The right side grab rail shall be vertical, spread above and below the door rod, and shall be total minimum eighteen (18) inches high. The right side grab rail shall provide

Reason for Request: The Cutaway Specifications require an electric door; therefore, the reference to a right-side grab rail spread above and below the door rod conflicts with the specified entrance configuration. We suggest changing the verbiage to something like the following:

7. Entrance grab rails shall be positioned on right and left sides of the door such that passengers shall have support while boarding or disembarking the vehicle. The right and left side (while entering the vehicle) grab rails shall be parallel to the steps and extend to the bottom steps. The right side grab rail shall be vertical, spread above and below the door rod, and shall be total minimum eighteen (18) inches high. The grabs rail shall provide support for passengers from the ground level through the boarding process to the vestibule.

The District's Response: Approved: X Denied: Noted: See Addendum: #2

Comments: Agreed to change the verbiage.

Procurement Officer: Shaunda Dale Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

mi. Stanchion and Guard Rails:

8. Protective barriers shall be provided between the lift and the passengers seating immediately behind and in front of the lift. This shall be accomplished by providing a stanchion, a guardrail, and a Plexiglas panel provided above the guardrail. A padded panel shall be provided below the guardrail. The installation of a grab rail at least a 1/4' under the window on each side of the vehicle, extending 18' between each seat. The design shall ensure the safety of all passengers from any potential injury caused by exposure of the body parts to the lift.

Reason for Request: Clarification. We suggest changing the verbiage to something like the following:

8. Protective barriers shall be provided between the lift and the passengers seating immediately behind or in front of the lift. This shall be accomplished by providing a stanchion, a guardrail, and a Plexiglas panel provided above the guardrail. A padded panel shall be provided below the guardrail. The installation of a grab rail at least a 1/4' under the window on each the side of the vehicle, extending 18' between the seats and the lift. The design shall ensure the safety of all passengers from any potential injury caused by exposure of the body parts to the lift.

The District's Response: Approved: X Denied: Noted: See Addendum: # 2

Comments: Agreed to change the verbiage.

Procurement Officer: [signature] Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

RFP 07-020 Exhibit J: Cutaway Specifications Page 15

o. Body Dimensions: for B and C Type

Proposer's Request: Shepard Bros Inc. respectfully requests the GHTD confirm that the specification requirment applies to all three body on chassis types (A,B, and C).

Reason for request: Clarification.

The District's Response: Approved: X Denied: Noted: See Addendum: # 2

Comments: Specifications will apply to all three body types

Procurement Officer: LaShaunda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

o. Body Dimensions: for B and C Type
1. Body width shall be 96 inches maximum, excluding mirrors.
2. Body length shall be minimum 265 inches to maximum 303 inches including both the bumpers.
3. Wheelbase shall be 158~176 inches. Body manufacturer shall select body length and wheelbase such that the front and rear overhangs are within the CTDMV mandated regulations.
4. Body height shall not exceed one hundred twenty four (124) inches, and the roof hatch open in venting position.
5. Interior width in passenger compartment shall be a minimum ninety (90) inches

Proposer's Request#2: Shepard Bros Inc. respectfully requests the GHTD accept an overall measurement not including the bumpers.

Reason for request#2: DOT and Federal Motor Carrier Regulations does not include the bumpers when measuring rear overhang and overall length.

Proposer's Request#4: Shepard Bros Inc. respectfully requests confirmation that the base Cutaway specification does not require a roof hatch.

Reason for request#4: The specification references a roof hatch 3 times on page 15 and once on page 23; however, the base specification does not specifically require a roof hatch. A roof hatch can be proposed as an option.

The District's Response: Approved: X Denied: Noted: See Addendum: #

Comments:

Procurement Officer: Shaunda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

RFP 07-020 Exhibit J: Cutaway Specifications Page 16

11. Seating Layout:
The minibus shall contain a mix of mobility device positions, and foldaway seats to accommodate a range of passengers for A Type Buses from a minimum of two mobility devices and six ambulatory passenger and, from three mobility devices and six ambulatory passengers, to two mobility devices and eight ambulatory passengers for B Type Buses and, twelve ambulatory passengers for C Type Buses. The specific configuration (from rear to front) shall be as follows.

