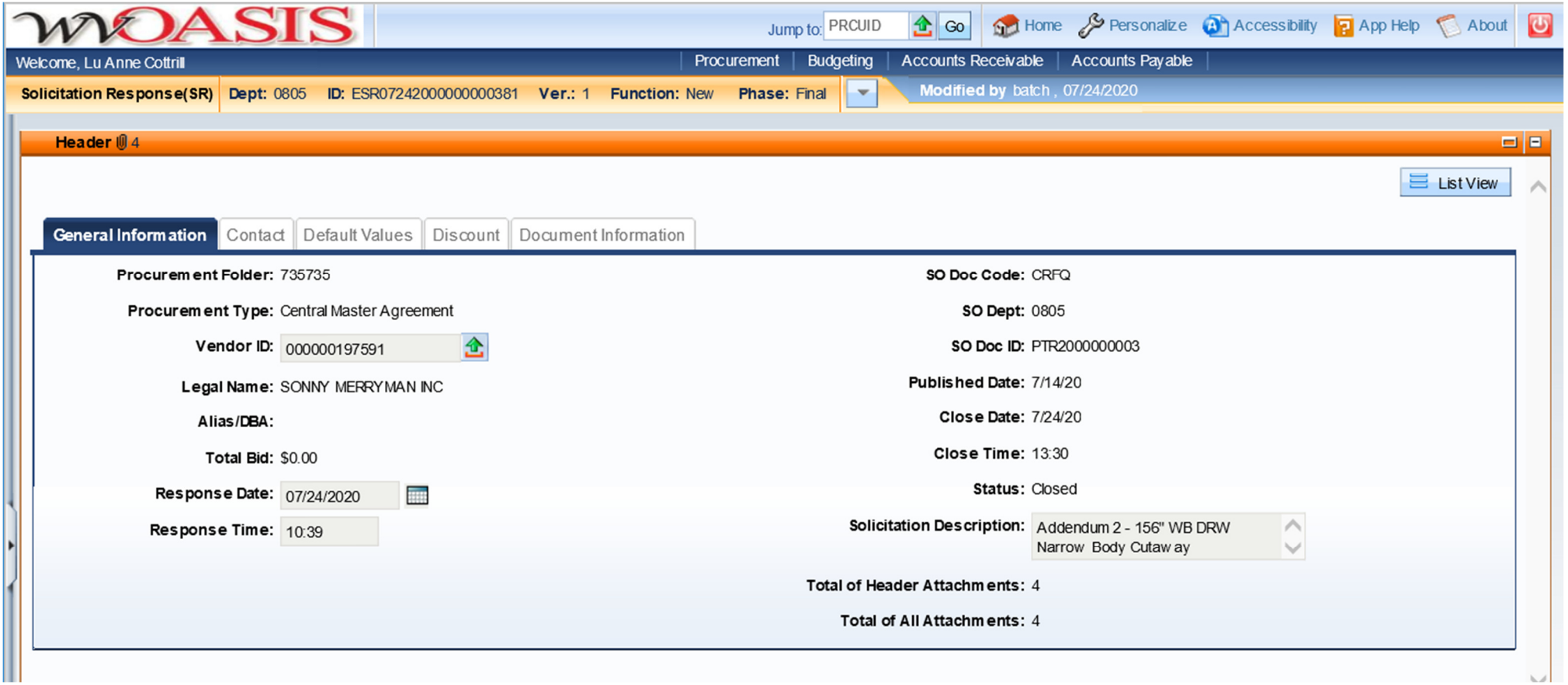


The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.


WVOASIS
Jump to: PRCUID Go
Home
Personalize
Accessibility
App Help
About
Welcome, Lu Anne Cottrill
Procurement
Budgeting
Accounts Receivable
Accounts Payable
Solicitation Response(SR) Dept: 0805 ID: ESR07242000000000381 Ver.: 1 Function: New Phase: Final
Modified by batch , 07/24/2020
Header 4
List View
General Information
Contact
Default Values
Discount
Document Information
Procurement Folder: 735735
Procurement Type: Central Master Agreement
Vendor ID: 000000197591
Legal Name: SONNY MERRYMAN INC
Alias/DBA:
Total Bid: $0.00
Response Date: 07/24/2020
Response Time: 10:39
SO Doc Code: CRFQ
SO Dept: 0805
SO Doc ID: PTR2000000003
Published Date: 7/14/20
Close Date: 7/24/20
Close Time: 13:30
Status: Closed
Solicitation Description: Addendum 2 - 156" WB DRW Narrow Body Cutaway
Total of Header Attachments: 4
Total of All Attachments: 4

Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Solicitation Response

Proc Folder : 735735

Solicitation Description : Addendum 2 - 156" WB DRW Narrow Body Cutaway

Proc Type : Central Master Agreement

Date issued	Solicitation Closes	Solicitation Response	Version
	2020-07-24 13:30:00	SR 0805 ESR07242000000000381	1

VENDOR

000000197591

SONNY MERRYMAN INC

Solicitation Number: CRFQ 0805 PTR2000000003

Total Bid : $0.00 **Response Date:** 2020-07-24 **Response Time:** 10:39:25

Comments:

FOR INFORMATION CONTACT THE BUYER

Linda B Harper

(304) 558-0468
linda.b.harper@wv.gov

Signature on File **FEIN #** **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	156" WB DRW Narrow Body Cutaway	0.00000	EA	$2,650,730.000000	$0.00

Comm Code	Manufacturer	Specification	Model #
25101502			

Extended Description : 156" WB DRW Narrow Body Cutaway

Sonny Merryman Inc. - Startrans Candidate II

Request for Quotation
156" Wheelbase Transit Van Dual Rear Wheel (DRW) Narrow Body Cutaway Vehicle
Exhibit A - Pricing Page

CLASS	ITEM DESCRIPTION	UNIT PRICE PER VEHICLE	EST QTY	EXTENDED PRICE
A	Vehicle Non-Accessible / Paratransit Package	$71,405.00	2	$ 142,810.00
B	Vehicle with One Wheelchair (WC) Positions/ Paratransit Package	$77,657.00	2	$ 155,314.00
C	Vehicle with Two Wheelchair (WC) Position / Paratransit Package	$77,236.00	2	$ 154,472.00
D	Vehicle/ Front Lift / 3 WC Positions	$78,456.00	2	$ 156,912.00
E	Vehicle/ One Wheelchair (WC)/ Fixed Route Package	$82,157.00	2	$ 164,314.00
F	Vehicle/Two WC / Fixed Route Package	$81,898.00	2	$ 163,796.00
G	Vehicle/ Front Lift / Three Wheelchair Positions/ Fixed Route Package	$83,075.00	2	$ 166,150.00
H	Vehicle/ One WC Position / Fixed Route Package / Full Bus Paint	$86,858.00	2	$ 173,716.00
I	Vehicle / 2 WC Positions / Fixed Route Package / Full Bus Paint	$85,723.00	2	$ 171,446.00
J	Vehicle /Front Lift / Three WC Positions/ Full Bus Paint	$87,866.00	2	$ 175,732.00
K	Vehicle/One WC/Fixed Route Package/ Three Quarter Body Paint with Expanded Graphics Vehicle Skirt Painting	$87,525.00	2	$ 175,050.00
L	Vehicle/Two WC/Fixed Route Package/ Three Quarter Body Paint with Expanded Graphics Vehicle Skirt Painting	$86,573.00	2	$ 173,146.00
M	Vehicle/Front Lift / Three WC/Fixed Route Package/ Three Quarter Body Paint with Expanded Graphics	$87,750.00	2	$ 175,500.00
N	Vehicle/One WC/Fixed Route Package/Vehicle Skirt Painting	$82,795.00	2	$ 165,590.00
O	Vehicle / Two WC Position/ Fixed Route Package / Vehicle Skirt Painting	$83,228.00	2	$ 166,456.00
P	Vehicle /Front Lift / Fixed Route Package / Vehicle Skirt Painting	$83,713.00	2	$ 167,426.00
				$
A1	Option to add Bus Driver Safety Barrier	$1,450.00	2	$ 2,900.00
	TOTAL BID AMOUNT FOR EVALUATION			$ 2,650,730.00

Complete form provided.
Please note these are only estimated quantities and do not reflect any guarantee of purchase
The DPT may purchase more or less as needed.

Sonny Merryman INC.

July 22 , 2020

State of West Virginia
Attn; Linda B Harper
2019 Washington ST E
Charleston, WV. 25305

Ms. Harper:

Sonny Merryman, Inc. is pleased to offer the following proposal in response to CRFQ 0805 PTR2000000003 156" WB DRW Narrow Body Cutaway Buses. We are offering the Startrans Candidate II built on a Ford Transit chassis. The vehicle offered meets the specifications outlined except for the following:

1) We are providing an upgrade to the chassis GVWR to 11,000 GVWR
2) On Classes C,F,I & L a double fold-a-way seat is not available due to space limitations in the securement area.

Sonny Merryman Inc. agrees to be bound by the proposal without modifications, unless mutually agreed to upon further negotiations between State of West Virginia. This proposal is valid for (150) calendar days. We acknowledge and meet all warranty requirements outlined in this bid.

At time of this bid submittal Startrans is awaiting a determination from the FTA in regard to the required Altoona testing (Partial or Full) that will be required for the new engine in the Ford Transit Cutaways. Regardless of the testing required it will be completed prior to delivery.

Startrans is a well-established supplier in the industry manufacturing quality American made products. Sonny Merryman, Inc. a Virginia incorporated business and has provided quality sales and service to institutions and Governmental agencies since 1967. We look forward to a successful partnership on this procurement.

Principal point of contact:
C. Chad Seals
Commercial Sales
P.O. Box 495
Rustburg, VA. 24588
1-800-533-1006 Ext. 8606
(F) 1-434-821-4456
chad@sonnymerryman.com

Thank you for this opportunity and please call if you have questions.

Sincerely,

C. Chad Seals
Sonny Merryman, Inc.

July 22 , 2020

State of West Virginia
Attn; Linda B Harper
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Sincerely,

C. Chad Seals
Sonny Merryman, Inc.

ADA Certification

Certification of Compliance with the Americans with Disabilities Act of 1990

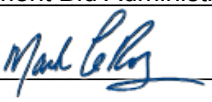
Startrans Bus hereby certifies that it shall comply with all requirements relating to vehicle design or special equipment design as required by the Americans with Disabilities Act of 1990 and any other federal accessibility regulations and subsequent amendments thereto that may be applicable to this procurement.

Date: 8/29/16

Company Name: Startrans

Name of Authorized Company Representative: Mark LeRoy

Title: Government Bid Administrator

Signature: 

STARTRANS BUS
a division of Forest River, Inc.

To: Whom it May Concern

From: Larry Hall, Director of Engineering

All StarTrans Models are fully compliant with any FMVSS, ADA and any other industry regulating standards in effect at the time of manufacture of a product.

StarTrans models are all added on to fully assembled chassis by Ford, General Motors, Freightliner or International. The chassis manufacturers each certify their products fully comply with all FMVSS, EPA and all other regulating agencies as applicable independently of body conversion applicable standards.

Please contact this office should any questions arise.

Sincerely,

Larry Hall

Director of Engineering

2408 Century Drive • Goshen, IN 46528 • 800.348.7440

Bus Sales | Service | Parts | Trailers & Containers

July 23, 2020

State of West Virginia
2019 Washington Street East
Charleston, WV. 25305

EXECUTIVE SUMMARY
REQUEST FOR Quotation (RFQ) PTR2000000003
ISSUED: June 30, 2020
RESPONSE SUBMITTED BY:
SONNY MERRYMAN, INC
Mailing Address:
PO Box 495
Rustburg, VA 24588

Physical Address:
5120 Wards Road
Evington, VA 24550

Persons Authorized to act on behalf of Sonny Merryman, Inc.

C. Chad Seals – Commercial Sales
800-533-1006 x8606
PO Box 495
Rustburg, VA 24588
chad@sonnymerrymn.com

Persons authorized to submit mandatory reports as required in section IX:

A. Small Business Utilization – C. Chad Seals – Contact Info Above
B. Quarterly Sales Reports – C. Chad Seals – Contact Info Above
C. Surcharge Adjustment Fee –

Cindy Cutler – Secretary / Treasurer
800-533-1006 X8612
PO Box 495
Rustburg, VA 24588
cindy@sonnymerryman.com

If successful, this account will be managed by C. Chad Seals, Commercial Sales representative. Mr. Seals has been successfully managing contracts with the Virginia Department of Rail and Public Transportation for more than 20 years. He has also successfully managed contracts with the Commonwealth of Virginia Division of Purchases and Supply, the Virginia Department of Transportation, The Metropolitan Washington Council of Governments, The Virginia Department of Corrections and multiple local governments.
Sonny Merryman, Inc. has had long and successful partnerships with many agencies similar to the anticipated recipients for this contract. We know the customer base well and know their equipment preferences. We also have extensive knowledge of paint schemes, options preferences, seat coverings, etc. If we receive an award we will be able to seamlessly transition the purchasers to this new and exciting mass transportation option.
As will be mentioned throughout our proposal we invest heavily and take great pride in our after the sale service capabilities and performance. We feel strongly that the best investment we can make to encourage sales growth is to take care of the customers we have.
We will be bidding on the Ford Transit chassis only. The body manufacturer we represent is Forest River/ Startrans. They are an industry leader in mobility vehicles and have had a long partnership with Ford in this class of vehicles.

We comply with all proposal requirements.

Bus Sales | Service | Parts | Trailers & Containers

July 23, 2020

State of West Virginia
2019 Washington Street East
Charleston, WV. 25305

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We comply with all proposal requirements.

STARTRANS BUS
a division of Forest River, Inc.

FMVSS/CMVSS Compliance Summary 2019-20 **Commercial and MFSAB**

This vehicle conforms to all applicable U.S Federal Motor Vehicle Safety Standards and Canadian Motor Vehicle Safety Standards in effect on the date of manufacture

C/FMVSS No.	Standard Description	Compliance Action
101	Control Location, Identification and Illumination	Startrans does not alter the OEM controls or displays. Any aftermarket seats and/or controls or displays subject to the standard meet this standard.
102	Transmission Shift Lever Sequence, Starter Interlock & Transmission Braking Effect	Compliance is deferred to the chassis manufacturer.
103	Windshield Defrosting & Defogging Systems	Compliance is deferred to the chassis manufacturer.
104	Windshield Wiping & Washing Systems	Compliance is deferred to the chassis manufacturer.
105	Hydraulic Brake Systems	Test data kept on file for vehicles that have had the wheelbase extended, or have had other system modifications. For unmodified vehicles, compliance is deferred to the chassis manufacturer.
106	Brake Hoses	Vehicles with wheelbase modifications have additional lines installed by chassis modifiers using OEM components. Other vehicles that have had system modifications use OEM or OEM-approved components and are tested for compliance. For Non-stretched vehicles compliance is deferred to the chassis manufacturer.
108	Lamps, Reflective Devices & Associated Equipment	Startrans does not alter OEM lighting. Additional lighting to include brake, turn, clearance, auxilary and reverse lamps meet standard. Data on file.
108.1	Alternative Requirements for Headlamps	Startrans does not alter OEM lighting. Compliance is deferred to the chassis manufacturer.
110	Tire Selection and Rim for Motor Vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
111	Rear View Mirrors	All aftermarket mirrors installed by Startrans meet this standard and DOT regulations.
112	Headlamp Concealment Devices	Startrans does not manufacture vehicles with headlamp concealment devices.
113	Hood latch systems	Compliance is deferred to the chassis manufacturer.
114	Theft Protection	Compliance is deferred to the chassis manufacturer.
115	Vehicle Identification Number	Compliance is deferred to the chassis manufacturer.
116	Hydraulic Brake Fluids	Startrans does not alter brake systems. Vehicles with modified wheelbases have additional fluid added by chassis modifiers using OEM instruction and materials. All other system modifications utilize only OEM-approved fluid. For unmodified vehicles, compliance is deferred to the chassis manufacturer.
118	Power Operated Window, Partition, and Roof Panel Systems	Compliance is deferred to the chassis manufacturer.
120	Tire Selection and Rim for Motor Vehicles with a GVWR of 4,536kg (10,000 lbs.) or More	Compliance is deferred to the chassis manufacturer.
121	Air Brake Systems	Vehicles with wheelbase modifications have additional lines installed by chassis modifiers using OEM components. Other vehicles that have had system modifications use OEM or OEM-approved components and are tested for compliance. For unmodified vehicles, compliance is deferred to the chassis manufacturer.
124	Accelerator Control Systems	Startrans does not alter the OEM accelerator system, with the exception of the addition of aftermarket fast idle systems on some vehicles. These systems meet this standard when installed in accordance with instructions.
125	Warning Devices	All vehicles manufactured by Startrans that are equipped with aftermarket (3) triangle kit meet this standard.
131	School Bus Pedestrian Safety Devices	All vehicles manufactured by Startrans are not completed to be used as school buses.
135	Light Vehicle Brake System with a GVWR of 3,500kg (7,716lbs.) or Less	Startrans does not manufacture vehicles with a GVWR of 3,500kg (7,716 lbs.) or Less.
201	Occupant Protection in Interior Impact	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
202	Head Restraints	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.

STARTRANS BUS
a division of Forest River, Inc.

FMVSS/CMVSS Compliance Summary 2019-20 **Commercial and MFSAB**

This vehicle conforms to all applicable U.S Federal Motor Vehicle Safety Standards and Canadian Motor Vehicle Safety Standards in effect on the date of manufacture

203	Impact Protection for the Driver from the Steering Control System	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
204	Steering Control Rearward Displacement	Compliance is deferred to the chassis manufacturer.
205	Glazing Materials	No modifications are made to the OEM Glazing materials. Additional glazing materials meet the standard. Data on file.
206	Door Locks and Door Retention Devices	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
207	Seating System	All seating installed by Startrans meets this standard. Test data on file.
208	Occupant Crash Protection	No alterations are made to the OEM seat belts, air bag systems or associated hardware. Any seat belt systems added meet the standard. Test data on file.
209	Seat Belt Assemblies	No alterations are made to the OEM seat belts or associated hardware. Any seat belt systems added meet the standard. Test data on file.
210	Seat Belt Assembly Anchorage	No alterations are made to the OEM seat belts or associated hardware. Seat belt systems and their installation meet the standard. Test data on file.
210.1	User-ready Tether Anchorages for Restraint System	No alterations are made to the OEM seat belts or associated hardware. Seat belt systems and their installation meet the standard. Data on file.
210.2	Lower Universal Anchorage Systems for Restraint Systems and Booster Cushions	No alterations are made to the OEM seat belts or associated hardware. Seat belt systems and their installation meet the standard. Data on file.
212	Windshield Mounting	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
213	Child Restraint Systems	Vehicles manufactured by Startrans, that are subject to this standard, have seating installed that meets this standard. Test data on file.
213.4	Built-in Child Restraint Systems and Built-in Booster Cushions	Vehicles manufactured by Startrans, that are subject to this standard, have seating installed that meets this standard. Test data on file.
214	Side Impact Protection with a GVWR of 4,536kg (10,000 lbs.) or Less	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
216	Roof Crush Resistance	Startrans does not manufacture vehicles with a GVWR of 2,722kg (6,000 lbs.) or Less.
217	Bus Window Retention and Release	No modifications are made to the OEM windows. Additional windows meet the standard. Test data on file.
219	Windshield Zone Intrusion	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
220	School Bus Rollover Testing	All vehicles manufactured by Startrans meet this standard. Test data on file
221	School Bus Body Joint Strength	All vehicles manufactured by StarTrans are not completed to be used as school buses, however, StarTrans does test vehicles to meet standard.
222	School Bus Passenger Seating and Crash Protection	All MFSAB vehicles manufactured by Startrans meet this standard. Test data on file
225	Child Restraint Anchorage Systems	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
301	Fuel System Integrity	Compliance is deferred to the chassis manufacturer.
301.1	LPG Fuel System Integrity	Compliance is deferred to the chassis manufacturer.
301.2	CNG Fuel System Integrity	Compliance is deferred to the chassis manufacturer.

STARTRANS BUS
a division of Forest River, Inc.

FMVSS/CMVSS Compliance Summary 2019-20 **Commercial and MFSAB**

This vehicle conforms to all applicable U.S Federal Motor Vehicle Safety Standards and Canadian Motor Vehicle Safety Standards in effect on the date of manufacture

302	Flammability of Interior Materials	Materials installed in the interior of Startrans products meet the standard. Test data on file.
303	Fuel System Integrity of Compressed Natural Gas Systems	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
304	Compressed Natural Gas Fuel Container Integrity	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
305	Electrolyte Spillage and Electrical Shock Protection	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
403	Platform Lift System for Motor Vehicles	Startrans does not alter the platform lift system. Startrans install lift system in strict compliance with the manufacturers installation instructions. Startrans meets strength requirements. Test data on file.
404	Platform Lift Installation on Motor Vehicles	Compliance is deferred to the lift manufacturer.
1106	Noise Emissions	Startrans does not alter the OEM Chassis in the area which is stated in the incomplete vehicle documents. Data on file.

Signed: _____ Date: 1/02/2019

Title: Compliance Manger

Ford Motor Company

Is proud to recognize

Starcraft Commercial Bus (Forest River)

as a participant in the

Transit Bus

Qualified Vehicle Modifier Program

QVM QUALIFIED VEHICLE MODIFIER

Richard D. Cupka -- SVE Quality Programs Mgr.

June, 2016

Forest River, Inc.

55470 County Road 1, P.O. Box 3030, Elkhart, Indiana 46515-3030 ▪ 574-389-4600 ▪ Fax 574-296-7558

February 14, 2019

To Whom It May Concern,

Forest River, Inc. is a final stage manufacturer of recreational vehicles, both towable and motorized. We also manufacture cargo trailers, shuttle buses, transit buses, school buses and cargo vans.
The motorized version of our products are built on incomplete chassis, manufactured by various automotive manufacturers.

Forest River is an assembler, purchasing incomplete chassis, frames, tires & Wheels, axles, refrigerators, HVAC systems, ranges, ovens, microwaves, TV's, generators, exterior material, plumbing, electrical material, plastic components just to name a few that are manufactured by and supplied to us by other companies. These components are listed as required by the various agencies by those companies that manufacture and distribute them. These components are installed according to the manufacturer's recommendations. We also require, as part of our in line inspection, a periodic auditing and sign off of the installation of their products.

Forest River builds the products to the specifications required by the Federal Motor Vehicle Safety Act. We maintain a FMVSS/CMVSS booklet on our products with test data and illustrations of all 49 CFR 571 requirements, testing or approval data on components pertaining to the standards as required.

We are familiar with the Bureau of Motor Carrier Safety as it pertains specifically to our inter-company trucks and or trailers. These are not commercial for hire outside of Forest River, Inc. However drivers of these vehicles have a log book requirement, CDL licensing requirement and they are monitored on a regular basis.

The trailers and motorhomes for recreational use are built according to NFPA 1192 and the park trailers are built to NFPA 1195. These are also built to Z240 and Z241 for Canada.

Forest River, Inc. works closely with the National Highway Traffic Safety Administration in reporting any safety issues and recalls according to 49 CFR 573. Forest River provides quarterly reports to NHTSA under the TREAD Act by fulfilling our obligations to the Early Warning Reporting system.

Forest River requires copies of test data as it is stipulated by FMVSS/ CMVSS or NFPA on the material or subassemblies we purchase indicating they meet the requirements and are listed with various agencies such as ASTM, ANSI, ASHRAE, SPI, SAE, CSA, UL, ULC, IATMO, AGA just to name a few.

Forest River has safety committees established in various plants or group of plants to insure that the requirements of OSHA are met for the safety of the employee. All chemical documentation are available to all employees as well as a central bulletin board concerning their rights to know and safety.

If there are any questions please do not hesitate to contact me.

Regards,



William G. Conway Jr.
Chief Corporate Engineer
Forest River, Inc.
574-534-6913
Fax: 574-343-5967
Email: bconway@forestriverinc.com

Forest River, Inc.

55470 County Road 1, P.O. Box 3030, Elkhart, Indiana 46515-3030 ▪ 574-389-4600 ▪ Fax 574-296-7558

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Regards,



William G. Conway Jr.
Chief Corporate Engineer
Forest River, Inc.
574-534-6913
Fax: 574-343-5967
Email: bconway@forestriverinc.com

Certificate of Registration

This is to certify the Quality Management System of:

Forest River Manufacturing, LLC
Division 5

Location Addresses:

Starcraft Bus: Commercial
2367 Century Drive
Goshen, IN 46528

Starcraft Bus: School Bus
2408 Century Drive
Goshen, IN 46528

StarTrans Bus
2367 Century Drive
Goshen, IN 46528

has been assessed and found to be in compliance with the requirements of

ISO 9001:2008

for the following scope:

Design, Manufacturing, Sales, and Administration of Commercial, Government and School Busses.

Certificate Number: **SARA-2006-CA-0031-A**

Originally Registered:
February 28, 2006

Latest Issue:
January 26, 2015

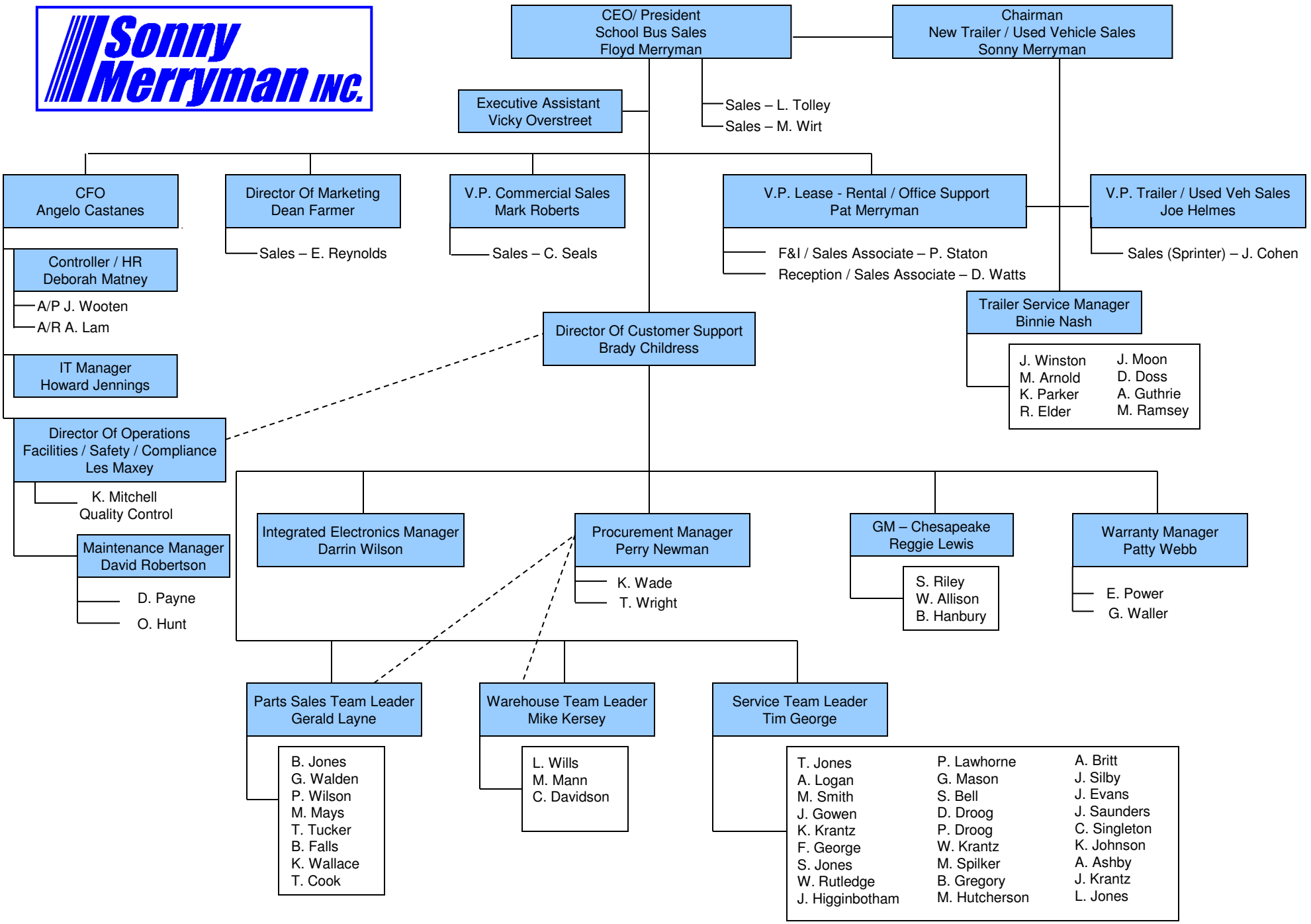
Expiry Date:
January 25, 2018

President, SARA Registrar

Standards American Registrations Authority REGISTERED

MGMT. SYS RvA C 465

This registration is subject to the company maintaining its system to the required standard which will be monitored by SARA Registrar. This certificate remains the property of Standards American Registrations Authority (SARA Registrar) and shall be returned immediately upon request. An electronic certificate can be authenticated online www.sararegistrar.com – verify certificates.
SARA Registrar Headquarters: 1807D Santa Rita Road, #175, Pleasanton, CA 94566


Sonny Merryman INC.
CEO/ President
School Bus Sales
Floyd Merryman
Chairman
New Trailer / Used Vehicle Sales
Sonny Merryman
Executive Assistant
Vicky Overstreet
Sales – L. Tolley
Sales – M. Wirt
CFO
Angelo Castanes
Director Of Marketing
Dean Farmer
Sales – E. Reynolds
V.P. Commercial Sales
Mark Roberts
Sales – C. Seals
V.P. Lease - Rental / Office Support
Pat Merryman
F&I / Sales Associate – P. Staton
Reception / Sales Associate – D. Watts
V.P. Trailer / Used Veh Sales
Joe Helmes
Sales (Sprinter) – J. Cohen
Controller / HR
Deborah Matney
A/P J. Wooten
A/R A. Lam
IT Manager
Howard Jennings
Director Of Customer Support
Brady Childress
Trailer Service Manager
Binnie Nash
J. Winston
M. Arnold
K. Parker
R. Elder
J. Moon
D. Doss
A. Guthrie
M. Ramsey
Director Of Operations
Facilities / Safety / Compliance
Les Maxey
K. Mitchell
Quality Control
Maintenance Manager
David Robertson
D. Payne
O. Hunt
Integrated Electronics Manager
Darrin Wilson
Procurement Manager
Perry Newman
K. Wade
T. Wright
GM – Chesapeake
Reggie Lewis
S. Riley
W. Allison
B. Hanbury
Warranty Manager
Patty Webb
E. Power
G. Waller
Parts Sales Team Leader
Gerald Layne
B. Jones
G. Walden
P. Wilson
M. Mays
T. Tucker
B. Falls
K. Wallace
T. Cook
Warehouse Team Leader
Mike Kersey
L. Wills
M. Mann
C. Davidson
Service Team Leader
Tim George
T. Jones
A. Logan
M. Smith
J. Gowen
K. Krantz
F. George
S. Jones
W. Rutledge
J. Higginbotham
P. Lawhorne
G. Mason
S. Bell
D. Droog
P. Droog
W. Krantz
M. Spilker
B. Gregory
M. Hutcherson
A. Britt
J. Silby
J. Evans
J. Saunders
C. Singleton
K. Johnson
A. Ashby
J. Krantz
L. Jones

REFERENCES

Washington Metropolitan Area Transit Authority

Don Scruggs, Assistant Director MetroAccess (301) 562-5371

Washington Metropolitan Area Transit Authority

Department of Access Services

6505 Belcrest Road, Room 413

Hyattsville, MD 20782

DScruggs@WMATA.com **Business to date: Over $40,000,000/ Over 1000 units**

Virginia Department of Rail and Public Transportation

Neil Sherman, Specialized Transportation Program Manager (804) 786-1154

Virginia Department of Rail and Public Transportation

600 East Main Street, Suite 2102

Richmond, VA 23219

Neil.sherman@drpt.virginia.gov **Business to date: Over $70,000,000/ Over 1,500 units**

Greater Richmond Transit Authority

Gerald Brink, Director of Maintenance (804) 358-3871

Greater Richmond Transit

301 East Belt Boulevard

Richmond, VA 23224

gbrink@ridegrtc.com **Business to date: Over $5,000,000/ Over 100 units**

Corporate Overview

Headquartered in Evington, Virginia, Sonny Merryman Inc. is celebrating 50 years of providing quality transportation equipment. The company also operates two additional sales and service centers in Chesapeake and Bristow, Virginia.

History

Founded in 1967 by F.W. "Sonny" Merryman, Jr. and his wife Lou, the company has grown from a small used trailer and school bus body dealer to one of the largest and most experienced transportation equipment distributors in the country.

Mission Statement

Sonny Merryman Inc. strives to provide our customers with quality transportation equipment products and support at fair prices. We value the contributions of our employees and industry partners to our continuing success. We endeavor to maintain high standards of integrity and honesty and to grow our company in a sound financial environment while proudly serving our nation, our Commonwealth, and the communities where we live and work.

Ownership & Corporate Structure

From 1967 until 2001 Sonny Merryman Inc. was a family owned and operated business. In 2001, Sonny Merryman Inc. became an employee owned company (ESOP). The Merryman family remains active in the day-to-day operations of the company. Our founder, Sonny Merryman, Jr., passed away in 2013. His son, Floyd Merryman, III, serves as our President and CEO and daughter, Pat, is the Administrative Vice President. The company's Board of Directors is comprised of the Merryman family, along with Chief Financial Officer, Angelo Castanes, Vice President for Sales, Mark Roberts, Vice President for Trailer Operations, Joe Helms and company Comptroller, Deborah Matney who also serves as the board's Secretary/Treasurer.

Product Lines

The company is separated into two primary divisions – buses and trailers. On the "bus side," the company is the Virginia dealer for Thomas Built Buses of High Point, NC. Thomas is recognized worldwide as a leading manufacturer of school buses. Thomas is a subsidiary of the Freightliner Corporation and its parent company, Daimler Trucks North America. Sonny Merryman Inc. is also the exclusive statewide dealer for the Freightliner school bus chassis and the new SAF-T-LINER C2 new generation school bus. distributor.

The company is a perennial member of Thomas' prestigious Gold Level President's Club - awarded annually for outstanding sales and customer support performance. Sonny Merryman Inc. has been named Thomas' Dealer of the Year five times, the only Thomas dealer to be recognized more than three times as Dealer of the Year.

The company also represents several national shuttle bus and specialty vehicle manufacturers and including ARBOC, AbiliTrax, Berkshire Coach, Braun Ability, Diamond, El Dorado National, Elkhart Coach, Hometown Trolley, MV-1, Starcraft, Startrans, and Transit Works. Many of these units are equipped with wheelchair lifts (paratransit units) to assist the physically disadvantaged with transportation services. Sonny Merryman Inc. is recognized nationally as one of the country's premiere dealers for shuttle and paratransit vehicles. The company annually delivers hundreds of vehicles to public transit operations, human service providers, state and local agencies, churches, senior living and healthcare facilities, colleges and universities, and many other organizations and companies who provide transportation services.

Sonny Merryman Inc. has been awarded numerous state contracts for purchase and delivery of shuttle buses and specialty vehicles. The company also maintains federal bus contracts with the General Services Administration. Many of these buses are delivered to Veterans Administration and other federal agencies all across the country. An offshoot of the bus side is the mobility equipment business. The company is an authorized dealer for many of the nation's leading mobility equipment manufacturers including Braun, Ricon, Sure/Lok and Q-straint.

On the company's "trailer side", Sonny Merryman Inc. is a distributor for Fontaine (flat beds), Winston (low boys), and Big John (log trailers). The "trailer side" customer base consists largely of local small independent truckers, loggers, and companies who operate their own truck fleets. In addition to new equipment, the company also maintains a large inventory of used trailers and storage containers. The storage trailer/container business is an important component on the "trailer side". Customers include mass merchandisers (Wal-Mart, K-Mart), contractors, and any business or individual with a need for temporary on-site storage.

Facilities

Conveniently located on sixty acres along U.S. Route 29 near Lynchburg in central Virginia, Sonny Merryman Inc.'s corporate headquarters proudly boasts one of the country's largest and most modern transportation equipment dealership facilities. The company's primary location currently has more than 60,000 square feet of under roof office space, service facilities, and warehousing. The company's extensive inventory of buses, trailers, and containers is maintained at the Central Virginia location. In 2004 Sonny Merryman opened a new Sales and Service Center in Virginia's Hampton Roads region. As of May 2016, we have moved our Hampton Roads location into a brand new, state-of-the-art $6 million facility. In 2006 the company seized another expansion opportunity into the populous and lucrative Northern Virginia market just outside the nation's capital.

Workforce

The ADMINISTRATIVE & SALES staff is comprised of a Chairman of the Board, President & CEO, Administrative Vice President, Vice President for Bus Sales, Vice President for Trailer Operations, Chief Financial Officer, Comptroller, Director of Marketing, Director of Information Services, six sales/marketing representatives, and eight administrative support staff members.

The **PARTS DEPARTMENT** currently has 19 full time employees including a parts/purchasing manager along with seven parts analysts, a buyer, an administrative assistant, four outside sales representatives, three shipping and receiving clerks, and two warehouseman. Thousands of bus and trailer parts are stocked and distributed from the company's three locations. The parts department also operates multiple delivery and field parts sales vehicles. The parts support fleet services the entire Commonwealth delivering special order and critical parts as well as receiving parts orders.

The **CUSTOMER SUPPORT DEPARTMENT** has approximately sixty full time employees who work in two daily shifts. The staff includes a Director of Operations, Director of Customer Support, Trailer Service Manager, Service Team Leader, General managers in both Hampton Roads and Northern Virginia, customer support administrators both for buses and trailers, and an array of technical service specialists, service writers, field service technicians, a quality assurance specialist, a lettering/graphics specialist, a warranty administrator and two warranty processors. A team of highly trained mechanics and technicians round out the staff. Many of the technicians are certified by Thomas, Freightliner, Caterpillar, Cummins, Allison and numerous other equipment and component manufacturers.

The **CENTRAL VIRGINIA SERVICE DEPARTMENT** currently has twenty-two full size service bays including a full service body shop and paint booth – all total about 20,000 square feet of under roof space. Sonny Merryman Inc. Hampton Roads operates eight service bays, as does our Northern Virginia facility. The service department also operates three customer support vehicles that assist statewide customers with special on-site service needs and warranty repairs. The vehicles are capable of providing a wide array of services on-site at the customer's location.

In addition to its full time work force, the company employs about a dozen individuals on a part-time as needed basis – primarily drivers and delivery persons. All in all, the company employs more than 120 full time workers and 15 part time associates.

Corporate Revenues

For calendar year 2015 the company's gross revenues exceeded $90M dollars.

New Bus Order to Production Process Mapping

Bus purchase order received.

Salesperson reviews and confirms order with Customer.

Upon order confirmation, sales management team creates valid configuration.

Sales management team submits order to Manufacturer.

Once unit is scheduled for production, sales management team advises salesperson of production time frame.

Salesperson advises customer of an estimated delivery date based on manufacturer's estimated ready date, add on lead times, add on equipment labor requirements, and current backlog.

Sales managment team keeps salesperson advised of any potential changes in the estimated delivery time frame. Any changes will be communicated to customer immediately.

Bus completed at Manufacturer and unit pick-up scheduled.

Bus picked up from Manufacturer and delivered to Sonny Merryman Inc.

Bus follows "New Bus Delivery Process Mapping".

New Bus Delivery Process Mapping

Sales admin posts and enters bus(es) into system

New bus(es) delivered to Sonny Merryman Inc.

QA person checks bus(es).

Damage?

NO
Prep sheet issued to Serivce Department for PDI, inspection, and add-ons.

YES
Damage noted on delivery receipt - sales & service notified.
Damage repaired and sales department notified.

PDI and add-ons completed. Sales Department notified.

QA inspects bus(es) for specs and additions and test drives.

Detail shop customer branding completed.

QA completes final inspection.

Bus(es) is ready for delivery. Sales schedules delivery time and date with customer.

Sales administration prepares transaction paperwork.

Bus(es) delivered to Customer.

Salesperson conducts bus(es) orientation.
In service documentation and dealer contact information shared with Customer.

Sales, delivery, warranty, and related paperwork completed with Customer.

Bus(es) successfully delivered and keys provided to Customer.

Schedule follow-up call to customer at 30 days to verify customer is satisfied, and the bus(es) is operating properly.

Sonny Merryman Organizational Chart

President & CEO
Floyd W. Merryman, III

Executive Assistant
Vicky Overstreet

Senior VP & CFO — Angelo Castanes

Controller/HR — Cindy Cutler
T. Carr
C. Wade
C. Cutler

Director of Operations — Facilities/Safety/Compliance — Les Maxey
D. Robertson
D. Payne
C. Smith

IT Manager — Daniel Wood

Senior VP & COO — Mark Roberts

VP, Sales & Marketing — Dean Farmer

School Bus Sales
M. Wirt
C. Compton

Commercial Bus Sales
C. Seals
A. Shimpock
D. Watts

Used Bus Sales
J. Cohen

Marketing Director
W. Kopanko

Vehicle Branding
A. Shreve

VP, Parts & Service — Brady Childress

Service Trainer — Daniel Droog

Quality Control — Josh Silby

Procurement Director — Gerald Layne

Warranty Manager — Patty Webb
G. Waller

Executive VP for Admin. — A. Patricia Merryman

VP, Trailer Operations — Joe Helms

Trailer Service Manager — Binnie Nash
A. Guthrie
J. Moon
J. Walker
K. Parker
M. Arnold
R. Elder
S. Moses

K. Millner
T. Russell
R. McCraw
S. Reamey

Chesapeake GM — Reggie Lewis
W. Allison
S. Riley
J. Hinson
A. Blackburn
R. Suter
D. Smith
M. Elders
R. Evans
N. Trower

Northern VA GM — Josh Lunsford
G. Almeda
C. Hopkins
K. Lewis
S. Mitchell
L. Sansone
S. Smith
B. Smith
A. Vallone
T. Zapotocky

Service Team Leader — Tim George
H. Ballard
S. Bell
M. Davis
M. Davis
E. Ennis
D. Evans
J. Evans
J. Gowen
B. Gregory
M. Hatcher
D. HeltonK. Johnson
L. Jones
S. Jones
T. Jones
A. Logan
J. McCullock
J. Rivers
R. Roach
J. Saunders
N. Silva
C. Singleton
B. Trent
C. Wyatt
P. Droog
J. Moore
P. Lawhorne
R. Guthrie

Parts Manager — Derek Shelton
B. Childress
L. Dowdy
B. Facemire
T. Hutcherson
V. Pickral
T. Preston
T. Simmons
C. Waller
J. Kirk
B. Moon
G. Taylor

Int. Elect./Outside Parts Sales/ Warehouse Manager — Mike Kersey

Outside Parts Sales:
T. Arthur
M. Mays
V. Pickral
J. Wray

Delivery:
D. Doss
K. Mitchell

Int. Elect.
A. Shimpock
W. Lipford

Warehouse Team Leader — Tony Wade
M. Burford
G. Falwell
Z. Puckette

VIRGINIA'S BUS COMPANY

Key Staff Information

Sales and Administration

Name	Title	Years of Experience
Floyd Merryman	President & CEO	35
Mark Roberts	Senior VP of Sales Manager	29
C. Chad Seals	Commercial Sales	19

Service and Parts Support

Name	Title	Years of Experience
Brady Childress	VP of Parts and Service	16
Tim George	Service Manager	19
Pam Lawhorn	Service Administrator	30
Rebekah Guthrie	Service Administrator	10
Daniel Droog	Service Trainer	15
Josh Silby	Quality Assurance Coordinator	19
Patty Webb	Warranty Manager	26
Gerald Layne	Procurement Director	33
Derek Shelton	Parts Manager	35
Victor Pickral	Western Region Parts Representative	20

Sonny Merryman Inc. At A Glance

- Founded in 1967, More than 50 Years in Business
- Virginia's Largest and Most Experienced Bus Dealer
- Ownership: Employee Stock Owned Program (ESOP)
- Four Locations: Central Virginia, Northern Virginia, Hampton Roads, and Greater Richmond
- Workforce: 148+ Employees with more than 1,200 years of combined experience

STARTRANS BUS
a division of Forest River, Inc.

FMVSS/CMVSS Compliance Summary 2015 Commercial and MFSAB

The following information summarizes the C/FMVSS standards and the Compliance Action taken by Startrans Bus

C/FMVSS No.	Standard Description	Compliance Action
101	Control Location, Identification and Illumination	Startrans does not alter the OEM controls or displays. Any aftermarket seats and/or controls or displays subject to the standard meet this standard.
102	Transmission Shift Lever Sequence, Starter Interlock & Transmission Braking Effect	Compliance is deferred to the chassis manufacturer.
103	Windshield Defrosting & Defogging Systems	Compliance is deferred to the chassis manufacturer.
104	Windshield Wiping & Washing Systems	Compliance is deferred to the chassis manufacturer.
105	Hydraulic Brake Systems	Test data kept on file for vehicles that have had the wheelbase extended, or have had other system modifications. For unmodified vehicles, compliance is deferred to the chassis manufacturer.
106	Brake Hoses	Vehicles with wheelbase modifications have additional lines installed by chassis modifiers using OEM components. Other vehicles that have had system modifications use OEM or OEM-approved components and are tested for compliance. For Non-stretched vehicles compliance is deferred to the chassis manufacturer.
108	Lamps, Reflective Devices & Associated Equipment	Startrans does not alter OEM lighting. Additional lighting to include brake, turn, clearance, auxilary and reverse lamps meet standard. Data on file.
108.1	Alternative Requirements for Headlamps	Startrans does not alter OEM lighting. Compliance is deferred to the chassis manufacturer.
110	Tire Selection and Rim for Motor Vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
111	Rear View Mirrors	All aftermarket mirrors installed by Startrans meet this standard and DOT regulations.
112	Headlamp Concealment Devices	Startrans does not manufacture vehicles with headlamp concealment devices.
113	Hood latch systems	Compliance is deferred to the chassis manufacturer.
114	Theft Protection	Compliance is deferred to the chassis manufacturer.
115	Vehicle Identification Number	Compliance is deferred to the chassis manufacturer.
116	Hydraulic Brake Fluids	Startrans does not alter brake systems. Vehicles with modified wheelbases have additional fluid added by chassis modifiers using OEM instruction and materials. All other system modifications utilize only OEM-approved fluid. For unmodified vehicles, compliance is deferred to the chassis manufacturer.
118	Power Operated Window, Partition, and Roof Panel Systems	Compliance is deferred to the chassis manufacturer.
120	Tire Selection and Rim for Motor Vehicles with a GVWR of 4,536kg (10,000 lbs.) or More	Compliance is deferred to the chassis manufacturer.
121	Air Brake Systems	Vehicles with wheelbase modifications have additional lines installed by chassis modifiers using OEM components. Other vehicles that have had system modifications use OEM or OEM-approved components and are tested for compliance. For unmodified vehicles, compliance is deferred to the chassis manufacturer.
124	Accelerator Control Systems	Startrans does not alter the OEM accelerator system, with the exception of the addition of aftermarket fast idle systems on some vehicles. These systems meet this standard when installed in accordance with instructions.
125	Warning Devices	All vehicles manufactured by Startrans that are equipped with aftermarket (3) triangle kit meet this standard.
131	School Bus Pedestrian Safety Devices	All vehicles manufactured by Startrans are not completed to be used as school buses.
135	Light Vehicle Brake System with a GVWR of 3,500kg (7,716lbs.) or Less	Startrans does not manufacture vehicles with a GVWR of 3,500kg (7,716 lbs.) or Less.
201	Occupant Protection in Interior Impact	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
202	Head Restraints	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.

STARTRANS BUS
a division of Forest River, Inc.