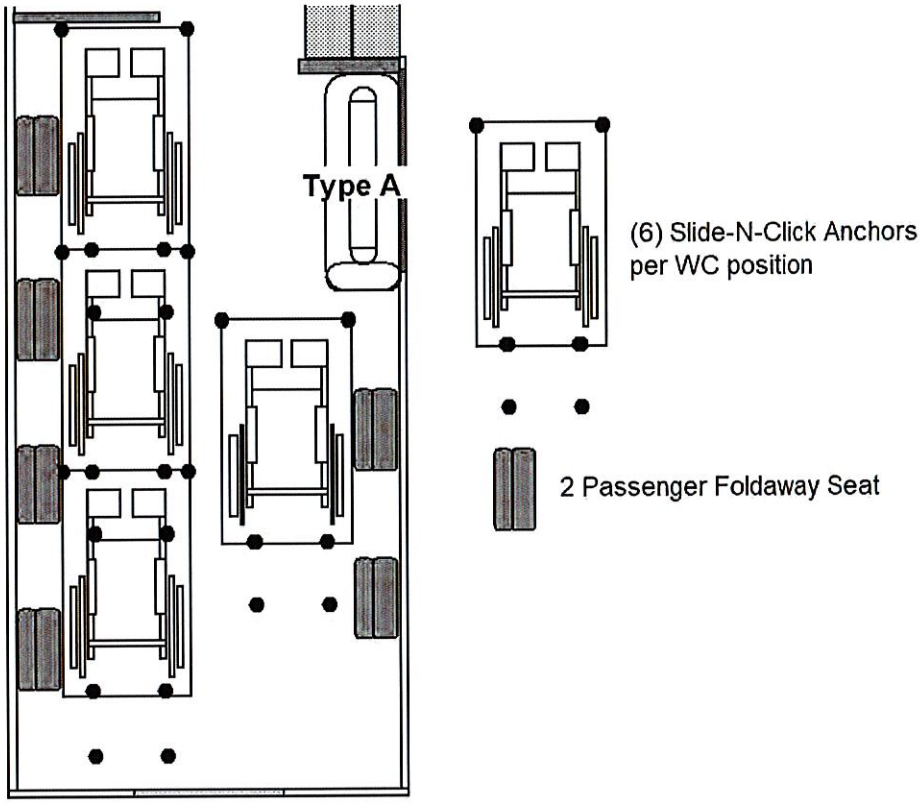
Proposer's Request: Shepard Bros Inc. respectfully requests the GHTD confirm the enclosed seating for layout and capacity for Types A, B, and C (diagrams enclosed).