FMVSS/CMVSS Compliance Summary 2015 **Commercial and MFSAB**

The following information summarizes the C/FMVSS standards and the Compliance Action taken by Startrans Bus

203	Impact Protection for the Driver from the Steering Control System	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
204	Steering Control Rearward Displacement	Compliance is deferred to the chassis manufacturer.
205	Glazing Materials	No modifications are made to the OEM Glazing materials. Additional glazing materials meet the standard. Data on file.
206	Door Locks and Door Retention Devices	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
207	Seating System	All seating installed by Startrans meets this standard. Test data on file.
208	Occupant Crash Protection	No alterations are made to the OEM seat belts, air bag systems or associated hardware. Any seat belt systems added meet the standard. Test data on file.
209	Seat Belt Assemblies	No alterations are made to the OEM seat belts or associated hardware. Any seat belt systems added meet the standard. Test data on file.
210	Seat Belt Assembly Anchorage	No alterations are made to the OEM seat belts or associated hardware. Seat belt systems and their installation meet the standard. Test data on file.
210.1	User-ready Tether Anchorages for Restraint System	No alterations are made to the OEM seat belts or associated hardware. Seat belt systems and their installation meet the standard. Data on file.
210.2	Lower Universal Anchorage Systems for Restraint Systems and Booster Cushions	No alterations are made to the OEM seat belts or associated hardware. Seat belt systems and their installation meet the standard. Data on file.
212	Windshield Mounting	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
213	Child Restraint Systems	Vehicles manufactured by Startrans, that are subject to this standard, have seating installed that meets this standard. Test data on file.
213.4	Built-in Child Restraint Systems and Built-in Booster Cushions	Vehicles manufactured by Startrans, that are subject to this standard, have seating installed that meets this standard. Test data on file.
214	Side Impact Protection with a GVWR of 4,536kg (10,000 lbs.) or Less	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
216	Roof Crush Resistance	Startrans does not manufacture vehicles with a GVWR of 2,722kg (6,000 lbs.) or Less.
217	Bus Window Retention and Release	No modifications are made to the OEM windows. Additional windows meet the standard. Test data on file.
219	Windshield Zone Intrusion	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
220	School Bus Rollover Testing	All vehicles manufactured by Startrans meet this standard. Test data on file
221	School Bus Body Joint Strength	All MFSAB vehicles manufactured by Startrans meet this standard. Test data on file
222	School Bus Passenger Seating and Crash Protection	All MFSAB vehicles manufactured by Startrans meet this standard. Test data on file
225	Child Restraint Anchorage Systems	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
301	Fuel System Integrity	Compliance is deferred to the chassis manufacturer.
301.1	LPG Fuel System Integrity	Compliance is deferred to the chassis manufacturer.
301.2	CNG Fuel System Integrity	Compliance is deferred to the chassis manufacturer.

STARTRANS BUS
a division of Forest River, Inc.

FMVSS/CMVSS Compliance Summary 2015 **Commercial and MFSAB**

The following information summarizes the C/FMVSS standards and the Compliance Action taken by Startrans Bus

302	Flammability of Interior Materials	Materials installed in the interior of Startrans products meet the standard. Test data on file.
303	Fuel System Integrity of Compressed Natural Gas Systems	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
304	Compressed Natural Gas Fuel Container Integrity	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
305	Electrolyte Spillage and Electrical Shock Protection	Startrans does not manufacture vehicles with a GVWR of 4,536kg (10,000 lbs.) or Less.
403	Platform Lift System for Motor Vehicles	Startrans does not alter the platform lift system. Startrans install lift system in strict compliance with the manufacturers installation instructions. Startrans meets strength requirements. Test data on file.
404	Platform Lift Installation on Motor Vehicles	Compliance is deferred to the lift manufacturer.
1106	Noise Emissions	Startrans does not alter the OEM Chassis in the area which is stated in the incomplete vehicle documents. Data on file.

Signed: _____ Date: 1/1/2015

Title: Compliance Manger

U.S. Department
Of Transportation
Federal Transit Administration

Headquarters

East Building, 5th Floor – TCR
1200 New Jersey Avenue, SE
Washington, DC 20590

November 9, 2016

Donall Hasty
Starcraft Bus/StarTrans Bus
DBE Liaison Officer
2367 Century Drive
Goshen, IN 46525

Re: TVM DBE Goal Concurrence/Certification Letter – Fiscal Year 2017

Dear Mr. Hasty:

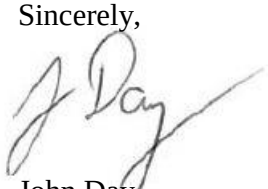
This letter is to inform you that the Federal Transit Administration's (FTA) Office of Civil Rights has received Starcraft/StarTrans Bus' Disadvantaged Business Enterprise (DBE) goal and methodology for FY 2017 for the period of October 1, 2016–September 30, 2017. This goal submission is required by the U.S. Department of Transportation's DBE regulations at 49 CFR Part 26 and must be implemented in good faith.

We have reviewed your FY 2017 DBE goal and determined that it is compliant with DOT's DBE regulations. You are eligible to bid on FTA-funded transit contracts. This letter or a copy of the TVM listing on FTA's website may be used to demonstrate your compliance with DBE requirements when bidding on federally funded vehicle procurements.

FTA reserves the right to remove/suspend this concurrence if your DBE program or FY 2017 DBE goal is not implemented in good faith. In accordance with this good faith requirement, you must submit your DBE Uniform Report to FTA by December 1, 2016. This report should reflect all FTA-funded contracting activity for the second period of FY 2016 (i.e., from April 1 to September 30).

Please also be mindful that your FY 2018 DBE goal methodology must be submitted to FTA by August 1, 2017. Any updates to the program plan must be submitted to FTA as they occur. Thank you for your cooperation. If you have any questions regarding this approval, please contact the FTA DBE Team via e-mail at *FTATVMSubmissions@dot.gov*.

Sincerely,



John Day
Program Manager for Policy and Technical Assistance
Office of Civil Rights

STARTRANS BUS
a division of Forest River, Inc.

June 22, 2020

To Whom It May Concern:

Re: StarTrans Electrical Practices

From: Larry Hall, Director of Engineering

StarTrans Bus hereby certifies that all electrical circuits provided by StarTrans Bus are of adequate size to withstand stated loads without difficulty. Wire and fuse protection sizing and type follow NEC and SAE guidelines, and adequate strain relief is provided through the use of insulated "P" clamps and routing avoids excessive temperature. Wiring routed through holes includes the insertion of appropriate grommets to protect from abrasion.

Certain add-on components from vendors may include their supplied electrical items and fuse protection.

StarTrans Bus incurs an annual audit by Ford for QVM certification. A part of that audit relates to electrical and our QVM audits never reference issues with our electrical practices.

Please feel free to contact me should you have any questions.

Sincerely,

Larry Hall, Director of Engineering

LH:jc

2408 Century Drive • Goshen, IN 46528 • 800.348.7440

REFERENCES

U.S. General Services Administration (GSA)
Federal Acquisition Services, Office of Acquisition Services
Medium & Heavy Automotive Acquisition Support Division
Craig Yokum
1800 F St. NW HUB 3200
Washington, DC 20405
703-605-9291
craig.yokum@gsa.gov

RTD – Regional Transportation District
Robbie Hunter
Senior Equipment Engineer
1900 31st Street
Denver, CO 80216
303-299-6930

Colorado Department of Transportation – Transit Unit
Jeff Sanders
Transit Infrastructure Specialist
4201 East Arkansas Avenue
Shumate Building
Denver, Colorado 80222
303-757-9771

Minnesota Department of Transportation
Office of Transit
Kathy Fuller
Program Coordinator
395 John Ireland Boulevard
Saint Paul, MN 55155
651-366-4190

Tennessee Department of Transportation
Jerry Roache
Transportation Specialist
505 Deaderick Street, STE 1800
James K. Polk Building
Nashville, TN 37243-0325
615-253-1038
Jerry.Roache@tn.gov

Kentucky Public Transit Association
James Phillips
Rural Transit Enterprises Coordinated, I
100 E Main ST
Mount Vernon, KY 40456
(606) 256-9835
james@4rtec.com

Missouri Department of Transportation
Tom Veasman
Senior General Services Specialist
830 MoDOT Drive
Jefferson City, MO 65102
(573) 522-4404

United States Department of Transportation

FTA

Eligible Transit Vehicle Manufacturers

DBE regulations require FTA recipients to report transit vehicle procurement awards (49 CFR 26.49). Since November 2014, FTA grantees have been required to submit, within 30 days of making an award, the name of the successful bidder and the total dollar value of the contract. Only eligible TVMs may bid on FTA-assisted transit vehicle procurements. Transit vehicle manufacturers that have submitted a goal methodology to FTA that has been approved, or has not been disapproved, at the time of solicitation are eligible to bid (49 CFR 26.49(a)(1)). The following is a list of eligible TVMs:

Transit Vehicle Manufacturer	Address	DBE Goal %	DBE Liaison Officer/ Email
Alexander Dennis	31566 Railroad Canyon Road Suite 342 Canyon Lake, CA	3.00%	Judy Lovitt
Alstom Transport	1 Transit Drive Hornell, NY	7.55%	Michelle Studer
AMASA Transportation Corporation	1070 Commerce Drive Madison, GA	1.07%	Chris Neumann
American CRRC Tangshan Rolling Stock, LLC	1889 Preston White Drive, Suite 202 Reston, VA 20191	7.45%	Zhao Liyan
ARBOC	51165 Greenfield Parkway Middlebury, IN	1.00%	Debbie Baker
Blue Bird	402 Blue Bird Blvd., P.O. Box 937 Fort Valley, GA	1.00%	Linda Belflower
Bombardier	1101 Parent Street Saint-Bruno Quebec, Canada	8.50%	Sophie Moore

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Braun	631 W. 11th Street Winamac, IN	5.00%	Ken Morgel
Brookville Equipment Corp.	175 Evans Street Brookville, PA	4.40%	Ron Rodgers
Brown Industries, LLC	807 East 29th Street Lawrence, KS	2.06%	Dane Johnson
BYD	1800 South Figueroa Street Los Angeles, CA	7.00%	Greg Davis
CAF USA	1401 K Street, NW Washington, DC	3.51%	Tonia Crosby
Champion Bus/General Coach America	331 Graham Road Imlay City, MI	1.00%	Brad Lupo
Coach & Equipment Manufacturing	130 Horizon Park Drive Penn Yan, NY	1.26%	Gina Zito
Collins Bus	415 W. 6th Avenue South Hutchington, KS	0.48%	Jeff Eriksen
Complete Coach Works	1863 Service Court Riverside, CA	1.00%	Michael Perez
CRRC MA Corporation	100 Summer Street, Suite 1603 Boston, MA	7.25%	Tina Andrews
CRRC Sifang America	300 North LaSalle Street, Suite 2240 Chicago, IL	1.90%	James Kozicki
Diamond Aquisition d/b/a Diamond Coach	2300 W. 4th Street Oswego, KS	1.10%	Kate Strickland
ElDorado National	9670 Galena Street Riverside, CA 1655 Wall Street Salina, KS	3.43%	Jake Calvo

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Fenton Mobility	1209 E. Second Street Jamestown, NY	0.105%	Mary Gabalski
Forest River: Elkhart Coach, Glaval Bus, Starcraft/StarTrans Bus	914 County Road 1 Elkhart, IN	Elkhart: 0.75%; Glaval: 0.71%; Starcraft: 0.82%	Donall Hasty
FR Conversions	1231 Tech Court Westminster, MD	0.20%	Paul Kluth
Gillig	25800 Clawiter Road Hayward, CA	2.70%	Chris Turner
Gomaco	P.O. Box 151 Ida Grove, IA	1.27%	Troy Kruse
Grand West Transportation International Ltd.	3168 262nd Street Aldergrove BC, Canada	1.16%	Ryan Lindgren
Green Power	31-7000 Merrill Avenue Chino, CA	6.27%	Fraser Atkinson
Higher Power	11 Sunny Slope Terrace Yonkers, NY	3.06%	Michael Liebler
Hitachi Rail Italy	Via Cilliegiole 110/B 51100 Pistoria, Italy	8.00%	William E. Doyle Jr.
Hometown Trolley/Double K	701 North Rail Road Avenue Crandon, WI	4.00%	Talia Walerko
Inekon	350 SE 2nd Street, Suite 730 Fort Lauderdale, FL	2.03%	Milo Srkal
Kawasaki	29 Wells Avenue Building #4 Yonkers, NY	6.92%	Tadashi Doi
Kiepe Electric Inc.	395 Curie Drive Alpharetta, GA	2.14%	Noel Dsa
Kinkisharyo	300 North	2.30%	Melissa

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International	Continental Blvd., Suite 300 El Segundo, CA		Rath
Lone Star	12953 Highway 63 West Tyler, TX	3.00%	Norma Niderhofer
Metro Worldwide, LLC	3101 Willow Creek Court, P.O. Box 147 Clear Lake, IA	1.28%	Scott Loges
Midway Specialty Vehicles	2940 Dexter Drive Elkhart, IN	6.73%	Mike R. Violi
Midwest Bus Corporation	1940 W. Stewart Street Owosso, MI	0.70%	Julita A. Velasco
Mitsubishi Heavy Industries America, Inc.	630 Fifth Avenue, Suite 2650 New York, NY	2.00%	Michael Ang
Mobility TRANS	42000 Koppernick Road, #A3 Canton, MI	2.00%	Dave Brown
MotivePower, Inc.	4600 Apple Street Boise, ID	2.00%	Zach Maulik
Motor Coach Industries	200 E. Oakton Street Des Plaines, IL	4.90%	Pablo Batista
National Van Builders	80 Pine Street Attleboro, MA	5.00%	Glen Perlman
New England Wheels	33 Manning Road Billerica, MA	4.00%	Gerald Dann
New Flyer	711 Kernaghan Avenue Winnipeg, Manitoba	4.20%	Darrin Smith
Nor-Cal Vans	1300 Nord Avenue, Suite 125 Chico, CA	3.00%	Amanda McTavish
Nova Bus/Prevost Car	260 Banker Road Plattsburgh, NY	3.00%	Karen Honeysett
Prime-Time Specialty Vehicles, Inc	56616 Elk Park Drive Elkhart, IN	2.00%	Steve Rand

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Progress Rail Locomotive	1600 Progress Drive Albertville, AL	1.50%	Susan Lash
Proterra	1 Whitlee Court Greenville, SC	3.10%	Eric McCarthy
RELCO Locomotive Inc.*	P.O. Box 218 Albia, IA	3.80%	Douglas Bachman
Revability Inc.	401 Capacity Dr Longview, TX	0.12%	Chuck Fortinberry
Siemens Mobility Inc. f/k/a Siemens Industry, Inc.	7464 French Road Sacramento, CA	5.69%	Michelle Picard
Stadler US	231 North Avenue W. #112 Westfield, NJ	3.10%	Aaron Wilcoxon
Sumitomo	9500 W. Bryn Mawr Ave, Suite 400 Arlington Heights, IL	5.17%	Shunsuke Takaya
Sunset Vans, Inc.*	8851 Lakewood Blvd. Downey, CA 90240	1.00%	Chris Perez
Talgo	3533 North 27th Street Milwaukee, WI	2.61%	Ferran Canals
Thomas Built Buses	1408 Courtesy Road High Point, NC	2.59%	Kenneth Hedgecock
TransitWorks, LLC	1090 W. Wilbeth Road Akron, OH	1.20%	Cindy Poinar
Turtle Top	67819 State Road 15 New Paris, IN	0.85%	Matthew Gaff
Waldoch Crafts Inc.	13821 Lake Drive NE Forest Lake, MN	2.30%	Scot Maki

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*Goal methodology has been submitted and is pending review by FTA. The TVM is eligible to bid on FTA-assisted procurements.

Updated: Thursday, June 21, 2018

Related Links

- Transit Vehicle Manufacturers (TVMs)
- Transit Vehicle Award Reporting Form

Contact Us

Office of Civil Rights
Federal Transit Administration
1200 New Jersey Avenue, SE
Washington, DC 20590
United States

Phone: 888-446-4511

Business Hours:
8:30am-5:00pm ET, M-F

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STARCRAFT BUS VEHICLE ENGINEERING EXPERIENCE SUMMARY		150.9	Combined Years Experience

Name	Degree	Employer Name	From	To	Years	Industry Type
Vince Cline		Goshen Coach	Mar-00	Sep-01	1.5	Commercial Bus
Vince Cline		Startrans Bus	Oct-01	Jul-02	0.7	Commercial Bus
Vince Cline		Four Winds International	Jul-02	Nov-05	3.3	Automotive/RV
Vince Cline	A.A.S	Glaval Bus	Nov-05	Nov-09	4.0	Commercial Bus
Vince Cline		Starcraft Bus	Nov-09	Jan-15	5.2	Commercial Bus
Tim Smart	Associate	Goshen Coach	Aug-93	Aug-06	13.0	Commercial Bus
Tim Smart		Starcraft Bus	Aug-06	Jan-15	8.5	Commercial Bus
Mike Kline		Starcraft Bus	Jun-99	Jan-15	15.7	Commercial Bus
Larry Hall		Goshen Coach	May-86	Aug-90	4.3	Commercial Bus
Larry Hall		Holiday Rambler Corporation	Aug-90	Jan-91	0.4	Towable/RV
Larry Hall		Goshen Coach	Jan-91	Jun-95	4.4	Commercial Bus
Larry Hall		National Mobility Corporation/Starcraft Automotive (Purchased)	Jun-95	Feb-99	3.7	Mobility Van/ADA - Commercial Bus
Larry Hall		Goshen Coach	Feb-99	Oct-99	0.7	Commercial Bus
Larry Hall		Monaco Coach Corporation	Oct-99	May-02	2.6	Towable/RV
Larry Hall		Starcraft Bus.	May-02	Aug-03	1.3	Commercial Bus
Larry Hall		Starcraft Bus.	Aug-05	Jan-15	9.5	Commercial Bus
Brad Gould		Euro-Liner	Jan-97	Jan-02	5.0	Class A RV
Brad Gould		Jayco	Jan-02	Jan-04	2.0	Class A RV
Brad Gould		Starcraft Bus	Jan-04	Jan-15	11.1	Commercial Bus
Mark Barczak	Associate	Goshen Coach	Mar-92	Dec-99	7.8	Commercial Bus
Mark Barczak		Glaval Bus	Jan-00	Jan-01	1.0	Commercial Bus
Mark Barczak		Supreme Corporation	Jan-01	Aug-11	10.6	Commercial Bus
Mark Barczak		Starcraft Bus	Jan-12	Jan-15	3.1	Commercial Bus
Jamie Garcia		Supreme Corporation	Mar-95	Aug-95	0.4	Supreme truck
Jamie Garcia		Startrans bus	Apr-97	Jan-15	17.8	Commercial Bus
Donall Hasty		Product Action	Aug-00	Feb-03	2.5	Automotive/Teir 1
Donall Hasty		Goshen Coach	Feb-04	Apr-14	10.1	Commercial Bus
Donall Hasty		Starcraft Bus	Apr-14	Jan-15	0.8	Commercial Bus

RAIN BOOTH INFORMATION

Constructed as part of a corporate-wide pre-delivery inspection facility, the Forest River 20' x 50' motorized vehicle rain booth utilized by Starcraft and Startrans Bus offers exceptional performance in the area of water leak detection.



The motorized vehicle rain booth adds front wall nozzles to the design of the towable rain booth, simulating the pelting of oncoming rain at highway speeds. Both booths include two 1200 gallon recycling tanks and utilize a 12Horsepower pump with multi-bank filters capable of delivering 40 – 60 p.s.i. That equates to 300 gallons per minute pushed through the spray heads, or the equivalent of a 24 inch-per-hour downpour!

With nozzles directed at the roof, sidewalls, front and undercarriage, nothing goes untouched in our quest for leak elimination. Using both velocity and volume in our test procedure ensures our valuable customers that we are doing the utmost to deliver a leak-free product to them.



Visitors are always welcome to witness the test booths whenever they are in operation.

2367 Century Drive, Goshen, IN 46528 PH: 800-348-7440 FAX: 574-642-4389

Sonny Merryman Inc. - Startrans Candidate II

Request for Quotation
156" Wheelbase Transit Van Dual Rear Wheel (DRW) Narrow Body Cutaway Vehicle
Exhibit A - Pricing Page

CLASS	ITEM DESCRIPTION	UNIT PRICE PER VEHICLE	EST QTY	EXTENDED PRICE
A	Vehicle Non-Accessible / Paratransit Package	$71,405.00	2	$ 142,810.00
B	Vehicle with One Wheelchair (WC) Positions/ Paratransit Package	$77,657.00	2	$ 155,314.00
C	Vehicle with Two Wheelchair (WC) Position / Paratransit Package	$77,236.00	2	$ 154,472.00
D	Vehicle/ Front Lift / 3 WC Positions	$78,456.00	2	$ 156,912.00
E	Vehicle/ One Wheelchair (WC)/ Fixed Route Package	$82,157.00	2	$ 164,314.00
F	Vehicle/Two WC / Fixed Route Package	$81,898.00	2	$ 163,796.00
G	Vehicle/ Front Lift / Three Wheelchair Positions/ Fixed Route Package	$83,075.00	2	$ 166,150.00
H	Vehicle/ One WC Position / Fixed Route Package / Full Bus Paint	$86,858.00	2	$ 173,716.00
I	Vehicle / 2 WC Positions / Fixed Route Package / Full Bus Paint	$85,723.00	2	$ 171,446.00
J	Vehicle /Front Lift / Three WC Positions/ Full Bus Paint	$87,866.00	2	$ 175,732.00
K	Vehicle/One WC/Fixed Route Package/ Three Quarter Body Paint with Expanded Graphics Vehicle Skirt Painting	$87,525.00	2	$ 175,050.00
L	Vehicle/Two WC/Fixed Route Package/ Three Quarter Body Paint with Expanded Graphics Vehicle Skirt Painting	$86,573.00	2	$ 173,146.00
M	Vehicle/Front Lift / Three WC/Fixed Route Package/ Three Quarter Body Paint with Expanded Graphics	$87,750.00	2	$ 175,500.00
N	Vehicle/One WC/Fixed Route Package/Vehicle Skirt Painting	$82,795.00	2	$ 165,590.00
O	Vehicle / Two WC Position/ Fixed Route Package / Vehicle Skirt Painting	$83,228.00	2	$ 166,456.00
P	Vehicle /Front Lift / Fixed Route Package / Vehicle Skirt Painting	$83,713.00	2	$ 167,426.00
				$
A1	Option to add Bus Driver Safety Barrier	$1,450.00	2	$ 2,900.00
	TOTAL BID AMOUNT FOR EVALUATION			$ 2,650,730.00

Complete form provided.
Please note these are only estimated quantities and do not reflect any guarantee of purchase
The DPT may purchase more or less as needed.

Limited Warranty

IVS, Inc. dba AngelTrax, warrants its product to be free from manufacturer's defects in material and workmanship under normal use and service for the designated warranty period, as listed below, from the date of purchase. "Normal use" means the product was used for intended purposes, maintained properly and protected from deliberate damage. The following products are covered by the limited warranty for the following periods of time:

- **Five (5) years from date of purchase parts and labor on the Vulcan Series V5SD™, V5™, V5X3™, V6X3™, VX7AI™, V12™ and V24™ MDVRs**
- **Five (5) years from date of purchase parts and labor on the Vulcan Series Hybrid Component V8HCNVR™, V12HCNVR™ and V16HCNVR™**
- **Five (5) years from date of purchase parts and labor on the Vulcan Series V32™ Commercial NVR**
- **Five (5) years from date of purchase parts and labor on the Hybrid Component Series Hybrid Quest™, Hybrid Quest Edge™, Hybrid Quest Edge Plus™ and Hybrid Vault™ MDVRs**
- **Five (5) years from date of purchase parts and labor on the HDX Hybrid™ MDVR**
- **Three (3) years from date of purchase parts and labor on the HDX™ and SDX™ MDVRs**
- **Three (3) years from date of purchase parts and labor on the CoPilot™, CoPilot-WA™ and CoPilot-RFID™ MDVRs**
- **Five (5) years from date of purchase full replacement on all solid-state hard drives**
- **Five (5) years from date of purchase parts and labor on all SD cards**
- **Three (3) years from date of purchase parts and labor on all SATA hard drives**
- **Three (3) years from date of purchase parts and labor on the Vulcan Series IP and HD Cameras**
- **Three (3) years from date of purchase parts and labor on the HD Quality Lens Cameras**
- **Three (3) years from date of purchase parts and labor on the WM Series and Student Transit PeriOptic Lens Cameras**
- **Three (3) years from date of purchase parts and labor on the CoPilot™ Camera**
- **Three (3) years from date of purchase parts and labor on the Virtual Synchronized Mapping™ internal and external units**
- **Three (3) years from date of purchase parts and labor on the GDA-7012 Kit and GDA-7012 Monitor**
- **Three (3) years from date of purchase parts and labor on the WLAN and AP Router**
- **One (1) year from date of purchase parts and labor on the MON7AT installation monitor, the Meraki MR74 Wi-Fi system and all accessories not listed above**

This warranty gives the user specific rights, and those rights may vary from state to state. The terms and conditions of said warranty are as follows:

1. When the product is installed by, or purchased from an authorized AngelTrax dealer, IVS, Inc. will either repair, or replace at no charge to the original purchaser, any product that IVS, Inc. determines to be defective and under the warranty provided. The defect(s) must be reported within five (5) years from the date of purchase. This warranty is valid only with the original purchaser, and is non-transferable. The warranty does not cover removal or reinstallation of the product(s).
2. The date of purchase and proof of an authorized AngelTrax dealer installation must be established by the original sales receipt, which should accompany the product(s) that are returned for warranty services.
3. The warranty shall not apply to any product that has been altered in any way, or used for any unintended purpose.
4. IVS, Inc. does not authorize any other person to assume liability in connection with its products. This warranty is the only expressed warranty made by IVS, Inc. to its products. Any implied warranty of merchantability or fitness for a particular purpose applicable to IVS, Inc. products, is limited to the duration of this limited warranty. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, or limitation on how long an implied warranty lasts. Therefore, the above limitations may not apply.
5. If in the unlikely event warranty service becomes necessary, contact us directly and request a Return Merchandise Authorization (RMA) from the technical service department. Please call 1-800-673-1788 and ask for the technical service department to obtain a return merchandise authorization (RMA) number. Be sure to have the model number, serial number and the nature of the problem available for the technical service representative. Upon verification of a defect, IVS, Inc. will send a new or refurbished replacement unit via express shipping at no cost to the customer. The customer will receive a copy of the RMA and a Call Tag with their replacement unit. Once the customer has received the replacement unit, they have 30 days to ship the defective product back to IVS, Inc. or the customer will be charged for the replacement product. Once the unit is exchanged, the returned product shall become the property of IVS, Inc. The Call Tag included with the replacement unit allows the customer to ship the defective product back to IVS, Inc. at no cost.
6. Products must be returned to the factory in their original carton, or equivalent, and in original packaging conditions. Items shipped to IVS, Inc. without a clearly identified RMA number on the exterior of the packaging may be refused. If the product is received with the serial number removed or defaced, the warranty is void. The product will not be repaired under warranty and returned to the owner freight collect.

Send product to:
IVS, Inc. (AngelTrax)
Warranty Service Department
119 South Woodburn Drive
Dothan, Alabama 36305

Braun® Limited Warranty For Dual Parallel Arm Public Use Lifts

WARRANTY COVERAGE AND WARRANTY COVERAGE TIME PERIODS

The Braun Corporation ("Braun") warranty covers certain parts of this wheelchair lift for three (3) years or 10,000 cycles and the cost of labor to repair or replace those parts for one (1) year or 3,000 cycles. If The Braun Corporation receives the warranty registration card within 20 days after the lift is put into service, the warranty labor coverage will increase from one (1) year or 3,000 cycles to three (3) years or 10,000 cycles. In addition, providing the warranty registration card is returned as noted above, the following lift's power train parts are warrantied for five (5) years or 15,000 cycles: Cable, Cylinder, Flow Control, Gear Box, Motor, Pump, Hydraulic Hose and Fittings. This limited warranty covers substantial defects in materials and workmanship of the lift, provided that the lift is operated and maintained properly and in conformity with the owner's manual. The warranty period begins on the date that the product is delivered to the first retail purchaser by an independent, authorized dealer of Braun, or, if the dealer places the product into any type of service prior to retail sale, on the date the dealer first places the product in such service. This limited warranty applies only to the first purchaser. It may not be transferred.

WHAT BRAUN WILL DO TO CORRECT PROBLEMS

In the event that a substantial defect in material or workmanship, attributable to Braun, is found to exist during the first year of warranty coverage, it will be repaired or replaced, at Braun's option, without charge for parts or labor to the owner, in accordance with the terms, conditions and limitations of this limited warranty. If the substantial defect in material or workmanship, attributable to Braun, is found to exist during the second or third year of warranty coverage, it will be repaired or replaced, at Braun's option, without charge to the owner for parts, only, in accordance with the terms, conditions and limitations of this limited warranty. Providing the warranty card is returned within 20 days as outlined above, the labor warranty period will be extended by two years of coverage in accordance with the terms, conditions, and limitations of this limited warranty. In addition, if a substantial defect in material or workmanship, attributable to Braun, is found to exist during the fourth or fifth year of warranty coverage to the following lift's power train parts: Cable, Cylinder, Flow Control, Gear Box, Motor, Pump, Hydraulic Hose and Fittings, it will be repaired or replaced, at Braun's option, without charge to the owner for parts, only, in accordance with the terms, conditions and limitations of this limited warranty. The cost of labor for repair or replacement at any time after the warranty coverage detailed above is the sole responsibility of the owner.

Braun's obligation to repair or replace defective materials or workmanship is the sole obligation of Braun under this limited warranty. Braun reserves the right to use new or remanufactured parts of similar quality to complete any work, and to make parts and design changes from time to time without notice to anyone. Braun reserves the right to make changes in the design or material of its products without incurring any obligation to incorporate such changes in any previously manufactured product. Braun makes no warranty as to the future performance of this product, and this limited warranty is not intended to extend to the future performance of the product. In addition, the owner's obligation to notify Braun, or one of its authorized, independent dealers, of a claimed defect does not modify any obligation placed on the owner to contact Braun directly when attempting to pursue remedies under state or federal law.

LIMITATIONS, EXCLUSIONS AND DISCLAIMER OF IMPLIED WARRANTIES

ANY IMPLIED WARRANTY THAT IS FOUND TO ARISE BY WAY OF STATE OR FEDERAL LAW, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR ANY IMPLIED WARRANTY OF FITNESS, IS LIMITED IN DURATION TO THE TERMS OF THIS LIMITED WARRANTY AND IS LIMITED IN SCOPE OF COVERAGE TO THE SCOPE OF COVERAGE OF THIS LIMITED WARRANTY. Braun disclaims any express or implied warranty, including any implied warranty of fitness or merchantability, on items excluded from coverage as set forth in this limited warranty. Braun makes no warranty of any nature beyond that contained in this limited warranty. No one has authority to enlarge, amend or modify this limited warranty, and Braun does not authorize anyone to create any other obligation for it regarding this product. Braun is not responsible for any representation, promise or warranty made by any independent dealer or other person beyond what is expressly stated in this limited warranty. Any selling or servicing dealer is not Braun's agent, but an independent entity.

Braun® Limited Warranty For Dual Parallel Arm Public Use Lifts

BRAUN SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES THAT MAY RESULT FROM BREACH OF THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY. THIS EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES SHALL BE INDEPENDENT OF ANY FAILURE OF THE ESSENTIAL PURPOSE OF ANY WARRANTY, AND THIS EXCLUSION SHALL SURVIVE ANY DETERMINATION THAT THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY HAS FAILED OF ITS ESSENTIAL PURPOSE. This warranty does not cover, and in no event shall Braun be liable for towing charges, travel, lodging, or any other expense incurred due to the loss of use of the product or other reason.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

HOW TO GET SERVICE

To obtain warranty service the owner must do all of the following:

1. Notify an authorized service center, of the claimed defect attributable to Braun, within the warranty coverage period designated above
2. Provide the notification mentioned in (1), above, within ten (10) days of when the owner discovered, or should have discovered, the claimed defect
3. Promptly schedule an appointment with and take the product to an authorized service center for service.
4. Pay any transportation costs and all expenses associated with obtaining warranty service.

Since Braun does not control the scheduling of service work at the independent dealerships you may encounter some delay in scheduling or completion of work. If you need assistance you may contact Braun, at 631 West 11th Street, Winamac, Indiana 46996; 1-800-THE-LIFT, (843-5438).

If two (2) or more service attempts have been made to correct any covered defect that you believe impairs the value, use or safety of the product, or if it has taken longer than thirty (30) days for repairs to be completed, you must, to the extent permitted by law, notify Braun directly, in writing, at the above address, of the unsuccessful repair(s) of the alleged defect(s) so that Braun can become directly involved in providing service pursuant to the terms of this limited warranty.

WHAT IS NOT COVERED

This Limited Warranty does not cover any of the following: defects in materials, components or parts of the product not attributable to Braun, any material, component or part of the product that is warranted by another entity (Note: the written warranty provided by the manufacturer of the material, component or part is the direct responsibility of that manufacturer); items that are added or changed after the product leaves Braun's possession; additional items installed at any dealership, or other place of business, or by any other party, other than Braun; normal wear, tear, usage, maintenance, service, periodic adjustments, the effects of condensation or moisture from condensation; mold or any damage caused by mold; imperfections that do not affect the product for its intended purpose; items that are working as designed but that you are unhappy with; problems related to mis-operation, misuse, mishandling, neglect or abuse, including failure to maintain the product in accordance with the owner's manual, or other routine maintenance such as inspections, lubricating, adjustments, tightening of screws, sealing, wheel alignments or rotating tires; damage due to accident or collision, including any acts of weather or damage or corrosion due to the environment; theft, vandalism, fire, or other intervening acts not attributable to Braun; damage resulting from tire wear or tire failure; defacing, scratches, dents or chips on any interior or exterior surface of the product, including those caused by rocks or other road hazards, damage caused by off road use, overloading or alteration of the product, or any of its components or parts.

Defects and/or damage to interior and exterior surfaces and other appearance items may occur at the factory or when the product is in transit. These items are usually detected and corrected at the factory or by

a dealer prior to delivery to the purchaser. You must inspect the product for this type of damage when you take delivery. If you find any such defect or damage you must notify the selling dealer, or Braun, at the time of delivery to have these items covered by this limited warranty and to have work performed on the items at no cost to you as provided by this limited warranty.

EVENTS DISCHARGING BRAUN FROM OBLIGATION UNDER WARRANTY

The following shall completely discharge Braun from any express or implied warranty obligation to repair or replace anything and void this warranty: misuse, neglect, collision, accidents, failure to provide routine maintenance (See Owner's Manual), unauthorized alteration, off road use, Acts of Nature, damage from weather or the environment, theft, vandalism, tampering, fire, explosions, overloading the product and odometer tampering.

LEGAL REMEDIES

Any action to enforce any portion of this limited warranty, or any implied warranty, must be commenced within six (6) months after expiration of the warranty coverage period designated above or the action will be barred because of the passage of time. Any performance of repairs shall not suspend this limitation period from expiring. Any performance of repairs after the warranty coverage period has expired, or performance of repairs regarding any thing excluded from coverage under this limited warranty shall be considered "good will" repairs, and they will not alter the terms of this limited warranty, or extend the warranty coverage period or the filing limitation period in this paragraph. In addition, since it is reasonable to expect that the product will need some service during the warranty period; this warranty does not extend to future performance. It only sets forth what Braun will do and does not guarantee anything about the product for any time period. Nothing in this warranty, or any action of Braun, or any agent of Braun, shall be interpreted as an extension of any warranty period or the filing limitation period in this paragraph. Some states do not allow a reduction in the statute of limitations, so this reduction may not apply to you.

WARRANTY REGISTRATION and MISCELLANEOUS

Your warranty registration records should be completed and delivered to the appropriate companies, including the Braun Delivery Checklist & Warranty form. That form must be returned to Braun within twenty (20) days of purchase. The Braun warranty will not be registered unless this warranty registration is completed and received by Braun. Failure to file this warranty registration with Braun will not affect your rights under this limited warranty as long as you can present proof of purchase, but it can cause delays in obtaining the benefits of this limited warranty, and it changes the start date of the warranty to the date of final assembly of the product by Braun.

Braun agrees to repair or replace any of its factory installed parts found to have substantial defects within the appropriate warranty period designated above, provided that the repair is authorized by Braun and carried out by an authorized service center (a Braun labor schedule determines the cost allowance for repairs). Braun will not honor any warranty claim for repairs or replacement of parts unless the claim is submitted with the appropriate paperwork, and the work is completed by an independent, factory authorized service center. The appropriate paperwork can be obtained by written or phone contact with Braun at the contact information in this warranty.

Braun reserves the right to designate where any warranty work can be performed. Braun also reserves the right to examine any defective workmanship or part prior to giving any authorization for warranty work. Braun's return authorization procedure must be adhered to in order to process any warranty claims.

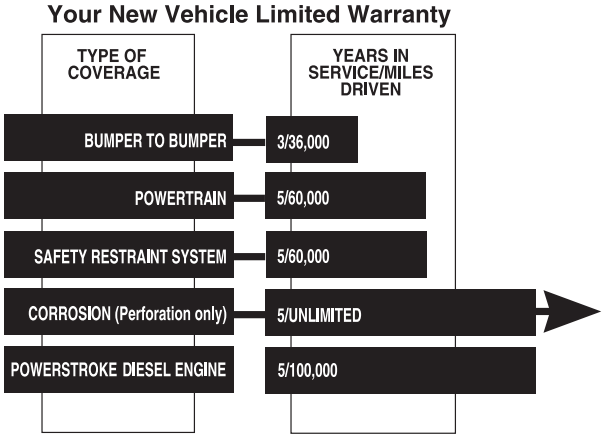
THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE.

QUICK REFERENCE: WARRANTY COVERAGE

This chart gives a general summary of your warranty coverage provided by Ford Motor Company under the **New Vehicle Limited Warranty.** Please refer to the description of warranty coverage for more specific information.

For each type of coverage, the chart shows two measures:

- years in service
- miles driven



The measure that occurs first determines how long your coverage lasts. For example: Your Bumper to Bumper Coverage lasts for three years - unless you drive more than 36,000 miles before three years elapse. In that case, your coverage ends at 36,000 miles.

For more details on coverage, see:

➡ **What is Covered?** (pages 8-12)
➡ **What is Not Covered?** (pages 12-15)

WHAT IS COVERED?

Your NEW VEHICLE LIMITED WARRANTY gives you specific legal rights. You may have other rights that vary from state to state. Under your New Vehicle Limited Warranty if:

- your Ford vehicle is properly operated and maintained, and

Passenger Seats Limited Warranty & Sales Terms

WARRANTY:
Freedman Seating Company warrants to the original buyer that its Passenger Seats are free from defects in material and workmanship for the following components:

- Metal Components – Five (5) years
- Plastic Components – Three (3) years
- Moving Components – Three (3) years
- Gas Shock Components – One (1) year
- Upholstered Components (foam) – Two (2) years

Cover Warranty is for defects in the material or sewing and is limited to replacement covers. It does not include labor:

- One (1) year for Level #1 in-stock FSC material and perforated vinyl
- Two (2) year for Level #3 in-stock FSC material and higher
- No warranty for COM (Customer Own/ supplied Material)

The warranty period begins at time of sales to customer or 180 days after shipment from the Freedman Seating Company's factory to the customer, whichever occurs first.

NON-PRORATED REPLACEMENT:
In the event that a warranty-covered failure should occur within the warranty period, Freedman Seating Company will repair or replace the seat without charge and without prorating, at Freedman Seating Company's option. This is the sole and exclusive remedy for breach of any warranty. Any replacement seat or part is only covered by this warranty for the remainder of warranty period applicable to the original seat.

EXCLUSIONS:
This warranty specifically excludes foam, upholstery material, belts, and items exposed to normal wear and tear such as metal finish and paint and does not apply to any seat that is damaged as result of accident, derailment, improper installation, structural defects, intentional damage, abuse, vandalism, negligence, misuse, improper operating conditions, lack of maintenance, or extreme natural phenomena. Seats exposed to toxic or corrosive materials are excluded from this warranty. Seats exposed to cleaning solutions that are not listed on the Freedman Seating Company Cleaning Guide are excluded from this warranty. This warranty is provided directly to the purchaser only and does not extend to any subsequent party and is solely for the Freedman Seating Company product as it is originally manufactured.

INCIDENTAL, CONSEQUENTIAL DAMAGES, & LIMITATIONS:
This warranty shall be in lieu of any other warranty or terms, expressed warranty or terms, expressed or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. The purchaser's sole and exclusive remedy against Freedman Seating Company shall be for the repair and replacement of the defective product as provided herein. No other remedy; including but not limited to incidental or consequential damages for lost profits, lost sales, injury to person or property, shipping, freight, installation, removal, or any other incidental or consequential loss shall be available to the purchaser.

NOTIFICATION:
All reports, claims, or notices required by the warranty to be provided to Freedman Seating Company must be in writing and delivered to: Attention – Freedman Seating Company, Warranty Claim Department, 4545 W. Augusta Blvd., Chicago, IL 60630. Repairs being claimed for warranty must be sent to Freedman Seating Company for prior approval and warranty acceptance before any warranty claims can be made. Parts are being claimed for warranty must be sent to Freedman Seating Company for prior approval and warranty acceptance before any warranty claims can be made.

INSPECTION AND VERIFICATION:
The owner must provide access to the failed seat so that Freedman Seating Company's authorized representative can perform an onsite inspection. Alternatively, Freedman Seating Company may ask the owner to ship the failed seat to Freedman Seating Company's laboratory for inspection. Within 30 days of the inspection, either on-site or in the laboratory, Freedman Seating Company will render an opinion as to whether or not the claimed failure is covered by the warranty.

GENERAL MAINTENANCE:
Freedman Seating Company provides the proper maintenance instructions, as well as recommended service intervals with each seat. Warranty is contingent upon documented performance of recommended maintenance and service. All replacement parts should be recommended or authorized Freedman Seating Company components. Failure to purchase proper components will null and void the warranty.

DESIGN:
Freedman Seating Company reserves the right to modify parts and design specifications without notice as long as the seats meet general specifications, unless otherwise committed per contract. In case further non-conforming changes have to be incorporated, Freedman Seating Company will submit such changes to customer for prior approval.

OTHER:
The terms and warranty are contingent upon customers meeting agreed upon payment terms as specified in Freedman Seating Company proposals. Terms and warranty supersede any other terms including but not limited to customer terms printed on the back of Purchase Orders, listed on websites, or other sources from customers.

Warranty Registration

TO REGISTER YOUR PRODUCT WARRANTY under the terms of Gerflor's North America Limited Product Warranty, please complete the form below and mail to:

Gerflor USA Inc
595 Supreme Dr
Bensenville 60106 IL USA.

I acknowledge having received and read GERFLOR's technical documents and specifications concerning the product warranty:

Product Type: _____

Roll numbers & Quantity (sq.yds/m²): _____

Installation Date: _____

Transit Authority: _____

Address: _____

State/Prov: _____ Zip/Postal Code: _____

OEM: _____

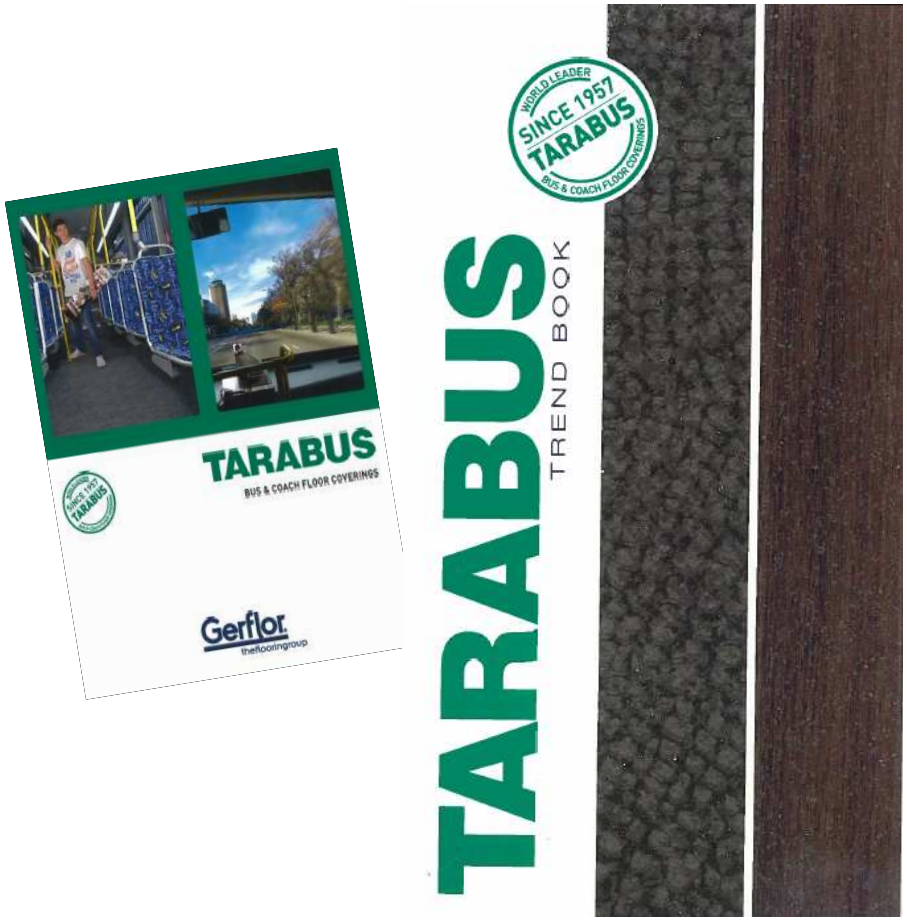
Address: _____

State/Prov: _____ Zip/Postal Code: _____

Represented by: _____

Signature:

TARABUS
PRODUCT WARRANTY



TARABUS FLOORCOVERINGS LIMITED WARRANTY AGREEMENT

Warranty Terms and Conditions

GERFLOR, as a manufacturer, expressly warrants that TARABUS floorcoverings for buses and coaches are conform to the technical data sheet in force at the time of delivery.

GERFLOR further expressly warrants that the wear layer of TARABUS floorcoverings shall be free from defects in material for **12 years (twelve years)** from the date of sale, provided such floorcoverings are exclusively subject to normal use and service, and are installed and maintained in accordance exactly with GERFLOR's recommendations that the buyer declares to be aware of.

The wear layer consists of the material above the glass fiber web in the floorcovering. GERFLOR expressly warrants that the glass fiber web will not appear in the floorcovering for **12 years (twelve years)** from the date of sale.

This entire warranty will become null and void if conditions of the subflooring and method of installation do not conform exactly to GERFLOR's specifications.

This entire warranty does not cover damage caused, in whole or in part, by conditions beyond the control of GERFLOR, including but not limited to:

- Use for which material is not designated.
- Fire, explosion, or natural disasters.
- Faulty installation
- Casualties
- Ordinary wear and tear
- Abuse
- Faulty design or construction of the vehicles.
- Failure of the adhesive to adhere to the subfloor because of presence of moisture.
- Fault in the subfloor.
- Failure of the welding
- Uneven wear of sections of the floorcovering.
- Alteration of the initial appearance of the floorcovering, particularly in high traffic areas exposed to extreme heavy wear.
- Damage caused by negligent or improper maintenance procedures and other causes not specified but beyond the control of GERFLOR.
- Fading or discoloration from sunlight or heat.
- Mechanical damages. burns, chemical soiling or damage due to clamp or inadequate cleaning, not recommended by GERFLOR.

The presence of moisture between the TARABUS and the subfloor shall be considered proof of subfloor failure or faulty design or construction.

This warranty will be applied only if the product is admitted to be the only cause of disorder.

The sole and exclusive remedy against GERFLOR arising from the purchase or use of TARABUS is limited to supply of material in replacement of the sole defective part of material (after examination. verification and approval by GERFLOR) with material of equivalent quality –(colour shade between brand new material and existing one will be accepted by the owner)-. All other compensation of whatever nature will be excluded.

If the claim is accepted by GERFLOR, with respect to the warranty of the wear layer, for the first 2 (two) years from the date of sale, GERFLOR will supply the material, in replacement of defective one, free of charge. More than 2 (two) years from the date of sale, until the expiration of this express warranty of the wear layer, a depreciation of 7% (seven per cent) per year of the cost of supplied material will apply.