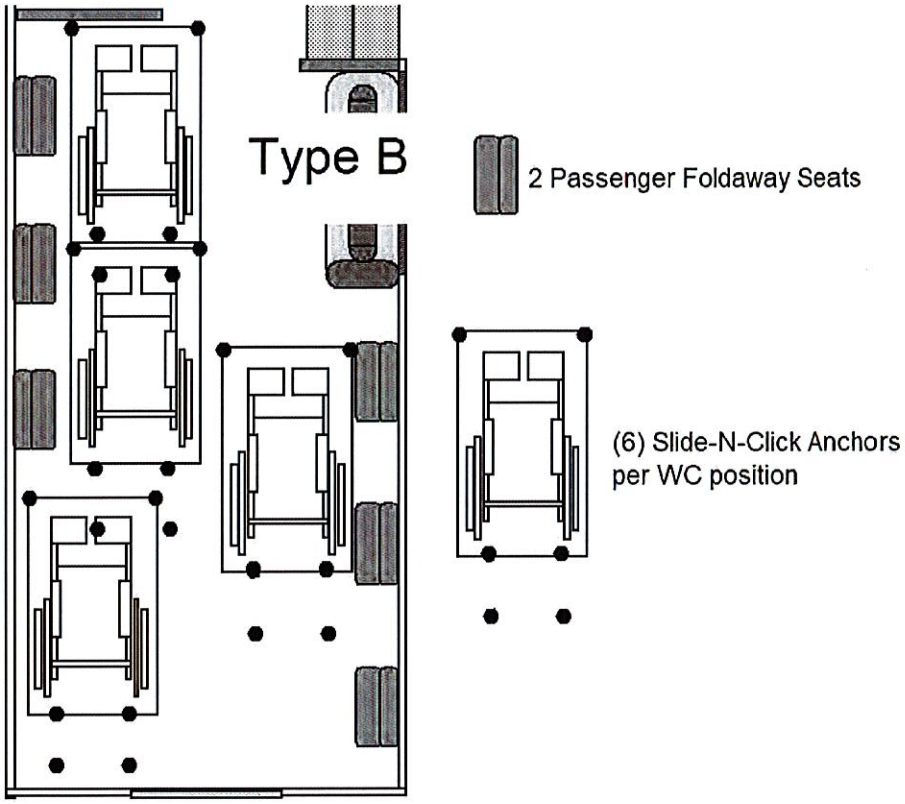
Reason for request: The seating layout description seems to conflict with the specification diagrams.

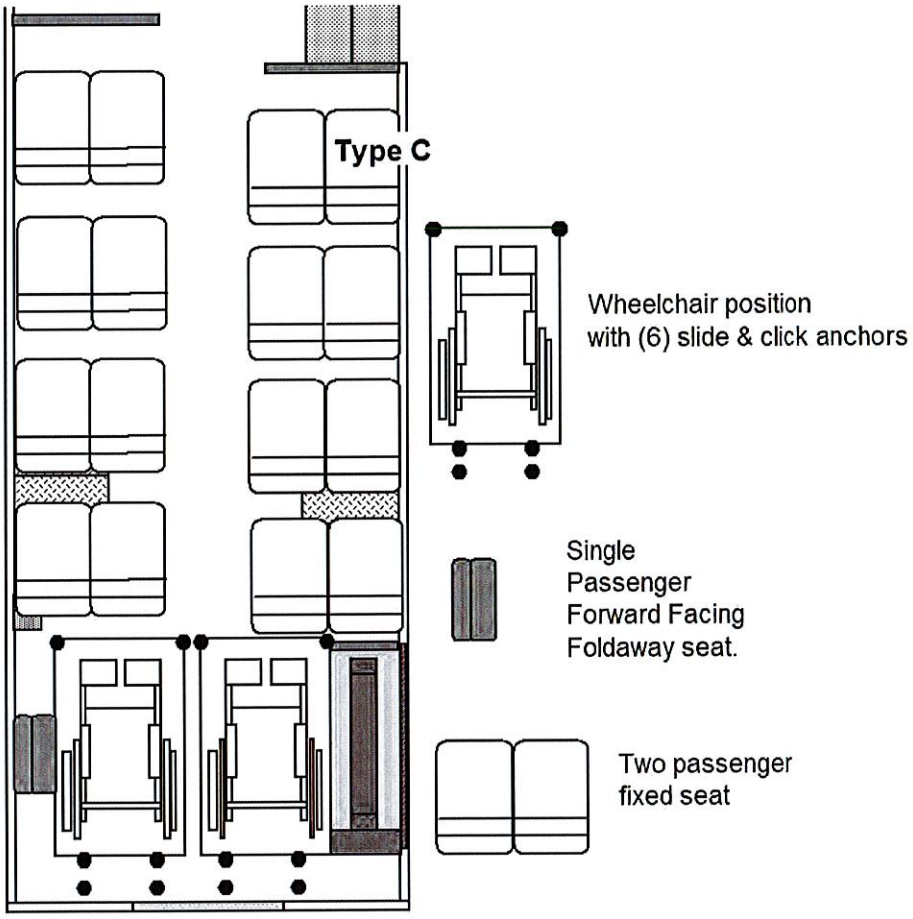
The District's Response: Approved: X Denied: Noted: See Addendum: # 2