WARRANTY AND LIABILITY LIMITS

THE ABOVE EXPRESSED MANUFACTURER's WARRANTY SHALL BE THE EXCLUSIVE WARRANTY AND LIMITED TO THE QUALITY OF THE PRODUCT, AND GERFLOR MAKES NO OTHER WARRANTIES. GERFLOR EXPRESSLY DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANBILITY AND IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE.

IT IS AGREED THAT GERFLOR SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, including but not limited to, loss of income, loss of use, damage to other property, the cost of removing and reinstalling TARABUS floorcoverings, attorney's fees, and any liability you may have with respect to any other person.



TIME LIMIT FOR PLACING A CLAIM

To be admissible, all claims by means of this warranty contract must be carried out by **registered letter with return receipt** addressed to GERFLOR, at the address indicated at the top of this warranty contract, **accompanied by the purchase invoice** for the Product, within THIRTY DAYS following finding of irregularities and within the aforementioned warranty contract time limit. If any clauses of this Warranty Agreement conflicted with the law or a given jurisdiction, only said clause would be considered inapplicable, the remaining text of the Agreement remaining unaffected.

This Limited Warranty shall be governed and construed in accordance with the laws of the State of Illinois without regard to any choice of low principles: All disputes that may arise between You and GERFLOR relating in any way to this Limited Warranty Agreement, to the extent such disputes cannot be resolved by negotiation between You and GERFLOR, shall be decided by arbitration carried out in accordance with the Federal Arbitration Act and the Commercial Arbitration Rules of the American Arbitration Association. In the event of such a dispute, arbitration may be initiated by a request for arbitration by either party hereto addressed to the other party, and shall be completed within sixty (60) days of such request unless extended because of unavailability of an arbitrator or other events beyond the control either party. The arbitrator shall be chosen by mutual agreement of the parties and, in the event the parties cannot so agree, either party may file a written application to have the arbitrator designated by the American Arbitration Association. The arbitration proceeding shall take place in Chicago, Illinois or such other location as the parties shall agree and shall be conducted in accordance with the Commercial Arbitration ‘’Expedited’’ Rules of the American Arbitration Association. The arbitrator shall have all powers necessary to determine the issues presented, including without limitation, but subject to the terms of this Limited Warranty, any damages. The decision of the arbitrator shall be final and conclusive, both as to costs and the merits, and the parties agree that they shall be bound by this decision.



IMPORTANT CONTACT INFORMATION

Mailing Address: P.O. Box 495, Rustburg, VA 24588
Shipping: 5120 Wards Road, Evington, VA 24550

• MAIN OFFICE:
TOLL FREE: (800) 533-1006
(434) 821-1000
FAX: (434) 821-8203
WEB: *www.sonnymerryman.com*

• SERVICE DEPARTMENT:
TOLL FREE (800) 533-1006
FAX: (434) 821-2131
Brady Childress, Director Customer Support
Ext. 8620, *brady@sonnymerryman.com*
Pam Lawhorn, Service Administrator
Ext. 8626, *pam@sonnymerryman.com*
Tim George, Service Team Leader
Ext. 8625, *tim@sonnymerryman.com*

•WARRANTY:
Patty Webb, Warranty Administrator
Ext. 8614, *patty@sonnymerryman.com*

• PARTS:
TOLL FREE: (800) 386-7278
FAX: (434) 821-2621
Derek Shelton, Parts Team Leader
Ext. 8633, Derek@sonnymerryman.com

• BUSINESS:
Tami Carr, Accounts Payable
Ext. 8606, tami@sonnymerryman.com

Hampton Roads Sales & Service Center
610 Woodlake Drive
Chesapeake, VA 23320
TOLL FREE: (866) 481-7211
(757) 361-9070, FAX (757) 361-9072
Reggie Lewis, Customer Support Manager
reggie@sonnymerryman.com

Northern Virginia Sales & Service Center
10149 Piper Lane
Bristow, VA 20136
TOLL FREE: (866) 470-0305
(703) 331-5516 –(703) 331-5517
FAX (703) 331-5518
Ken Lewis, Customer Support Manager
Kenlewis@sonnymerryman.com

Problem Escalation Procedure (PEP)

Dedicated Service Representative – Brady Childress, Service Manager

- **First point of contact for all service concerns**
- **20 years of experience in the service department**
- **Has completed multiple training and educational programs specific to the bus industry**

Service administration is overseen by the Service Manager, Brady Childress, who will work with the service team and in direct contact with Mr. Seals and Ms. Webb to resolve any warranty issues that arise with the appropriate manufacturer. Mr. Childress may be reached directly at 1-800-533-1006 X8620 and via e-mail at brady@sonnymerryman.com

Dedicated Warranty Representative – Patty Webb, Warranty Manager

- **First point of contact for all warranty concerns**
- **25 years of experience in the warranty department**
- **Has completed multiple training and educational programs specific to the bus industry**

Warranty administration is overseen by the Warranty Manager, Patty Webb, who will work with the warranty team and in direct contact with Mr. Childress and Mr. Seals to resolve any warranty issues that arise with the appropriate manufacturer. Ms. Webb may be reached directly at 1-800-533-1006 X8614 and via e-mail at patty@sonnymerryman.com

TP 222

<u>Dedicated Parts Representative –</u> Derek Shelton, Parts Manager

- **First Point of contact for parts department**
- **30 years of experience in the parts industry**
- **7 years of experience with the Sonny Merryman, Inc.**

The Parts Department is managed by Derek Shelton who will work with the parts team and in direct contact with Mr. Childress, Ms. Webb and Mr. Seals to resolve any parts issues that arise with the appropriate manufacturers. Mr. Shelton may be reached directly at 1-800-533-1006 X8633and via e-mail at Derek@sonnymerryman.com

www.sonnymerryman.com

NORTHERN VIRGINIA
10149 Piper Lane
Bristow, VA 20136
866.470.0305
703.331.5518

CENTRAL VIRGINIA
5120 Wards Road
Evington, VA 24550
800.533.1006
434.821.8203

HAMPTON ROADS
1221 Fleetway Drive
Chesapeake, VA 23323
866.481.7211
757.485.3795

GREATER RICHMOND
11228 Hopson Road
Ashland, VA 2305
804.297.3111
804.297.3112

STARCRAFT BUS
a division of Forest River, Inc.

STARCRAFT COMMERCIAL BUS
OPTIONAL EXTENDED WARRANTY

NOTICE

Please return the warranty registration card to register the warranty with STARCRAFT BUS so that Starcraft Bus may record your rights under this limited warranty and to assure prompt assistance. Your dealer will provide the warranty card for you to sign. If you do not remember signing a STARCRAFT BUS warranty card at the time of delivery, please contact your dealer.

1. Who Warrants the product

The product, as described and limited here, is warranted by the manufacturer and installer of the body: STARCRAFT BUS, Division of Forest River, Inc., hereinafter referred to as STARCRAFT BUS, 2367 Century Drive, Goshen, IN; an Indiana Corporation; and is administered by the STARCRAFT BUS Customer Service Dept., Goshen, Indiana 46528.

2. Who Is Covered

STARCRAFT BUS, the warrantor, extends this limited warranty to the original owner of the vehicle during the WARRANTY PERIOD.

3. What Is Covered

STARCRAFT BUS, your warrantor, extends the following limited warranty to you, which limited warranty covers your conversion only as to material defects in all materials and workmanship supplied by or performed by STARCRAFT BUS.

4. Warranty Period

The STARCRAFT BUS limited warranty is for a period of three (3) years from the date of first delivery or 36,000 miles (optional extended warranty) for the Xpress; Starquest; Starlite; Allstar; Allstar XL; MVP; Ultrastar, and the XLT, whichever occurs first, except for other coverages listed under “Other Warranties that may Apply” and items listed under “Exclusions and Limitations” and “Limits of the Warranty.”

5. Extended Warranty on Structural Items

Warrantor warrants to the original purchaser for a period of five (5) years from the date of first delivery or 100,000 miles, whichever comes first, that this produce shall be free of SUBSTANTIAL DEFECTS arising out of or relating to the structural portion of the product. THIS STRUCTURAL WARRANTY IS INTENDED TO COVER ONLY THE PERFORMANCE OF THE STEEL CAGE STRUCTURE OF THE BUS BODY for the Xpress; Starquest; Starlite; Allstar; Allstar XL; MVP; Ultrastar, and the XLT.

Custom paint and/or tape application, if performed by STARCRAFT BUS, is warranted to be free of substantial defects in workmanship and materials provided by STARCRAFT BUS for one (1) year (12 months) from date of original purchase.

6. Other Warranties That May Apply

STARCRAFT BUS does not warrant the base vehicle itself. The vehicle engine, chassis, drive train, suspension system, battery, and other chassis components are covered by a separate warranty offered by the manufacturer of the vehicle and administered by the manufacturer’s authorized dealers. The tire manufacturer separately warrants tires. Examples of other manufacturer warranties, which may include the following, but not limited to:

- Electrical Components
- Air Conditioning and Heater(s)
- Wheelchair Restraints and Wheelchair Lifts

For a complete list of items and their respective warrantor, please contact Starcraft Bus Customer Service Department.

7. Owner’s Responsibility

Proper maintenance and cleaning of the exterior and interior of the vehicle is the responsibility of the owner. See the owner’s manual for proper care instructions. Defects or damage as a result of improper care or maintenance are not covered by the warranty.

8. Exclusions and Limitations

Damage caused by abuse, misuse, neglect, failure to observe reasonable and required maintenance practices, acid rain, accidents, natural disasters, acts of war and normal wear and tear and facing of fabrics, carpeting and/or fiberglass are not covered. Light bulbs and fuses are not covered.

Damage or deterioration to the physical appearance of the unit if such damage is the result of normal use, wear and tear, or exposure to the elements.

Damages that may occur to the chassis, frame, other parts or components that occur due to overloading will not be covered and may invalidate portions of the STARCRAFT BUS warranty.

Cosmetic or surface corrosion resulting from stone chips or scratches in paint are not covered.

STARCRAFT BUS does not cover accessories covered by their own manufacturer’s warranties. Those items listed in paragraph 6 above are not covered or warranted by STARCRAFT BUS.

Replacement parts provided under terms of the warranty will whenever possible, match original equipment. When necessary, STARCRAFT BUS will substitute parts of comparable function and value. Defective items may be replaced with new, remanufactured, reconditioned or repaired components.

Modifications, alterations or repairs performed by unauthorized personnel may invalidate portions of the STARCRAFT BUS warranty. In addition, USING THIS VEHICLE TO TOW ANOTHER VEHICLE IS PROHIBITED AND MAY VOID WARRANTY. Contact STARCRAFT BUS Customer Service before you make any changes.

9. Recovery Limitations

NO PERSON SHALL BE ENTITLED TO RECOVER FROM WARRANTOR FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES ARISING OUT OF OR RELATING TO ANY DEFECT IN THE PRODUCT. These limitations include, but are not limited to, loss of time; loss of use; loss of revenues, salaries or commissions; towing charges; bus fares; car rentals; gasoline expenses; telephone charges; inconvenience or other incidental damages.

10. How to get warranty service

To obtain warranty service, contact or visit the dealership where you originally purchased your vehicle or another warranty service facility designated by STARCRAFT BUS. Have the dealership contact Starcraft bus Customer Service Department for authorization to have a warranty claim submitted. If you or your dealer has moved, or if your dealer is no longer in business, contact STARCRAFT BUS Customer Service Department (see address and telephone numbers below) for the name of a STARCRAFT BUS dealer nearest you. Your claim must be made within 30 days of the discovery of the defect. Based on the determination of STARCRAFT BUS, and subject to the terms of the warranty, the warranty repair work will be authorized by STARCRAFT BUS.

All warranty claims must be reported within the warranty period. Warranty personnel must authorize all warranty service prior to performance. Warranty service may be reported directly to the warrantor or to one of their authorized dealers. If warranty personnel approve warranty service, you must leave the unit at the appropriate warranty service location for a sufficient time to perform service.

11. Who Performs Warranty Service

The best place to obtain warranty service is at the dealership where you originally purchased your bus. If the dealership cannot perform the service work, they should call STARCRAFT BUS Customer Service Department for assistance (see number below). If you are unable to visit your original dealer, contact STARCRAFT BUS Customer Service Department (address below) for the name and location of a STARCRAFT BUS dealer near you.

12. Dispute Resolution

Should you be unable to resolve a disagreement with your dealer regarding your right to pursue warranty coverage for a needed repair, contact the STARCRAFT BUS Customer Service Department (see address below). If a dispute about warranty service arises between STARCRAFT BUS and you, the owner, the disagreement will be resolved in accordance with the customary procedures of the American Arbitration Association relating to commercial transactions, or the dispute will be submitted to a panel of three (3) arbitrators for decision. The panel will be made up of one member appointed by STARCRAFT BUS, one member appointed by the complainant/owner, and one member from the arbitrators group mentioned above. Any and all legal remedies shall be available to the owner after pursuing this informal dispute resolution if a ruling is entered against STARCRAFT BUS and STARCRAFT BUS fails to abide by the ruling. The expenses of arbitration will be paid by the party against whom the arbitrator(s) rule.

13. Limits Of Warranty

This written statement of limited warranty represents the entire warranty authorized and offered by STARCRAFT BUS. There are no warranties or representations beyond those expressed in this written document. Any dealership, salesperson or agent cannot amend it. It expressly limits all warranties, including, but not limited to, by way of specification, both express and implied warranties, including warranties or merchantability and fitness for a particular purpose along with all other liabilities or obligations of STARCRAFT BUS.

FEDERAL COMPLIANCE

THE TERMS OF THE WARRANTOR'S UNDERTAKING EXPRESSED IN THIS LIMITED WARRANTY ARE DRAFTED TO COMPLY WITH THE MAGNUSEN MOSS WARRANTY LEGISLATION, P.L. 93-637 OF 1974, AND OTHER APPLICABLE LAW. ANY WARRANTY PROVISIONS PROMULGATED BY THE FEDERAL TRADE COMMISSION PURSUANT TO RULES OR ANY OTHER LAW RELATIVE THERETO ARE EXPRESSLY INCORPORATED HEREIN. TO THE EXTENT ANY PROVISIONS OF THIS LIMITED WARRANTY ARE INCONSISTENT WITH STATE LAWS, ONLY THOSE PARTS INCONSISTENT ARE VOID.

STARCRAFT BUS
Division of Forest River, Inc.
CUSTOMER SERVICE DEPT.
2367 Century Drive
Goshen, IN 46528
Phone: 800.348.7440
Fax: 574.642.4853

STARTRANS BUS WARRANTY

NOTICE

Please return the warranty registration card to register the warranty with STARTRANS BUS so that Startrans Bus may record your rights under this limited warranty and to assure prompt assistance. Your dealer will provide the warranty card for you to sign. If you do not remember signing a STARTRANS BUS warranty card at the time of delivery, please contact your dealer.

1. Who Warrants the product

The product, as described and limited here, is warranted by the manufacturer and installer of the body: STARTRANS BUS, Division of Forest River, Inc., hereinafter referred to as STARTRANS BUS, 2408 Century Drive, Goshen, IN; an Indiana Corporation; and is administered by the STARTRANS BUS Customer Service Dept., Goshen, Indiana 46528.

2. Who Is Covered

STARTRANS BUS, the warrantor, extends this limited warranty to the original owner of the vehicle during the WARRANTY PERIOD.

3. What Is Covered

STARTRANS BUS, your warrantor, extends the following limited warranty to you, which limited warranty covers your conversion only as to material defects in all materials and workmanship supplied by or performed by STARTRANS BUS.

4. Warranty Period

The STARTRANS BUS limited warranty is for a period of one (1) year from the date of first delivery or 12,000 miles, whichever occurs first, except for other coverages listed under “Other Warranties that may Apply” and items listed under “Exclusions and Limitations” and “Limits of the Warranty.”

5. Extended Warranty on Structural Items

Warrantor warrants to the original purchaser for a period of five (5) years from the date of first delivery or 75,000 miles, whichever comes first, that this produce shall be free of SUBSTANTIAL DEFECTS arising out of or relating to the structural portion of the product. THIS STRUCTURAL WARRANTY IS INTENDED TO COVER ONLY THE PERFORMANCE OF THE STEEL CAGE STRUCTURE OF THE BUS BODY.

Custom paint and/or tape application, if performed by STARTRANS BUS, is warranted to be free of substantial defects in workmanship and materials provided by STARTRANS BUS for one (1) year (12 months) from date of original purchase.

6. Other Warranties That May Apply

STARTRANS BUS does not warrant the base vehicle itself. The vehicle engine, chassis, drive train, suspension system, battery, and other chassis components are covered by a separate warranty offered by the manufacturer of the vehicle and administered by the manufacturer’s authorized dealers. The tire manufacturer separately warrants tires. Examples of other manufacturer warranties, which may include the following, but not limited to:

- Electrical Components
- Air Conditioning and Heater(s)
- Wheelchair Restraints and Wheelchair Lifts

For a complete list of items and their respective warrantor, please contact Startrans Bus Customer Service Department.

7. Owner’s Responsibility

Proper maintenance and cleaning of the exterior and interior of the vehicle is the responsibility of the owner. See the owner’s manual for proper care instructions. Defects or damage as a result of improper care or maintenance are not covered by the warranty.

8. Exclusions and Limitations

Damage caused by abuse, misuse, neglect, failure to observe reasonable and required maintenance practices, acid rain, accidents, natural disasters, acts of war and normal wear and tear and facing of fabrics, carpeting and/or fiberglass are not covered. Light bulbs and fuses are not covered.

Damage or deterioration to the physical appearance of the unit if such damage is the result of normal use, wear and tear, or exposure to the elements.

Damages that may occur to the chassis, frame, other parts or components that occur due to overloading will not be covered and may invalidate portions of the STARTRANS BUS warranty.

Cosmetic or surface corrosion resulting from stone chips or scratches in paint are not covered.

STARTRANS BUS does not cover accessories covered by their own manufacturer’s warranties. Those items listed in paragraph 6 above are not covered or warranted by STARTRANS BUS.

Replacement parts provided under terms of the warranty will whenever possible, match original equipment. When necessary, STARTRANS BUS will substitute parts of comparable function and value. Defective items may be replaced with new, remanufactured, reconditioned or repaired components.

Modifications, alterations or repairs performed by unauthorized personnel may invalidate portions of the STARTRANS BUS warranty. In addition, USING THIS VEHICLE TO TOW ANOTHER VEHICLE IS PROHIBITED AND MAY VOID WARRANTY. Contact STARTRANS BUS Customer Service before you make any changes.

9. Recovery Limitations

NO PERSON SHALL BE ENTITLED TO RECOVER FROM WARRANTOR FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES ARISING OUT OF OR RELATING TO ANY DEFECT IN THE PRODUCT. These limitations include, but are not limited to, loss of time; loss of use; loss of revenues, salaries or commissions; towing charges; bus fares; car rentals; gasoline expenses; telephone charges; inconvenience or other incidental damages.

10. How to get warranty service

To obtain warranty service, contact or visit the dealership where you originally purchased your vehicle or another warranty service facility designated by STARTRANS BUS. Have the dealership contact Startrans bus Customer Service Department for authorization to have a warranty claim submitted. If you or your dealer has moved, or if your dealer is no longer in business, contact STARTRANS BUS Customer Service Department (see address and telephone numbers below) for the name of a STARTRANS BUS dealer nearest you. Your claim must be made within 30 days of the discovery of the defect. Based on the determination of STARTRANS BUS, and subject to the terms of the warranty, the warranty repair work will be authorized by STARTRANS BUS.

All warranty claims must be reported within the warranty period. Warranty personnel must authorize all warranty service prior to performance. Warranty service may be reported directly to the warrantor or to one of their authorized dealers. If warranty personnel approve warranty service, you must leave the unit at the appropriate warranty service location for a sufficient time to perform service.

11. Who Performs Warranty Service

The best place to obtain warranty service is at the dealership where you originally purchased your bus. If the dealership cannot perform the service work, they should call STARTRANS BUS Customer Service Department for assistance (see number below). If you are unable to visit your original dealer, contact STARTRANS BUS Customer Service Department (address below) for the name and location of a STARTRANS BUS dealer near you.

12. Dispute Resolution

Should you be unable to resolve a disagreement with your dealer regarding your right to pursue warranty coverage for a needed repair, contact the STARTRANS BUS Customer Service Department (see address below). If a dispute about warranty service arises between STARTRANS BUS and you, the owner, the disagreement will be resolved in accordance with the customary procedures of the American Arbitration Association relating to commercial transactions, or the dispute will be submitted to a panel of three (3) arbitrators for decision. The panel will be made up of one member appointed by STARTRANS BUS, one member appointed by the complainant/owner, and one member from the arbitrators group mentioned above. Any and all legal remedies shall be available to the owner after pursuing this informal dispute resolution if a ruling is entered against STARTRANS BUS and STARTRANS BUS fails to abide by the ruling. The expenses of arbitration will be paid by the party against whom the arbitrator(s) rule.

13. Limits Of Warranty

This written statement of limited warranty represents the entire warranty authorized and offered by STARTRANS BUS. There are no warranties or representations beyond those expressed in this written document. Any dealership, salesperson or agent cannot amend it. It expressly limits all warranties, including, but not limited to, by way of specification, both express and implied warranties, including warranties or merchantability and fitness for a particular purpose along with all other liabilities or obligations of STARTRANS BUS.

FEDERAL COMPLIANCE

THE TERMS OF THE WARRANTOR'S UNDERTAKING EXPRESSED IN THIS LIMITED WARRANTY ARE DRAFTED TO COMPLY WITH THE MAGNUSEN MOSS WARRANTY LEGISLATION, P.L. 93-637 OF 1974, AND OTHER APPLICABLE LAW. ANY WARRANTY PROVISIONS PROMULGATED BY THE FEDERAL TRADE COMMISSION PURSUANT TO RULES OR ANY OTHER LAW RELATIVE THERETO ARE EXPRESSLY INCORPORATED HEREIN. TO THE EXTENT ANY PROVISIONS OF THIS LIMITED WARRANTY ARE INCONSISTENT WITH STATE LAWS, ONLY THOSE PARTS INCONSISTENT ARE VOID.

STARTRANS BUS
Division of Forest River, Inc.
CUSTOMER SERVICE DEPT.
2408 Century Drive
Goshen, IN 46528
Phone: 800.348.7440

General Pricing Information

1. **FREIGHT POLICY:** All prices are F.O.B. Ft. Lauderdale, FL
2. **PAYMENT TERMS:** Net thirty (30) days from the date on invoice, on approved credit.
3. **MINIMUM INVOICE CHARGE:** $150.00
4. **PRICES:** Prices are in U.S.A. dollars and are subject to change without notice. Possession of pricing information does not guarantee purchaser the prices indicated therein. Prices for cataloged items not shown in this pricing information should be reconfirmed by customer prior to ordering. Prices do not include applicable state or local taxes.
5. **RETURNS:** No material may be returned without the written consent of Sure-Lok. A twenty (20) percent restocking charge and full outgoing and incoming freight charges will apply to material accepted for return.

Limited Warranty

AL800 TITAN Series Systems are warranted for a period of five (5) years from date of shipment to be free from defects in material or workmanship.
AL700 Titan Series Systems and the GO2 are warranted for a period of three (3) years from date of shipment to be free from defects in material or workmanship. All other Sure-Lok products are warranted for a period of one (1) year from date of shipment to be free from defects in material or workmanship. Any products found to be defective in material or workmanship within the warranty period will be repaired or replaced.

This warranty does not extend to any product which has been subjected to misuse, abuse, accident, negligence, exposure to the elements or chemicals, alteration or unauthorized repair.

Upon notification that a product has been found to be defective, Sure-Lok will advise to which location the product should be returned via freight prepaid.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. IN NO EVENT WILL THE COMPANY BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR LOSS OF VEHICLE, CARGO OR PROFITS.