Comments:

Procurement Officer: Shaunda Drake Date: 6/8/20


Type A
(6) Slide-N-Click Anchors
per WC position
2 Passenger Foldaway Seat


Type B
2 Passenger Foldaway Seats
(6) Slide-N-Click Anchors
per WC position


Type C
Wheelchair position
with (6) slide & click anchors
Single
Passenger
Forward Facing
Foldaway seat.
Two passenger
fixed seat

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

d. The securement belts shall be self-retractable type and shall attach to L type, flanged, scooped ends type, floor mounted track receivers. The tracks shall be supplied by Securement System OEM and made of corrosion-resistant aluminum. Four L-tracks, each minimum one hundred and fifty (150) inch long shall be provided on streetside immediately behind the operator's position in the longitudinal direction. Center distance between the interior two tracks shall be fifteen (15) inches, and that between the exterior two tracks shall be thirty (30) inches. One, minimum thirty-six (36) inches long 'L' track shall be provided in the transverse direction at the end of 150" long L-tracks. The tracks shall be flush mounted such that only the flanges shall overlap the edge of the floor rubber. An additional 150" long L-track shall be installed on the street side wall immediately above the windows for locating the shoulder harness(s).
e. Top bracket for the shoulder harness shall have an automatic height adjustable shoulder harness guide with a minimum five (5) inches of vertical adjustment. All wheelchair occupant restraints shall have "L" track fittings for securing the restraints to the floor and or vehicle sidewall. The restraints shall be infinitely locatable throughout the 150" of longitudinal track. The installation shall provide for the shoulder harness to be diagonally placed across the passenger's chest below the neck level, but above the lower abdomen, per SAE J2249, Appendix F. The installation shall be tested on the prototype and the Contractor shall make all changes

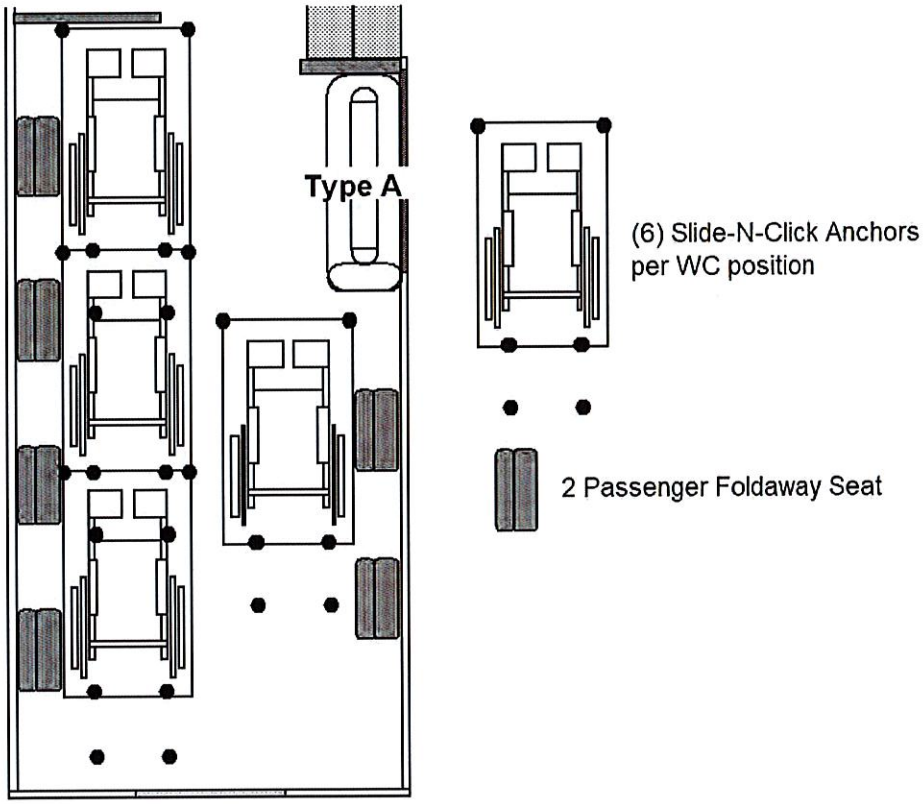
Proposer's Request: Shepard Bros Inc. respectfully requests the GHTD confirm the use of Slide-N-Click floor anchors per the enclosed diagrams for Types A, B, and C. Additionally we request the use of "L" Track above the windows and at the seat rail for the placement of the occupant restraints: 15 inches of upper and lower "L" track per wheelchair position.