Customer Orders

Phone Toll Free: 866-SURE-LOK (866-787-3565)
Fax Toll Free: 866-TIE-DOWN (866-843-3696)
E-Mail: orders@sure-lok.com

SURE-LOK®
Safe and Secure

Trans/Air Manufacturing Corporation
5 Year 100,000 Mile Limited Warranty

Subject to the conditions and limitations set forth below, for a period of 5 years, or 100,000 miles, (whichever comes first) starting at the date of delivery to the End User and with proper registration documentation. Trans/Air Manufacturing Corporation (Trans/Air) warrants to the original owner, if still the user, that each manufactured system/component will be free from defects in factory workmanship and materials when used and maintained in accordance with the recommended procedures. Trans/Air will furnish new or remanufactured replacements parts and cover the cost of repair labor for 5 years, or 100,000 miles following delivery, in accordance with the current Trans/Air flat rate labor schedule when performed at an authorized Trans/Air Service Center. This is the End User's sole and exclusive remedy.

THIS IS TRANS/AIR'S SOLE WARRANTY AND IT IS FURNISHED IN LIEU OF ANY AND ALL OTHER WARRANTIES. TRANS/AIR MAKES NO OTHER EXPRESS OR IMPLIED WARRANTIES WHATSOEVER. NO WARRANTY OF MERCHANTIABILITY AND NO WARRANTY OF FITNESS FOR PARTICULAR PURPOSE IS MADE BY TRANS/AIR.

Conditions and Limitations

1) In order for a 5 year, 100,000 mile, system warranty to apply, the customer must purchase the evaporator(s), condenser(s), compressor(s), piping kits, electrical kits, mount kits and refrigeration hose from Trans/Air. If the full system is not purchased from Trans/air, the 5 year, 100,000 mile warranty applies to Trans/Air supplied evaporators and condensers only. All compressors, piping kits, and electrical kits purchased outside of a full system, will be considered a service part and will carry a 180 day warranty. All mount kits purchased outside of a full system, and used on a Trans/Air system, will be considered a service part and will carry a 180 day warranty. All mount kits purchased outside of a full system, and used on a system other than Trans/Air, will carry no warranty. All other components supplied by Trans/Air are covered by standard parts warranty (see #4 below). Extended warranty coverage may be purchased from Trans/Air at the time of purchase of the unit or system. Correction of a failure under this warranty does not extend the warranty beyond the 5 year, 100,000 mile warranty period.

2) Service parts are warranted for a 180 day period from the date of sale or until the expiration of the original equipment warranty, whichever is later. (Compressors are warranted for 1 year) If required, parts covered by warranty must be returned to Trans/Air's factory in Dallastown, PA, by specified carrier freight prepaid, within standard Return Goods Authorization procedures, for evaluation, in order for Trans/Air to authorize any warranty claim.

3) Trans/Air will be responsible for the costs of repairs or replacement covered by warranty only if performed at an authorized Trans/Air Service Center. The Service Center is responsible for effecting repairs or replacement during the warranty period in accordance with current Trans/Air warranty procedures. A customer requesting service at a location other than an approved Service Center, or one requesting overtime, shall be responsible for all additional warranty repair expenses in excess of the flat rate allowed. Trans/Air is not responsible for towing charges.

4) If the customer has not properly registered the Trans/Air system, the Service Center is not authorized to render warranty services without charge. All information on the warranty registration from must be completed in its entirety and returned to Trans/air to activate the warranty.

5) Trans/Air does not warrant the installation of Trans/Air products unless installed by Trans/Air or an authorized Trans/Air Turnkey installation facility. In the cases of installation related failures, which are not covered by warranty Trans/Air specifically is not responsible for failures attributable to inadequate provision by the installer of structural support or inadequate provision of electrical requirements.

6) This warranty does not apply in cases of a failure of Trans/Air product which is attributable to improper evacuation procedures, or the introduction of non-approved refrigerant oil, additives, or other contaminants into the system.

7) This warranty does not apply in cases of failure of Trans/Air product, which is attributable to failure of the end user to perform or provide preventative maintenance in accordance with Trans/Air's guidelines. Examples include, but are not limited to, failure to properly maintain belt tension, clean condenser coils, replace evaporator filters, maintain electrical systems to provide proper voltage to components, or check and tighten hardware or fittings, which may have loosened due to vibration. (See Trans/Air Preventive Maintenance Schedule)

8) This warranty does not apply to loss of refrigerant or any damage caused by loss of refrigerant unless directly attributable to the failure of a Trans/Air product which, at the time of the failure, was under warranty.

9) Trans/Air reserves the right to make changes in design or improvements to its products or parts thereof, without obligation to make or install of such changes or improvements on existing units or upon products covered by this warranty.

10) If Trans/Air makes a product improvement program available to the End User, Trans/Air reserves the right to limit the duration of the programs unless it is safety related. Expenses incurred in completing said product improvements after the closing date of the program are the responsibility of the End User.

11) Trans/Air's warranty shall not apply in the case of damage incurred during shipment, accidental damage, abuse, misuse, act of nature, or if the serial number is missing, or to any product which, in the sole opinion of Trans/Air, has been installed, altered or repaired in a manner affecting the efficiency or performance of the unit or inconsistent with Trans/Air's written procedures.

12) This warranty applies only within the boundaries of the whole United States, its territories, and Canada. For other available coverage that may be purchased, contact Trans/Air.

TRANS/AIR'S LIABILITY TO THE PURCHASER FOR DAMAGES FROM ANY CAUSE WHATSOEVER AND REGARDLESS OF THE FORM (S) OF ACTION, WHETHER IN CONTACT OR TORT, INCLUDING NEGLIGENCE OR OTHERWISE, SHALL BE LIMITED TO THE VALUE OF REPAIRS TO OR REPLACEMENT OF THE DEFECTIVE COMPONENTS DURING THE WARRANTY PERIOD, AS THE EXCLUSIVE REMEDY, AND STRAIGHT TIME LABOR CHARGES AS OUTLINED IN ITS CURRENT WARRANTY PROCEDURE MANUAL AND FLATE RATE LABOR SCHEDULE. IN NO EVENT SHALL TRANS/AIR BE LIABLE WHATSOEVER FOR ANY PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR FOR LOST PROFITS OR OTHER COMMERCIAL LOSSES FROM ANY CAUSE WHATSOEVER, WHETHER OR NOT TRANS/AIR HAS RECEIVED NOTICE OF THE POSSIBILITY OR CERTAINTY OF SUCH DAMAGES OR LOSSES. TRANS/AIR WILL NOT BE LIABLE FOR ANY LOSS OCCURING BECAUSE THE EQUIPMENT IS OUT OF SERVICE. NO ACTION OR PROCEEDING ARISING OUT OF, FOR BREACH OF, OR IN ANY MANNER RELATING TO THIS WARRANTY MAY BE BROUGHT BY ANYONE AFTER SIX (6) MONTHS FROM NOTIFICATION TO TRANS/AIR OF AN IN-WARRANTY FAILURE.

July 23 , 2020

Warranty Locations:

TransAir:
1.Worldwide Equipment 408 New Goff Mountain Rd Charleston WV 25313.

2.Worldwide Equipment 685 Industrial Park Rd Jane Lew WV 26378.

3.Fleet Authority 3170 Draper Dr #10 Fair fax Va 22031.

4. Piedmount Fleet Services 201 Mill Ridge RD Lynchburg Va 24502

Braun:

Matheny Motors Locations:

- **Mineral Wells, WV**
  Phone: 304-485-4418 ext. 532
  Toll Free: 800-284-4418 ext. 532
  Fax: 304-489-0061
  50 Matheny Lane
  Mineral Wells, WV 26150
- **Nitro, WV**
  Phone: 304-769-5860
  Toll Free: 877-986-4876
  Fax: 304-769-5866
  4125 1st Ave.
  Nitro, WV 25143
- **Huntington, WV**
  Phone: 304-453-6154
  Toll Free: 800-604-6226
  Fax: 304-453-3320
  1375 Route 52
  Kenova, WV 25530
- **Martinsburg, WV**
  Phone: 304 267-8810
  123 Reliance Rd
  Martinsburg, WV, 25403
- **Beckley**
  Phone: 304-699-3611
  322 Dry Hill Road
  Beckley, WV 25801

Starcraft:
Sonny Merryman Inc Locations:

- **5120 Wards Road**
  Evington, VA. 24550

- **10149 Piper Lane**
  Bristow, VA. 20136

Ford:

1. **Astorg Ford**
   2028 7th Street
   Parkersburg, WV. 26101

2. Midway Ford
   201 Orchard Park Rd.
   Hurricane WV. 25526

3. Ramey Ford
   498 Courthouse Rd.
   Princeton, WV. 24740

4. Chenoweth Ford
   1564 East Pike St.
   Clarksburg, WV. 26301

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735
Doc Description: Addendum 1 - 156" WB DRW Narrow Body Cutaway
Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-07-08	2020-07-17 13:30:00	CRFQ 0805 PTR2000000003	2

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc.
5120 Wards Road
Evington, VA. 24550

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X C. [illegible] **FEIN #** 540806-176 **DATE** 07/22/2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum 1 issued for the following reasons:

1. To publish a copy of vendor questions with responses.

No other changes.

INVOICE TO	SHIP TO
ACCOUNTS PAYABLE PUBLIC TRANSIT DIVISION OF BLDG 5 RM 650 1900 KANAWHA BLVD E CHARLESTON WV25305-0432 US	GENERAL MANAGER PUBLIC TRANSIT DIVISION OF KANAWHA VALLEY REGIONAL TRANSPORTATION AUTHORITY 1550 FOURTH AVE CHARLESTON WV 25324 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	156" WB DRW Narrow Body Cutaway	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
25101502	Startrans		Candidate II

Extended Description :
156" WB DRW Narrow Body Cutaway

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Question deadline 4:00 p.m.	2020-07-07

SOLICITATION NUMBER: PTR2000000003
Addendum Number: 1

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[ ] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[✓] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[ ] Other

Description of Modification to Solicitation:

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1. To publish a copy of vendor questions with responses.

No other changes.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: PTR2000000003

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[X]	Addendum No. 1	[ ]	Addendum No. 6
[ ]	Addendum No. 2	[ ]	Addendum No. 7
[ ]	Addendum No. 3	[ ]	Addendum No. 8
[ ]	Addendum No. 4	[ ]	Addendum No. 9
[ ]	Addendum No. 5	[ ]	Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Sonny Merryman Inc.
Company

Authorized Signature

07/22/2020
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735

Doc Description: Addendum 1 - 156" WB DRW Narrow Body Cutaway

Proc Type: Central Master Agreement

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BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc.
5120 Wards Road
Evington, VA. 24550

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X **FEIN #** 540806-176 **DATE** 07/22/2020

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Extended Description :
156" WB DRW Narrow Body Cutaway

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ATTACHMENT A

PTR2000000003

156' WB DRW Narrow Body Cutaway

Vendor Questions with responses

Q.1. Section 3.19, page 12, of the specifications related to "Body Structure". Please accept the Startrans Bus body structure per the attached specs.

A.1. The Division will accept the Startrans Bus Body structure, relating to Section 3.19 of the specifications.

Q.2. Documentation list, page 86, "Engine shall be 3.7 Liter V-6 gasoline engine", please accept "Engine shall be a minimum 3.5 Liter V-6 gasoline engine".

A.2. The Division will accept the 3.5 Liter V-6 gasoline engine as long as it meets the minimum requirement of 310 horsepower and meet the requirements outlined in Section 3.3.

Q.3. Section 3.15.4, page 9, "Rubber mud flaps shall be provided at all wheels...". Mud flaps are not available on the front wheels of a Ford Transit chassis. Please accept mud flaps on the rear wheels only/

A.3. The Division will accept mud flaps on the rear only.

Q.4. Section 3.19.13, page 13, "An aluminum or galvanized steel underfloor shall be provided for the whole of the passenger compartment, and it shall be fully undercoated." Forest River Bus is a Ford quality vehicle modifier, and applies all aftermarket undercoating per Ford QVM guidelines, is this acceptable?

A.4. The Division will accept the undercoating per Ford QVM guidelines.

Q.5. Section 3.14.4, please accept; our electrical box utilizes standard ATC fuses that plug into a fuse panel not mini fuses that plug into a distribution block. Functionally this achieves the same result but utilizes standard fuses.

A.5. The Division will accept this request.

Q.6. Section 3.4.1, please accept that the Ford Transit Cutaway Chassis utilizes an OEM Street side Fuel Fill that comes from Ford and is not installed by the body manufacturer.

A.6. The Division will accept the street site fuel fill since it is OEM.

Q.7. Section 3.23.2, please accept that the Rear Bumper will be supplied by the Body Manufacturer and not the OEM Chassis Manufacturer.

A.7. The Division will accept the rear bumper supplied by the body manufacturer.

Q.8. Section 3.25.5, please accept that we will not be able to supply windows on both sides of the rear door due to the narrow body nature of the bus.

A.8. It is understood that the windows cannot be supplied on either side of the rear door due to the fact the narrow body will not allow it.

Q.9. Section3.28.2 Would the Division accept Optronics LED lights in place of Truck Lite Brand LED lights? Brochure on Optronics is attached.

A.9. The Division will accept the Optronices LED lights.

Q.10. Section 3.32.10, please accept; at this time the only Driver's seat we are able to provide and satisfy all safety and QVM requirements from Ford is the Ford OEM Driver's Seat.

A.10. The Division will accept the Ford OEM Driver's Seat.

Q.11. Section 3.33.5 Wheel Chair Securement- Does the Division require L-Track to be run the full Width of the Wheel Chair positions?

A.11. The Division would like the L-Track to extend the full width of the wheel chair position.

Q.12. Section 3.38.1 Mirrors Exterior- Specifications currently allow for manual exterior mirrors. Would the Division consider requiring of all vendors to provided Heated Remote Mirrors for all classes on this contract?

A.12. The Division would like to modify Section 3.38.1 to add the Heated Remote Mirrors as a requirement.

Q.13. Section 3.35.4 The Angel Trax Hybrid Vault DVR system is now obsolete and has been replaced with the Angel Trax Vulcan V12 MDVR. This system is already in wide use in Transit Agencies within the state. Attached are the technical specifications of the system. This system can accommodate the required 6 dome cameras and has a 1 TB hard drive to satisfy the dual 500GB hard drive requirement. Will the Division accept the Angel Trax Vulcan V12 in place of the Angel Trax Vault?

A.13. The Division will accept the Angel Trax Vulcan V12 in place of the Angel Trax Vault.

STARTRANS BUS
a division of Forest River, Inc.

The following information is submitted for all StarTrans Bus products proposed on Solicitation PTR 2000000003 as supporting documentation of the structural soundness and impact resistance of the 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.

Body Construction – General Frame Construction

Manufactured from all aluminized 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 aluminized 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.

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 aluminized 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 Aluminized steel "Hat Posts" – 1"x1"x4" run the length of the floor between cross members and are welded into place. This extremely strong form is used to weld our HSLA aluminized steel seat track in place.

3.0.1.3 Aluminized 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.

3.0.1.4 Seat Track – 12 gauge roll formed high strength/low alloy aluminized steel is wire welded in place for seat mounting down each side of the bus, with lengths predicated on the floor plan chosen. This is yet another stiffener in our extensive construction process.

3.0.1.5 Wheel Wells -- Constructed of 14 gauge aluminized 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 Aluminized steel Angle – 1/8" thick 1.5" x 2.5" structural aluminized 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.

3.0.2 Sidewall Construction –

3.0.2.1 Sidewall vertical member – The heart of our sidewall is the vertical structure, a roll formed 18 gauge aluminized steel capital "C" channel with 8 bends that create extreme strength and rigidity. The vertical member is installed in full lengths and in shorter sections above and below window frames. Additional vertical structure is used at both ends of the sidewall enabling the structure to withstand the forces applied by the vehicle when in motion. Using the open C member also enables a thorough primer application.

3.0.2.2 Aluminized steel Tubing – 1"x1" lower and 1"x3" upper 16 gauge aluminized steel tubing is welded in horizontally between vertical members to frame in window openings. This adds front to rear reinforcement as well.

3.0.2.3 Seat Track – 11 gauge high strength low alloy roll formed aluminized steel track is welded down each sidewall below the window frame. While serving as a seat attaching device, it adds excellent structure to the sidewall and also adds excellent side impact resistance.

3.0.2.4 Wheelchair Options – Add another layer of metal. Depending on track locations, another structure of aluminized steel is welded in place between each vertical member for attaching a shoulder belt mount. Also, additional structure is added to accommodate wheelchair door frames.

3.0.2.5 Full length aluminized steel tubing – 1"x1" 16 gauge aluminized steel tubing is stitch welded to the sidewall bottom and top at each vertical member for attaching to the floor and roof sections, respectively.

3.0.3 Rear Wall Construction –

3.0.3.1 Rear wall vertical member – The vertical sidewall capital "C" channel with 8 bends is also used in the rear wall assembly. Full length structure is used at varying places, depending on choice of rear window, or rear door. Shorter cut pieces are used above windows and doors. Additional side windows used with the rear door also change the configuration.

3.0.3.2 Aluminized steel Tubing – 1"x1" 16 gauge aluminized steel tubing is welded horizontally between vertical members to provide a window frame in the standard product, and used as an upper door frame in the optional rear assembly.

3.0.3.3 Full length aluminized steel tubing – 1"x1" 16 gauge aluminized steel tubing is stitch welded to the rear wall top and bottom as in the sidewall assembly.

3.0.4 Roof Construction –

3.0.4.1 Roof Bows – Radius formed one-piece 16 gauge aluminized steel roof bows formed as a modified hat post design with eight bends for exceptional strength, including 4 bends in the web similar to our vertical sidewall aluminized steel provide a roof structure capable of taking severe loads. They are then capped with top flat pieces from flange to flange to provide abundant surface area for securing the exterior roof material.

3.0.4.2 Aluminized steel Tubing – 1"x1" 16 gauge aluminized steel tubing is welded in horizontally to frame all lower window openings and 1" x 3" 16 gauge aluminized steel tubing to all upper window openings as required. A full perimeter is also welded on to mate the roof to the
sidewall and rear wall, with short vertical pieces providing support on the front and rear ends. The 3" wide aluminized steel tube supplies a structural mounting surface for shoulder belt attachment and has been pull tested to federal standards.

3.0.5 Driver Compartment Overhead Halo –

3.0.5.1 Aluminized steel Tubing – 1"x1" 16 gauge aluminized 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 Aluminized 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 Aluminized steel Tubing – 2" x2" 16 gauge aluminized 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 aluminized 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 Aluminized steel Tubing – 1"x1" 16 gauge aluminized steel tubing is used vertically and a ladder type assembly is made welding the 1x 1 tube to .75"x.75" 11 gauge aluminized 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 Aluminized steel Tubing – 1"x1" 16 gauge and .75"x.75" 11 gauge aluminized 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 Aluminized steel – The step riser/tread piece is manufactured from one-piece 11 gauge aluminized steel and uses 90° bends at all risers and treads. The bottom tread also adds an additional 90° bend for additional strength and safety. Upper and lower side pieces are then attached and an 11 gauge flat plate with holes is used to bridge the lower and upper side pieces, then is stitch welded and plug welded to form a strong one piece assembly.

APPLICATION OF EXTERIOR SIDEWALL MATERIAL

FIBERGLASS/FRP/COMPOSITE SIDEWALLS

Composite FRP exterior sidewall panels are installed using Manus Bond 75-UHVFC solvent and isocyanate-free structural adhesive. The adhesive is applied to the vertical and horizontal frame members in the sidewall structure, then the one piece panel is set into place and clamped until the structural adhesive reaches initial "green" strength that gives it the ability to support the weight of the sidewall panel without additional aid.

Manus 75-UHVFC is used due to the excellent adhesion, yield strength and elongation percentage of the product once cured. Designed as a replacement for mechanical fasteners, the adhesive also allows the material to expand and contract without undue stress since the elongation of the product is 250%. Faster curing two-part adhesives can be used but their lack of elongation can lead to cracking of the skin due to stresses applied by typical heat/cold cycles encountered.

Manus 75-UHVFC is also the adhesive used by StarTrans to ensure permanent bonding of the plywood floor substrate to the coated aluminized steel frame members.

A product data sheet for Manus 75-UHVFC Structural Adhesive is attached for further information.

Should any further questions arise, please contact your StarTrans Bus representative.

PAINTED ALUMINUM OR ALUMINIZED STEEL SIDEWALLS

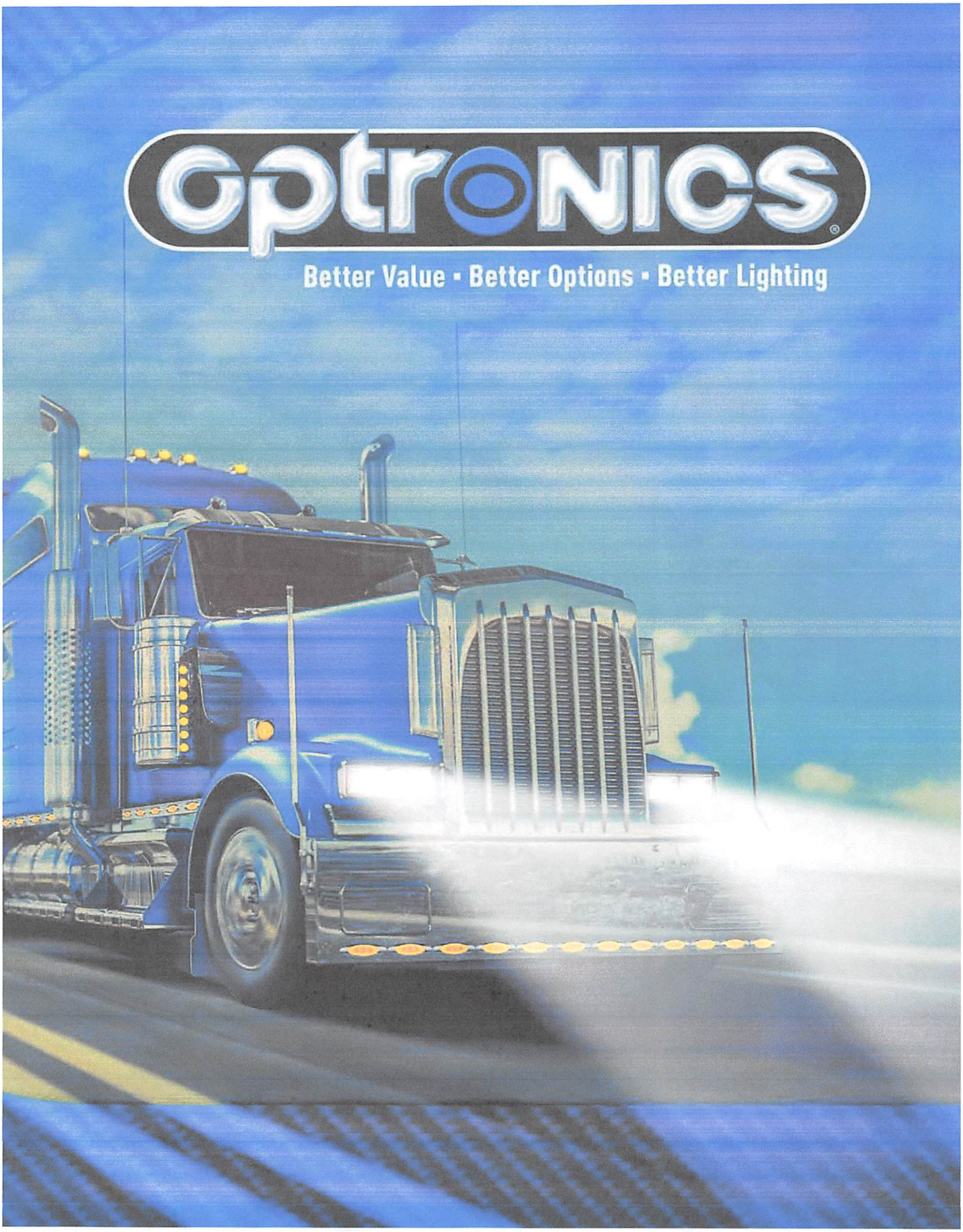
Mill painted aluminum or aluminized steel exterior sidewall panels are installed using a combination of Very High Bond tape with an acrylic adhesive and Manus Bond 75-UHVFC solvent and isocyanate-free

structural adhesive. The side vertical wall bows have two flanges facing the exterior. Tape is applied to one vertical flange for fast adhesion while Manus 75-UHVFC structural adhesive is applied to the other vertical flange. The metal is put in place then pressure is applied by rollers to secure the metal to the tape and ensure good contact with the bead of structural adhesive.