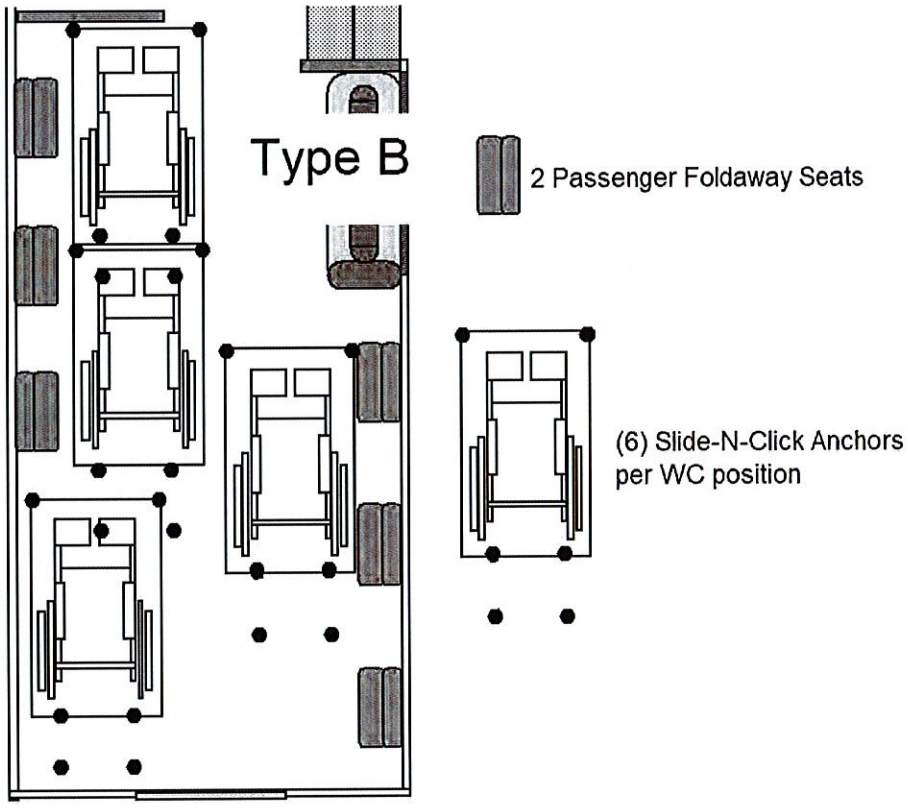
Reason for request: Verbiage conflicts with the diagrams.

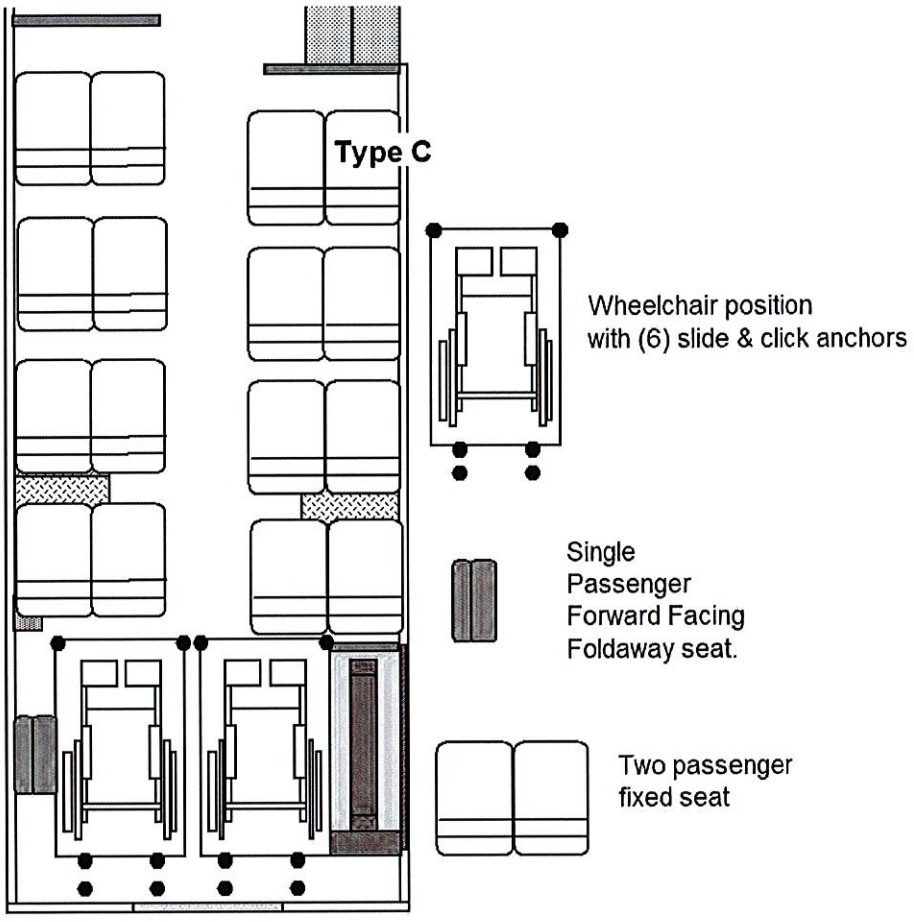
The District's Response: Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Jaunder Drake Date: 6/8/20


Type A
(6) Slide-N-Click Anchors
per WC position
2 Passenger Foldaway Seat


Type B
2 Passenger Foldaway Seats
(6) Slide-N-Click Anchors
per WC position


Type C
Wheelchair position
with (6) slide & click anchors
Single
Passenger
Forward Facing
Foldaway seat.
Two passenger
fixed seat

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

RFP 07-020 Exhibit J: Cutaway Specifications Page 21 2.10 Lift:

e. The lift shall be totally self-contained and connect only to the vehicle's electrical system. Installation of the lift shall be done without modifications to the vehicle frame. The lift platform shall be oriented in the center of the lift door in a manner that the platform or railing does not rub against the doorframe during any part of lift operation. Vehicle body manufacturer shall use the lift manufacturer supplied brace plate or bars to support the underside of the plywood floor. The lift shall be reinforced by being mounted onto a 3/16" steel plate on top of the floor and shall be bolted directly to frame members. The lift shall be installed so as to be readily accessible for maintenance and repair.

Proposer's Request: Shepard Bros Inc. respectfully requests the GHTD accept standard wheelchair lift installation (see digram for description).

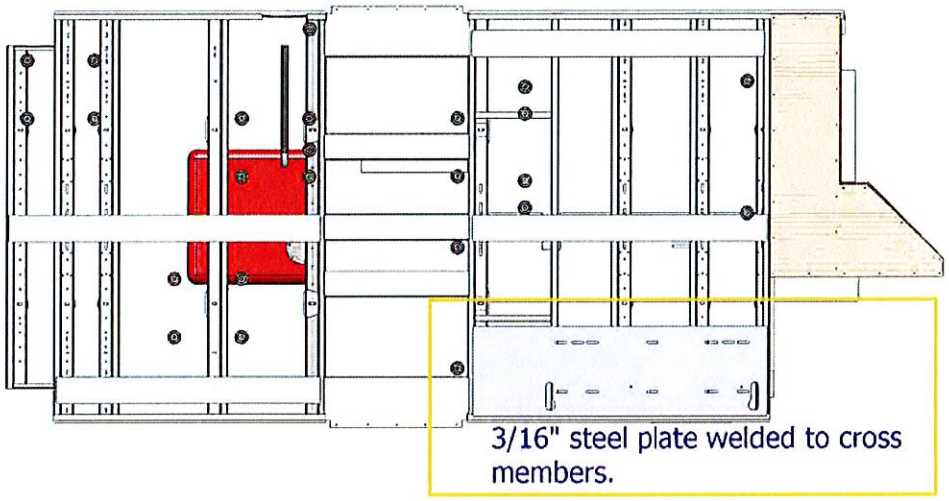
Note: The steel plate is under the plywood.