As normal practice dictates, metal is overlapped moving up the sidewall for water shedding. The metal is held in place initially by the VHB tape, then subsequently by window ring flanges and belt line molding that is secured with stainless aluminized steel fasteners. The structural adhesive "greens" (initial grab strength) within two hours, depending on temperature and humidity conditions, then moves to a full cure within a few days.

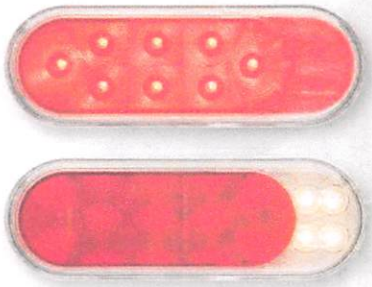
As above, product data sheets are attached for Manus 75-UHVFC and also the VHB tape for your information. A pictorial information sheet of the process is also attached to enable a visual understanding of the process as well.

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

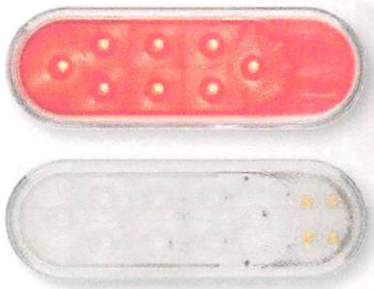

optronics®
Better Value • Better Options • Better Lighting

STL211X SERIES

FUSION™ 6" Oval Sealed LED Stop/Turn/Tail/Back-Up Lights



STL211XRB



STL211XRCB

PATENTED TECHNOLOGY

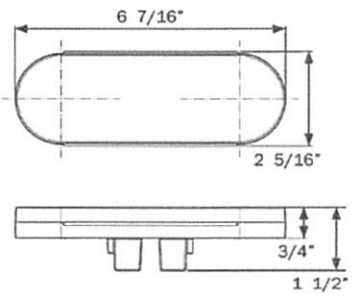
- DOT-compliant back-up light built into stop/turn/tail light
- Sonically sealed, waterproof
- Multi-function: Stop, turn, tail and back-up, all in one light
- Accepts industry standard PL-3 plugs

BULK P/N	POLYPACK P/N	DESCRIPTION	QTY
RED STOP/TURN/TAIL/BACK-UP LIGHT - 16 DIODES			
STL211XRB	STL211XRBP	Red lens, PL-3 connection	10
STL211XRCB	STL211XRCBP	Clear lens, PL-3 connection	10
ACCESSORIES			
A70GB	A70GBP	Grommet, flush mount	50
A45PB	A45PBP	Pigtail, 3-wire	100
A47PB	A47PBP	Right angle pigtail, 3-wire	100
A45CB	A45CBP	Pigtail, 2-wire	100
A49PB	A49PBP	Right angle pigtail, 2-wire	100
A77S1B	A77S1BP	Gray, flat design steel bracket	50
BK70BB	BK70BBP	Black steel bracket	10
RETAIL			
TLL211XRTMK	Retail Ready	**Try Me** Retail Kit: (2) ea. STL211XRB, A70GB, A45PB, A45CB, and (1) A30W5BLB 5-way harness, clam	6



TLL211XRTMK

FMVSS	S2 T2 I6 (2)R
MATERIALS	Polycarbonate lens and housing
VOLT/AMP	12.8VDC - .375A Stop/Turn, .020A Tail, .242A Back-Up
WT/DIMS	.35 lbs. / 6.438" x 2.313" x 1.50"
WARRANTY	Lifetime LED Warranty



HOLE CUT-OUT: 6.85" X 2.5"
(1.25" R)

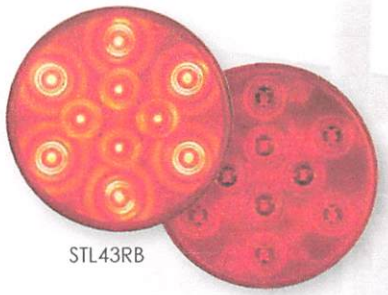


Standard PL3 connections

STL43 SERIES

4" Round Sealed LED Lights

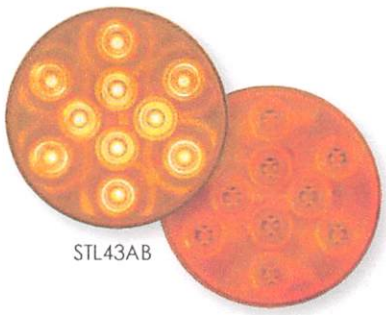
- Sonically sealed, waterproof
- Kits include grommet and plug
- Mount in any 360 degree position
- Available in 12-24V models
- Available with standard PL-3 or optional weathertight connection



STL43RB

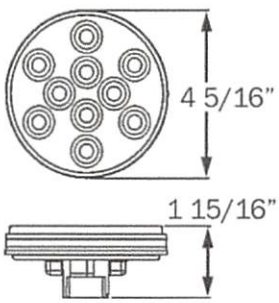


STL53RCB



STL43AB

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, 12-24V	10
STL43RMB	STL43RMBP	Weathertight connection, 12V	10
STL53RCB	STL53RCBP	Clear lens, red diode, PL-3, 12V	10
YELLOW PARKING/TURN SIGNAL - 10 DIODES			
STL43AB	STL43ABP	PL-3 connection, 12V	10
STL43A24B	STL43A24BP	PL-3 connection, 12-24V	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



HOLE CUT-OUT: 4.5"

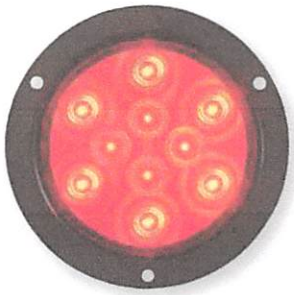
FMVSS	Red S T I P2; Yellow I6 P
MATERIALS	Polycarbonate lens and housing
VOLT/AMP	Red: 12.8VDC - .360A Stop/Turn, .030A Tail
	Yellow: 12.8VDC - .310A Turn, .046A Parking
WT/DIMS	.265 lbs. / 4.313" x 4.313" x 1.938"
WARRANTY	Lifetime LED Warranty

STL42 SERIES

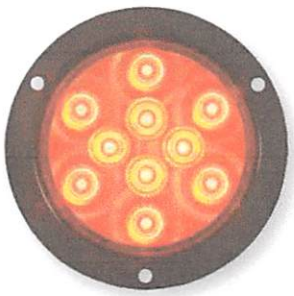
4" Round Sealed LED Lights with Mounting Flange

- Sonically sealed, waterproof
- Flange mount for security, theft reduction
- Available with standard PL-3 or optional weathertight connection

BULK P/N	POLYPACK P/N	DESCRIPTION	QTY
RED STOP/TURN/TAIL LIGHT - 10 DIODES			
STL42RB	STL42RBP	Black flange, PL-3	10
STL42RMB	STL42RMBP	Black flange, weathertight	10
YELLOW PARKING/TURN SIGNAL - 10 DIODES			
STL42AB	STL42ABP	Black flange, PL-3	10
STL42AMB	STL42AMBP	Black flange, weathertight	10
ACCESSORIES			
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
A42FCB	A42FCBP	Chrome flange cover	100
A5TRSSB	A5TRSSBP	Stainless steel trim ring	100
A42GB	A42GBP	Mounting gasket, black	100
RETAIL			
STL42RS	Retail Ready	Light only, clam	6



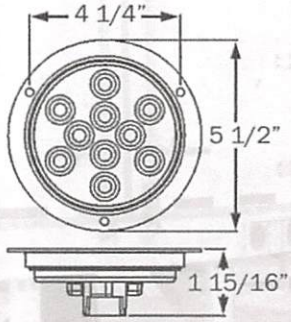
STL42RB



STL42AB



A42GB



HOLE CUT-OUT: 4.5"

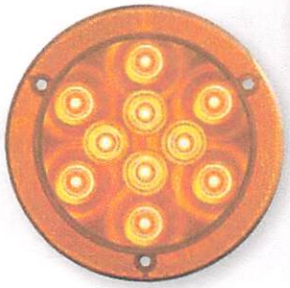
FMVSS	Red S T I P2; Yellow I6 P	
MATERIALS	Polycarbonate lens and housing	
VOLT/AMP	Red:	12.8VDC - .413 Stop/Turn, .026A Tail
	Yellow:	12.8VDC - .310 Turn, .046A Parking
WT/DIMS	.617 lbs. / 5.5" x 5.5" x 1.938"	
WARRANTY	Lifetime LED Warranty	

STL43 REFLEX FLANGE SERIES

4" Round Sealed LED Lights with Reflex Mounting Flange



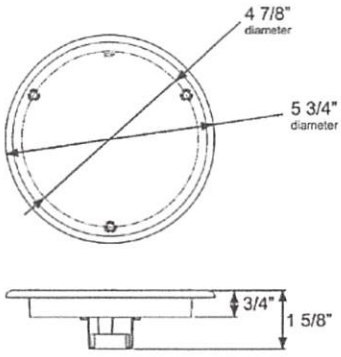
STL43RBX



STL43ABX

- Sonically sealed, waterproof
- Flange mount for security, theft reduction
- Accepts standard PL-3 connector
- Reflex flange meets SAE A for reflector

BULK P/N	POLYPACK P/N	DESCRIPTION	QTY
RED STOP/TURN/TAIL LIGHT - 10 DIODES			
STL43RBX	STL43RBXP	Red reflex flange, gasket, PL-3	10
STL43RBHX	STL43RBHXP	Red reflex flange, hard wire, gasket	10
YELLOW PARKING/TURN SIGNAL - 10 DIODES			
STL43ABX	STL43ABXP	Yellow reflex flange, gasket, PL-3	10
ACCESSORIES			
A45PB	A45PBP	Pigtail, 3-wire PL-3	100
A47PB	A47PBP	Right angle pigtail, 3-wire PL-3	100
RETAIL			
STL43ABXS	Retail Ready	Yellow light only, clam	6
STL43RBXS		Red light only, clam	6



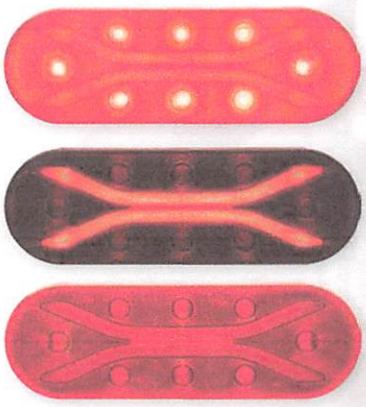
HOLE CUT-OUT: 4.5"

FMVSS	Red S T I; Yellow I6 P; Reflex A
MATERIALS	Polycarbonate lens and housing
VOLT/AMP	Red: 12.8VDC - .413 Stop/Turn, .026A Tail
	Yellow: 12.8VDC - .310 Turn, .046A Parking
WT/DIMS	.397 lbs. / 5.75" x 5.75" x 1.625"
WARRANTY	Lifetime LED Warranty

LIGHTGUIDE™

STL602 SERIES

LightGuide™ LED 6" Stop/Turn/Tail Light

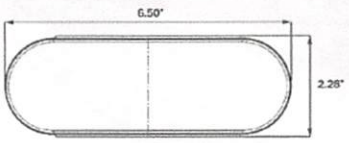


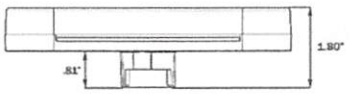
STL602RB

PATENTED TECHNOLOGY

- Central X-shaped feature illuminates for tail light function
- Surrounding diodes light for stop and turn functions
- Sonically sealed, waterproof
- Grommet mount
- Accepts industry standard PL-3 connector

BULK P/N	POLYPACK P/N	DESCRIPTION	QTY
RED STOP/TURN/TAIL LIGHT - 12 DIODES			
STL602RB	STL602RBP	PL-3 connection	10
ACCESSORIES			
A70GB	A70GBP	Grommet	50
A45PB	A45PBP	Pigtail, 3-wire	100
A47PB	A47PBP	Right angle pigtail, 3-wire	100
BK70BB	BK70BBP	Black steel bracket	10
A77S1B	A77S1BP	Gray, flat design steel bracket	50





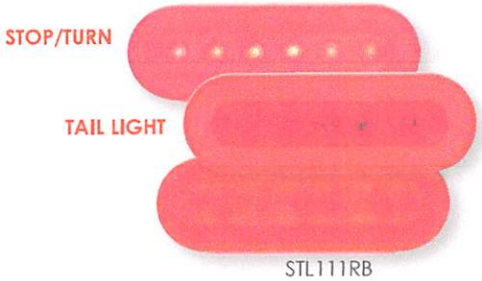
FMVSS	S2 T2 I6
MATERIALS	Polycarbonate lens and housing
VOLT/AMP	12.8VDC - .421A Stop/Turn, .114A Tail
WT/DIMS	.375 lbs. / 6.5" x 2.28" x 1.80"
WARRANTY	Lifetime LED Warranty

STL111 GROMMET MOUNT SERIES

GloLight® 6" Sealed LED Lights

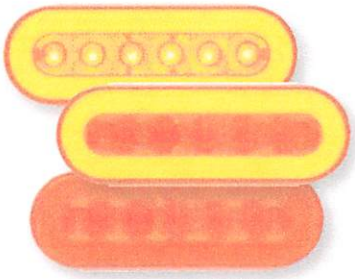
PATENTED TECHNOLOGY

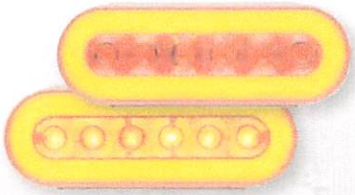
- Sonically sealed, waterproof
- Mount in any 360 degree position
- Available in tinted and clear lens models
- Available with standard PL-3 or optional weathertight connection



STL111RB


STL111RCB


STL111AB

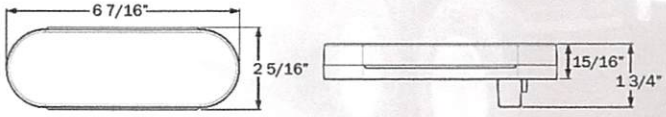

STL111ACB

BULK P/N	POLYPACK P/N	DESCRIPTION	QTY
RED STOP/TURN/TAIL LIGHT - 22 DIODES			
STL111RB	STL111RBP	PL-3 connection	10
STL111R1224B	STL111R1224BP	PL-3 connection, 12/24V	10
STL111RMB	STL111RMBP	Weathertight	10
STL111RHB	STL111RHBP	Hard wired	10
STL111RCB	STL111RCBP	Clear lens, red diodes, PL-3	10
STL111RCMB	STL111RCMBP	Clear lens, red diodes, weathertight	10
YELLOW PARKING/TURN SIGNAL - 22 DIODES			
STL111AB	STL111ABP	PL-3	10
STL111ACB	STL111ACBP	Clear lens, yellow diodes, PL-3	10
ACCESSORIES			
A70GB	A70GBP	Grommet	50
A45PB	A45PBP	Pigtail, 3-wire	100
A47PB	A47PBP	Right angle pigtail, 3-wire	100
A45PMB	A45PMBP	Weathertight pigtail	100
AL45PWTB	AL45PWTBP	Weathertight to PL-3 adaptor	50
BK70BB	BK70BBP	Black steel bracket	10
A77S1B	A77S1BP	Gray, flat design steel bracket	50
RETAIL			
TLL112RK	Retail Ready	**Try Me** kit with (2) ea. STL111RB, A70GB and A47PB, clam	2



TLL112RK

FMVSS	Red S2 T2 I6; Yellow I6 P
MATERIALS	Polycarbonate lens and housing
VOLT/AMP	Red: 12.8VDC - .59A Stop/Turn, .295A Tail
	Yellow: 12.8VDC - .515A Turn, .27A Parking
WT/DIMS	.35 lbs. / 6.5" x 2.25" x 1.75"
WARRANTY	Lifetime LED Warranty



HOLE CUT-OUT: 6.85" X 2.5" (1.25" R)

Vulcan™ Series V12 HD/IP Mobile DVR



12-CHANNEL DVR

DIMENSIONS
- Height: 3.5 inches
- Width: 8.7 inches
- Depth: 11.6 inches
- Weight: 5.7 pounds

TWELVE (12) A/V INPUTS
- 8 channels D1, WD1, 720P, or up to 1080P + 4 channels IP up to 1080P

VIDEO OUTPUTS
- 2 channels

AUDIO OUTPUTS
- 2 channels

CAMERA COMPATIBILITY
- 8 channels D1, WD1, 720P, or up to 1080P (see **NTSC**)
- 4 channels IP up to 1080P

STORAGE MEDIA

RECORDING MEDIUM
- One (1) 2.5" SATA hard drive and one (1) optional solid-state SD card

CAPACITY
- 1TB (standard) up to 2TB (capable) (optional) 64GB SD card up to 512GB

RECORDING OPTIONS
- SD card slot for redundant recording

INTERFACE

NETWORK DATA CONNECTION
- One RJ45 x 1 (10/100 M/1000M)

EXPANSION
- RS232 × 2, RS485 × 2

GPS INTERFACE
- Built-in, compatible with optional GPS antenna

DRIVER ACTION DETECTION

PANIC BUTTON
- The remote status indicator (panic button) can be connected to show DVR power/record status without using a video monitor
- The driver-operated panic button has the following functions:
  - Solid green LED indicates that the unit has power and is recording
  - Event marker (panic button)

DRIVER ACTION DETECTION WIRES
- 8 signal wires individually programmable to indicate alarm or event

BUILT-IN G-FORCE SENSOR

COMPRESSION FORMAT
- Video: H.264
- Audio: ADPCM, G.711A G.711U

RECORD RESOLUTION

NTSC
- 1080P, 720P, WD1(928X480), WHD1(928X240), WCIF(464X240), D1(704x480), HD1(704x240), CIF(352x240)

PAL
- 1080P, 720P, WD1(928X576), WHD1(928X288), WCIF(464X288), D1(704X576), HD1(704x288), CIF(352x288)

RECORDING OPTIONS
- **Continuous record:** System will record all channels continuously while vehicle is running (factory setting).
- **Alarm record:** System will record when an alarm is triggered.
- **Motion record:** System will record when the cameras detect motion while vehicle is running.
- **Schedule record:** System will boot and record according to user-selectable schedule.

ELECTRICAL & OPERATING REQUIREMENTS

AUTO ON/OFF DETECTION
- ACC detection

DELAY OFF SETTING
- User selectable up to 24 hours

OPERATING VOLTAGE
- 8~36VDC

OPERATING TEMPERATURE
- -14°F (-25°C) ~ +158°F (+70°C); -40°F (-40°C) ~ +158°F (+70°C) with heater

POWER CONSUMPTION
- 0W-105.3W

POWER SUPPLY

INPUT RANGE
- DC 8-36V

OUTPUT RANGE
- DC5V/DC12V

OUTPUT CURRENT
- 5V@500mA, 12V@500mA

BUILT-IN POWER PROTECTION

LOW VOLTAGE PROTECTION
- User selectable and programmed at installation

HOUSING/CASING
- Removable, shock-mounted
- Vandal-resistant locking front cover
- Shock-resistant: MIL-STD-810F
- Aluminum
- Optional fan with filter, removable for cleaning

BUILT-IN WI-FI MODULE

OPTIONAL COMPONENTS

VIRTUAL SYNCHRONIZED MAPPING
- External Virtual Synchronized Mapping™ module with North American maps
- Includes GPSV1 antenna
- Embeds GPS tracking information synchronized with recorded video footage

GPS ANTENNA

FIREPROOF BOX BACKUP

CELLULAR MODEM

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: PTR2000000003

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[X]	Addendum No. 1	[ ]	Addendum No. 6
[ ]	Addendum No. 2	[ ]	Addendum No. 7
[ ]	Addendum No. 3	[ ]	Addendum No. 8
[ ]	Addendum No. 4	[ ]	Addendum No. 9
[ ]	Addendum No. 5	[ ]	Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Sonny Merryman Inc.
Company

Authorized Signature

07/22/2020
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735
Doc Description: Addendum 2 - 156" WB DRW Narrow Body Cutaway
Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-07-14	2020-07-24 13:30:00	CRFQ 0805 PTR2000000003	3

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc.
5120 Wards Road
Evington, VA. 24550

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X C. Merryman **FEIN #** 540806-176 **DATE** 07/22/2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum 2 issued for the following reasons:

1. To extend the bid opening to Friday, July 24, 2020, at 1:30 p.m.

No other changes

INVOICE TO	SHIP TO
ACCOUNTS PAYABLE PUBLIC TRANSIT DIVISION OF BLDG 5 RM 650 1900 KANAWHA BLVD E CHARLESTON WV25305-0432 US	GENERAL MANAGER PUBLIC TRANSIT DIVISION OF KANAWHA VALLEY REGIONAL TRANSPORTATION AUTHORITY 1550 FOURTH AVE CHARLESTON WV 25324 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	156" WB DRW Narrow Body Cutaway	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
25101502	Startrans		Candidate II

Extended Description :
156" WB DRW Narrow Body Cutaway

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Question deadline 4:00 p.m.	2020-07-07

SOLICITATION NUMBER: PTR2000000003
Addendum Number: 2

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[✓] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[ ] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[ ] Other

Description of Modification to Solicitation:

Addendum 2 issued for the following reasons:

1. To extend the bid opening to Friday, July 24, 2020, at 1:30 p.m.

No other changes

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: PTR2000000003

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[ ]	Addendum No. 1	[ ]	Addendum No. 6
[X]	Addendum No. 2	[ ]	Addendum No. 7
[ ]	Addendum No. 3	[ ]	Addendum No. 8
[ ]	Addendum No. 4	[ ]	Addendum No. 9
[ ]	Addendum No. 5	[ ]	Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Sonny Merryman Inc.
Company

Authorized Signature

07/22/2020
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735
Doc Description: Addendum 2 - 156" WB DRW Narrow Body Cutaway
Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-07-14	2020-07-24 13:30:00	CRFQ 0805 PTR2000000003	3

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc.
5120 Wards Road
Evington, VA. 24550

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X **FEIN #** 540806-176 **DATE** 07/22/2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum 2 issued for the following reasons:

1. To extend the bid opening to Friday, July 24, 2020, at 1:30 p.m.

No other changes

INVOICE TO	SHIP TO
ACCOUNTS PAYABLE PUBLIC TRANSIT DIVISION OF BLDG 5 RM 650 1900 KANAWHA BLVD E CHARLESTON WV 25305-0432 US	GENERAL MANAGER PUBLIC TRANSIT DIVISION OF KANAWHA VALLEY REGIONAL TRANSPORTATION AUTHORITY 1550 FOURTH AVE CHARLESTON WV 25324 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	156" WB DRW Narrow Body Cutaway	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
25101502	Startrans		Candidate II

Extended Description :
156" WB DRW Narrow Body Cutaway

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Question deadline 4:00 p.m.	2020-07-07

SOLICITATION NUMBER: PTR2000000003
Addendum Number: 2

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[✓] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[ ] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[ ] Other

Description of Modification to Solicitation:

Addendum 2 issued for the following reasons:

1. To extend the bid opening to Friday, July 24, 2020, at 1:30 p.m.

No other changes

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

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1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

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ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: PTR2000000003

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[ ]	Addendum No. 1	[ ]	Addendum No. 6
[X]	Addendum No. 2	[ ]	Addendum No. 7
[ ]	Addendum No. 3	[ ]	Addendum No. 8
[ ]	Addendum No. 4	[ ]	Addendum No. 9
[ ]	Addendum No. 5	[ ]	Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Sonny Merryman Inc.
Company

Authorized Signature

07/22/2020
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

BID FORM #8

CERTIFICATION OF COMPLIANCE WITH FTA'S BUS TESTING REQUIREMENTS

The undersigned (Vendor/Manufacturer) certifies that the vehicle offered in this procurement complies with 49 U.S.C. 5318, as amended by MAP-21, and FTA regulations, "Bus Testing," 49 CFR Part 665.

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

7/23/2020

Date

Mark Barojak

Authorized Signature

Government Bid Sales

Title

StarTrans Bus Division of Forest River Inc.