Reason for request: Coach & Equipment standard wheelchair lift installation exceeds the specification. The installation has been tested with an 1800 lb. static load with no vehicle deformation.

The District's Response: Approved: X Denied: Noted: See Addendum: # 2

Comments:

Procurement Officer: Shaunda Drake Date: 6/8/20


3/16" steel plate welded to cross members.

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

RFP 07-020 Exhibit J: Cutaway Specifications Page 23

o. All decals shall be self-adhesive type and shall be applied in accordance with the
- manufacturer's instructions. The edges and corners shall be sealed to preclude any possibility of peeling. The interior walls of the vehicles shall be smooth for proper application and permanent retention of the decals. In case the walls are not smooth, a Plexiglas board or a Stainless Steel sheet screwed on the wall shall be used for application of the decals. No decal shall be applied on a padded vinyl surface. Hand written signs shall not be acceptable.

Proposer's Request: Shepard Bros Inc. respectfully requests the GHTD accept the use of dense PVC signboards installed with nylon tree fasteners in lieu of plexiglass or stainless steel.

Reason for request: Dense PVC signboards are lighter, should last the life of the vehicle and fit well with the vehicle trim.

The District's Response: Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Shaunda Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

RFP 07-020 Exhibit J: Cutaway Specifications Page 26

- Liquefied Petroleum Gas

Engine: The engine shall be a dedicated propane system with the following specifications:
1. OEM Approved Alternative Fuel Supplier that maintains OEM Warranty.
2. Dedicated liquid injection with 40 plus usable gallons.
3. 6.8L V-10 (or approved equal) with hardened valve/seats – "alternative fuel package"

Proposer's Request: Shepard Bros Inc. respectfully requests the GHTD change the specification to a 7.3L V-8.

Reason for request: The 6.8L V-10 has been discontinued and replaced by the 7.3L V-8.

Note: Both 7.3L engine designations (premium and Econo) are available with the gaseous fuel prep package,

The District's Response: Approved: X Denied: Noted: See Addendum: #2

Comments:

Procurement Officer: Saundra Drake Date: 6/8/20

APPROVED EQUAL FORM
**Attach as many of these forms as necessary to RFP*

Shepard Bros., Inc. (Bus Sales Division)
Proposer/Vehicle Manufacturer

RFP 07-020 Exhibit J: Cutaway Specifications Page 29

- The DVR must support the ability to remain powered on, up to 4 hours after the ignition is turned off. This time must be able to be adjusted.
- The DVR must be able to detect and report video loss from ~~any of the 6 cameras.~~ any cameras installed
- The DVR must be able to control the Infrared setting of the cameras (via CoC – Control over Coax).
- The DVR must be able to stay on for up to 7 secs to complete recording after a sudden power loss during an accident.

Proposer's Request: Shepard Bros Inc. respectfully requests the GHTD clarify that the base video surveillance system has five cameras included.

Reason for request: The language could be interpreted that a sixth camera is included.

Note: An additional and or different cameras can be offered in the option section of the RFP.

The District's Response: Approved: X Denied: Noted: See Addendum: #2

Comments: Agreed to change the verbiage.

Procurement Officer: Jaumbe Drake Date: 6/8/20