Company Name

BID FORM #3

BUY AMERICA CERTIFICATION
ROLLING STOCK
MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

Certificate of Compliance

The bidder or offeror hereby certifies that it will comply with the requirements of section 165(b) (3), of the Surface Transportation Assistance Act of 1982, as amended, and the applicable regulations of 49 CFR 661.11:

7/23/2020
Date

Mark Barczak
Authorized Signature

StarTrans Bus Division of Forest River Inc.
Company Name

Mark Barczak
Name

Government Bid Sales
Title

Certificate for Non-Compliance
The bidder or offeror hereby certifies that it cannot comply with the requirements of section 165(b) (3) of the Surface Transportation Assistance Act of 1982, as amended, but may qualify for an exception to the requirement consistent with section 165(b) (2) or (b) (4) of the Surface Transportation Assistance Act, as amended, and the applicable regulations in 49 CFR 661.7.

Date

Authorized Signature

Company Name

Name

Title

StarTrans Bus — Pre-Award BUY AMERICA CERTIFICATION

This certifies compliance with FTA Buy America Regulations set forth in 49 C.F.R. § 661.11 for each component that more than 70% of the subcomponents, by cost, are of U.S. origin/manufacture and is manufactured in the U.S. Manufacturer attests that the U.S. content of subcomponents, by cost is as indicated below.

COMPONENT NAME	MANUFACTURER NAME		% U.S. CONTENT	%FOREIGN CONTENT
CLASS A, CII 22' 156"WB ON FORD TRANSIT 350	StarTrans Bus		73.22%	26.78%
SUBCOMPONENT NAME	**MANUFACTURER NAME**	**MFG LOCATION**	**% OF TOTAL**	
Chassis	Ford Motor Co.	U.S.	53.03%	
Exterior Mirrors	ROSCO	U.S.	0.25%	
A/C System	TransAir	U.S.	7.01%	
Floor Heater	ProAir	U.S.	0.43%	
Rear door	Challenger Door	U.S.	0.44%	
Camera DVR	Angel trax	U.S.	2.79%	
Electrical system	LGS	U.S.	0.91%	
Seating	Freedman	U.S.	8.05%	
Roof hatch	Transpec	U.S.	0.32%	
		U.S.	0.00%	
		U.S.	0.00%	
		U.S.	0.00%	
		U.S.	0.00%	

MAJOR ACTIVITIES UNDERTAKEN AT THE FINAL ASSEMBLY LOCATION

All purchasing of raw and assembled materials including the chassis, fabrication and welding of the frame, prime paint, installation of all wood, fabric, FRP, aluminum and/or other body panel and/or trim materials, installation of doors and windows, HVAC components and systems, electrical systems, installation of any required options such as wheel chair lifts, tie down kits, seats, radios and optional electronic items, if any, complete undercoat, exterior paint and/or graphics if ordered, full road test, rain booth test and all other final quality functions as needed to ensure compliance with the contract.

FINAL ASSEMBLY LOCATION: 2367 CENTURY DRIVE, GOSHEN, IN 46528

BODY V.I.N. OF UNITS DELIVERED UNDER POST DELIVERY BUY AMERICA:

TBD

FINAL ASSEMBLY % OF TOTAL COST NOT INCLUDED IN THE MATERIAL COSTS ABOVE: **4.62%**

FINAL ASSEMBLY $$ NOT INCLUDED IN THE COSTS ABOVE **$2,456.27**

Mark Barczak
AUTHORIZED SIGNATURE

Government Bids
TITLE

7/23/2020
DATE

Mark Barczak
PRINT NAME

StarTrans Bus — Pre-Award BUY AMERICA CERTIFICATION

This certifies compliance with FTA Buy America Regulations set forth in 49 C.F.R. § 661.11 for each component that more than 70% of the subcomponents, by cost, are of U.S. origin/manufacture and is manufactured in the U.S. Manufacturer attests that the U.S. content of subcomponents, by cost is as indicated below.

COMPONENT NAME	MANUFACTURER NAME		% U.S. CONTENT	%FOREIGN CONTENT
CLASS B,E,H,K,N CII 22' 156"WB ON FORD TRANSIT 350	StarTrans Bus		71.85%	28.15%
SUBCOMPONENT NAME	**MANUFACTURER NAME**	**MFG LOCATION**	**% OF TOTAL**	
Chassis	Ford Motor Co.	U.S.	44.11%	
Exterior Mirrors	ROSCO	U.S.	0.21%	
A/C System	TransAir	U.S.	5.83%	
Floor Heater	ProAir	U.S.	0.36%	
Rear door	Challenger Door	U.S.	1.59%	
Camera DVR	Angel trax	U.S.	2.32%	
Electrical system	LGS	U.S.	0.75%	
Seating	Freedman	U.S.	6.55%	
Roof hatch	Transpec	U.S.	0.27%	
Wheelchair Lift		U.S.	5.18%	
Wheelchair Restraints		U.S.	0.51%	
Pass. Entry door	Braun	U.S.	0.33%	
Destination signs	Q'Straint	U.S.	3.84%	
	A and M door			
Destination signs	Trans-Sign			

MAJOR ACTIVITIES UNDERTAKEN AT THE FINAL ASSEMBLY LOCATION

All purchasing of raw and assembled materials including the chassis, fabrication and welding of the frame, prime paint, installation of all wood, fabric, FRP, aluminum and/or other body panel and/or trim materials, installation of doors and windows, HVAC components and systems, electrical systems, installation of any required options such as wheel chair lifts, tie down kits, seats, radios and optional electronic items, if any, complete undercoat, exterior paint and/or graphics if ordered, full road test, rain booth test and all other final quality functions as needed to ensure compliance with the contract.

FINAL ASSEMBLY LOCATION: 2367 CENTURY DRIVE, GOSHEN, IN 46528

BODY V.I.N. OF UNITS DELIVERED UNDER POST DELIVERY BUY AMERICA:

TBD

FINAL ASSEMBLY % OF TOTAL COST NOT INCLUDED IN THE MATERIAL COSTS ABOVE: **3.87%**

FINAL ASSEMBLY $$ NOT INCLUDED IN THE COSTS ABOVE **$2,456.27**

Mark Barczak
AUTHORIZED SIGNATURE

Government Bids
TITLE

7/23/2020
DATE

Mark Barczak
PRINT NAME

StarTrans Bus — Pre-Award BUY AMERICA CERTIFICATION

This certifies compliance with FTA Buy America Regulations set forth in 49 C.F.R. § 661.11 for each component that more than 70% of the subcomponents, by cost, are of U.S. origin/manufacture and is manufactured in the U.S. Manufacturer attests that the U.S. content of subcomponents, by cost is as indicated below.

COMPONENT NAME	MANUFACTURER NAME		% U.S. CONTENT	%FOREIGN CONTENT
CLASS C,F,I,L,O CII 22' 156"WB ON FORD TRANSIT 350	StarTrans Bus		72.12%	27.88%
SUBCOMPONENT NAME	**MANUFACTURER NAME**	**MFG LOCATION**	**% OF TOTAL**	
Chassis	Ford Motor Co.	U.S.	44.56%	
Exterior Mirrors	ROSCO	U.S.	0.21%	
A/C System	TransAir	U.S.	5.89%	
Floor Heater	ProAir	U.S.	0.36%	
Rear door	Challenger Door	U.S.	1.61%	
Camera DVR	Angel trax	U.S.	2.34%	
Electrical system	LGS	U.S.	0.76%	
Seating	Freedman	U.S.	5.65%	
Roof hatch	Transpec	U.S.	0.27%	
Wheelchair Lift	Braun	U.S.	5.23%	
Wheelchair Restraints	Q'Straint	U.S.	1.04%	
Pass. Entry door	A and M door	U.S.	0.33%	
Destination signs	Trans-Sign	U.S.	3.87%	

MAJOR ACTIVITIES UNDERTAKEN AT THE FINAL ASSEMBLY LOCATION

All purchasing of raw and assembled materials including the chassis, fabrication and welding of the frame, prime paint, installation of all wood, fabric, FRP, aluminum and/or other body panel and/or trim materials, installation of doors and windows, HVAC components and systems, electrical systems, installation of any required options such as wheel chair lifts, tie down kits, seats, radios and optional electronic items, if any, complete undercoat, exterior paint and/or graphics if ordered, full road test, rain booth test and all other final quality functions as needed to ensure compliance with the contract.

FINAL ASSEMBLY LOCATION: 2367 CENTURY DRIVE, GOSHEN, IN 46528

BODY V.I.N. OF UNITS DELIVERED UNDER POST DELIVERY BUY AMERICA:

TBD

FINAL ASSEMBLY % OF TOTAL COST NOT INCLUDED IN THE MATERIAL COSTS ABOVE: 3.91%

FINAL ASSEMBLY $$ NOT INCLUDED IN THE COSTS ABOVE $2,456.27

Mark Barczak
AUTHORIZED SIGNATURE

Government Bids
TITLE

7/23/2020
DATE

Mark Barczak
PRINT NAME

StarTrans Bus — Pre-Award BUY AMERICA CERTIFICATION

This certifies compliance with FTA Buy America Regulations set forth in 49 C.F.R. § 661.11 for each component that more than 70% of the subcomponents, by cost, are of U.S. origin/manufacture and is manufactured in the U.S. Manufacturer attests that the U.S. content of subcomponents, by cost is as indicated below.

COMPONENT NAME	MANUFACTURER NAME		% U.S. CONTENT	%FOREIGN CONTENT
CLASS D,G,J,M,P CII 22' 156"WB ON FORD TRANSIT 350	StarTrans Bus		72.38%	27.62%
SUBCOMPONENT NAME	**MANUFACTURER NAME**	**MFG LOCATION**	**% OF TOTAL**	
Chassis	Ford Motor Co.	U.S.	44.01%	
Exterior Mirrors	ROSCO	U.S.	0.21%	
A/C System	TransAir	U.S.	5.82%	
Floor Heater	ProAir	U.S.	0.36%	
Rear door	Challenger Door	U.S.	1.59%	
Camera DVR	Angel trax	U.S.	2.32%	
Electrical system	LGS	U.S.	0.75%	
Seating	Freedman	U.S.	6.20%	
Roof hatch	Transpec	U.S.	0.27%	
Wheelchair Lift	Braun	U.S.	5.17%	
Wheelchair Restraints	Q'Straint	U.S.	1.54%	
Pass. Entry door	A and M door	U.S.	0.33%	
Destination signs	Trans-Sign	U.S.	3.83%	

MAJOR ACTIVITIES UNDERTAKEN AT THE FINAL ASSEMBLY LOCATION

All purchasing of raw and assembled materials including the chassis, fabrication and welding of the frame, prime paint, installation of all wood, fabric, FRP, aluminum and/or other body panel and/or trim materials, installation of doors and windows, HVAC components and systems, electrical systems, installation of any required options such as wheel chair lifts, tie down kits, seats, radios and optional electronic items, if any, complete undercoat, exterior paint and/or graphics if ordered, full road test, rain booth test and all other final quality functions as needed to ensure compliance with the contract.

FINAL ASSEMBLY LOCATION: 2367 CENTURY DRIVE, GOSHEN, IN 46528

BODY V.I.N. OF UNITS DELIVERED UNDER POST DELIVERY BUY AMERICA:

TBD

FINAL ASSEMBLY % OF TOTAL COST NOT INCLUDED IN THE MATERIAL COSTS ABOVE: **3.87%**

FINAL ASSEMBLY $$ NOT INCLUDED IN THE COSTS ABOVE **$2,456.27**

Mark Barczak
AUTHORIZED SIGNATURE

Government Bids
TITLE

7/23/2020
DATE

Mark Barczak
PRINT NAME

BID FORM #2

DISADVANTAGED VEHICLELINESS ENTERPRISE VENDORS/ MANUFACTURERS CERTIFICATION

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

(Check appropriate statement)

☑ The Vendor, if a transit vehicle manufacturer, hereby certifies that it has complied with the requirements of 49 CFR Section 26.49 by submitting an annual DBE goal to the Federal Transit Administration (FTA). The goal has either been approved or not disapproved by FTA.

☐ The Vendor, if a non-manufacturing supplier, hereby certifies that the manufacturer of the transit vehicle to be supplied has complied with the above-referenced requirement of 49 CFR Section 26.49.

7/23/2020
Date

M. Banojak
Authorized Signature

Government Bid Sales
Title

StarTrans Bus Division of Forest River Inc.
Company Name

BID FORM #4

FEDERAL MOTOR VEHICLE
SAFETY STANDARDS CERTIFICATION

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

The vendor hereby certifies that it shall submit, as required by Title 49 of the CFR, Part 663 - Subpart D, it's self-certification information stating that the vehicle(s) will comply with the relevant Federal Motor Vehicle Safety Standards issued by the National Highway Traffic Safety Administration in Title 49 of the Code of Federal Regulations, Part 571.

7/23/2020
Date

Mark Barojas
Authorized Signature

Government Bid Sales
Title

StarTrans Bus Division of Forest River Inc.
Company Name

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735

Doc Description: 156" WB DRW Narrow Body Cutaway

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-06-30	2020-07-17 13:30:00	CRFQ 0805 PTR2000000003	1

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc.
5120 Wards Road
Evington, VA. 24550
1-800-533-1006

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X  **FEIN #** 540806-176 **DATE** 07/22/2020

All offers subject to all terms and conditions contained in this solicitation

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

C. Chad Seals - Commercial sales
(Name, Title)

C. Chad Seals - Commercial sales
(Printed Name and Title)

5120 Wards Road Evington, VA. 24550
(Address)

(P)(800) 533-1006 (F)(434) 821-4456
(Phone Number) / (Fax Number)

chad@sonnymerryman.com
(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Sonny Merryman Inc.
(Company)

C. Chad Seals - Commercial Sales
(Authorized Signature) (Representative Name, Title)

C. Chad Seals - Commercial Sales
(Printed Name and Title of Authorized Representative)

07/22/2020
(Date)

(P)(800) 533-1006 (F)(434) 821-4456
(Phone Number) (Fax Number)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.:

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

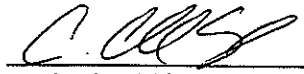
Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

☒ Addendum No. 1	☐ Addendum No. 6
☒ Addendum No. 2	☐ Addendum No. 7
☐ Addendum No. 3	☐ Addendum No. 8
☐ Addendum No. 4	☐ Addendum No. 9
☐ Addendum No. 5	☐ Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Sonny Merryman Inc.
Company


Authorized Signature

07/22/2020
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

BID FORM #1

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

Location(s) of the Technical Service Representative(s) and parts distribution center(s) closest or in the State of West Virginia.

Location(s) of the technical service representative(s).

Name: Brady Childress

Address: 5120 Wards Road

Evington, VA. 24550

Telephone: 1-800-533-1006 Ext. 8620

Name: _____

Address: _____

_____

Telephone: _____

Location(s) of parts distribution center(s).

Name: Derek Shelton

Address: 5120 Wards Road

Evington, VA. 24550

Telephone: 1-800-533-1006 Ext.8633

Name: _____

Address: _____

_____

Telephone: _____

BID FORM #2

DISADVANTAGED VEHICLEINESS ENTERPRISE VENDORS/ MANUFACTURERS CERTIFICATION

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

(Check appropriate statement)

☐ The Vendor, if a transit vehicle manufacturer, hereby certifies that it has complied with the requirements of 49 CFR Section 26.49 by submitting an annual DBE goal to the Federal Transit Administration (FTA). The goal has either been approved or not disapproved by FTA.

☒ The Vendor, if a non-manufacturing supplier, hereby certifies that the manufacturer of the transit vehicle to be supplied has complied with the above-referenced requirement of 49 CFR Section 26.49.

07/22/2020
Date


Authorized Signature

Commercial Sales
Title

Sonny Merryman Inc.
Company Name

BID FORM #3

BUY AMERICA CERTIFICATION
ROLLING STOCK
MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

Certificate of Compliance

The bidder or offeror hereby certifies that it will comply with the requirements of section 165(b) (3), of the Surface Transportation Assistance Act of 1982, as amended, and the applicable regulations of 49 CFR 661.11:

07/22/2020
Date


Authorized Signature

Sonny Merryman Inc
Company Name

C. Chad Seals
Name

Commercial Sales
Title

Certificate for Non-Compliance
The bidder or offeror hereby certifies that it cannot comply with the requirements of section 165(b) (3) of the Surface Transportation Assistance Act of 1982, as amended, but may qualify for an exception to the requirement consistent with section 165(b) (2) or (b) (4) of the Surface Transportation Assistance Act, as amended, and the applicable regulations in 49 CFR 661.7.

Date

Authorized Signature

Company Name

Name

Title

BID FORM #4

FEDERAL MOTOR VEHICLE SAFETY STANDARDS CERTIFICATION

MANDATORY BID FORM -- MUST BE SUBMITTED WITH BID

The vendor hereby certifies that it shall submit, as required by Title 49 of the CFR, Part 663 - Subpart D, it's self-certification information stating that the vehicle(s) will comply with the relevant Federal Motor Vehicle Safety Standards issued by the National Highway Traffic Safety Administration in Title 49 of the Code of Federal Regulations, Part 571.

07/22/2020
Date


Authorized Signature

Commercial Sales
Title

Sonny Merryman Inc
Company Name

BID FORM #5

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

CERTIFICATION OF PRIMARY PARTICIPANT REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

The Primary Participant (applicant for an FTA grant or cooperative agreement, or potential contractor for a major third-party contract),

Sonny Merryman Inc. (COMPANY NAME) certifies to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and

4. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

If the primary participant (applicant for an FTA grant, or cooperative agreement, or potential third-party contractor) is unable to certify to any of the statements in this certification, the participant shall attach an explanation to this certification.)

THE PRIMARY PARTICIPANT (APPLICANT FOR AN FTA GRANT OR COOPERATIVE AGREEMENT, OR POTENTIAL CONTRACTOR FOR A MAJOR THIRD-PARTY CONTRACT),

Sonny Merryman Inc., CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND UNDERSTANDS THAT THE PROVISIONS OF 31 U.S.C. SECTIONS 3801 ET SEQ. ARE APPLICABLE THERETO.

C. [illegible] – Commercial Sales

Signature and Title of Authorized Official

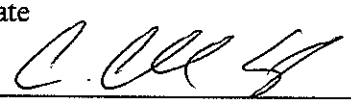
BID FORM #6

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

VENDOR'S CERTIFICATION OF UNDERSTANDING AND ACCEPTANCE

The Vendor hereby certifies that all Technical Specifications and Contract Terms and Conditions have been carefully reviewed, are fully understood and shall be adhered to in performance and completion of any contract resulting from this bid.

07/22/2020
Date


Authorized Signature

Commercial Sales
Title

Sonny Merryman Inc.
Company Name

SPECIFICATION COMPLIANCE

NOTE: Please check if what is offered is in exact compliance with specifications. **Any discrepancies must be listed as an attachment to the bid proposal. Exact dimensions and/or descriptions must be provided as a part of the Vendor's bid proposal when submitted.**

☒ Bid proposal submitted meets and/or exceeds all specification requirements.

☐ Bid proposal submitted contains deviations from specification requirements. Detailed descriptions of these deviations have been provided with this bid proposal.

BID FORM #7

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

CERTIFICATION OF RESTRICTIONS ON LOBBYING

The undersigned (Vendor, Contractor) certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid by or on behalf of the undersigned, to any person for influence or attempt to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress regarding the award of a Federal grant, loan (including a line of credit), cooperative agreement, loan guarantee, or loan insurance, or the extension, continuation, renewal, amendment, or modification of any Federal grant, loan (including a line of credit), cooperative agreement, loan guarantee, or loan insurance.

2. If any funds other than Federal appropriated funds have been or will be paid to any person to influence or attempt to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or any employee of a Member of Congress in connection with any application for a Federal grant, loan (including a line of credit), cooperative agreement, loan guarantee, or loan insurance, the undersigned assures that it will complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," Rev. 7-97; and

3. The undersigned understands that the language of this certification shall be included in the award documents for all sub awards at all tiers (including subcontracts, sub grants, sub agreements. and contracts under grants, loans (including a line of credit), cooperative agreements, loan guarantees, and loan insurance.

Undersigned understands that this certification is a material representation of fact upon which reliance is placed by the Federal government and that submission of this certification is a prerequisite for providing a Federal grant, loan (including a line of credit), cooperative agreement, loan guarantee, or loan insurance for a transaction covered by 31 U.S.C. 1352. The undersigned also understands that any person who fails to file a required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The (Vendor, Contractor) Sonny Merryman Inc., certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the (Vendor, Contractor understands and agrees that the provisions of 31 U.S.C. §§ 3801, et seq., apply to this certification and disclosure.

07/22/2020
Date

Authorized Signature

Commercial Sales
Title

REQUEST FOR QUOTATION
156" Wheelbase Dual Rear Wheel (DRW) Narrow Body Cutaway

BID FORM #8

CERTIFICATION OF COMPLIANCE WITH FTA'S BUS TESTING REQUIREMENTS

The undersigned (Vendor/Manufacturer) certifies that the vehicle offered in this procurement complies with 49 U.S.C. 5318, as amended by MAP-21, and FTA regulations, "Bus Testing," 49 CFR Part 665.

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

07/22/2020

Date

Authorized Signature

Commercial Sales

Title

Sonny Merryman Inc

Company Name

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Sonny Merryman Inc.

Authorized Signature: _____ Date: 07/22/2020

State of Virginia

County of Campbell, to-wit:

Taken, subscribed, and sworn to before me this 22nd day of July, 2020.

My Commission expires June 30, 2024.

AFFIX SEAL HERE

KATIE HOGAN MILLNER
NOTARY PUBLIC
REG # 7698923
COMMISSION EXPIRES 6/30/2024
COMMONWEALTH OF VIRGINIA

NOTARY PUBLIC _____

West Virginia Ethics Commission

Disclosure of Interested Parties to Contracts

(Required by *W. Va. Code* § 6D-1-2)

Name of Contracting Business Entity: Sonny Merryman Inc. **Address:** 5120 Wards Road Evington, VA 24550

Name of Authorized Agent: C. Chad Seals **Address:** Same as above

Contract Number: PTR2000000003 **Contract Description:** 156" WB DRW Narrow Body Cutaway

Governmental agency awarding contract: _____

☒ **Check here if this is a Supplemental Disclosure**

List the Names of Interested Parties to the contract which are known or reasonably anticipated by the contracting business entity for each category below *(attach additional pages if necessary)*:

1. **Subcontractors or other entities performing work or service under the Contract**
   ☐ Check here if none, otherwise list entity/individual names below.

2. **Any person or entity who owns 25% or more of contracting entity (not applicable to publicly traded entities)**
   ☐ Check here if none, otherwise list entity/individual names below.

3. **Any person or entity that facilitated, or negotiated the terms of, the applicable contract (excluding legal services related to the negotiation or drafting of the applicable contract)**
   ☐ Check here if none, otherwise list entity/individual names below.

Signature: C. Chad Seals Date Signed: 07/23/2020

KATIE HOGAN MILLNER NOTARY PUBLIC REG # 7698923 COMMISSION EXPIRES 6/30/2024 COMMONWEALTH OF VIRGINIA

Notary Verification

State of Virginia, County of Campbell

I, C. Chad Seals, the authorized agent of the contracting business entity listed above, being duly sworn, acknowledge that the Disclosure herein is being made under oath and under the penalty of perjury.

Taken, sworn to and subscribed before me this 22nd day of July, 2020

Katie Millner
Notary Public's Signature

To be completed by State Agency:

Date Received by State Agency: _____

Date submitted to Ethics Commission: _____

Governmental agency submitting Disclosure: _____

Revised June 8, 2018

FIRM'S NAME AND ADDRESS		PAYMENT REMITTANCE ADDRESS	
Name: Sonny Merryman Inc.		**Name:** Sonny Merryman Inc.	
Address: 5120 Wards Road		**Address:** 5120 Wards Road	
P.O. Box or Suite No.		**P.O. Box or Suite No.**	
City Evington		**City** Evington	
State Virginia	**Zip** 24550	**State** Virginia	**Zip** 24550

Contact Person: C. Chad Seals

Telephone No.	Fax No.	E-Mail Address:
1-800-533-1006	1-434-821-4456	chad@sonnymerryman.com

FEDERAL EMPLOYER I.D. NUMBER:	SOCIAL SECURITY NUMBER: (If Federal I.D. is not applicable)
54-0806176	
Payment Terms: Net/30	**Age of Firm:** 52 Years

Disadvantaged Business Enterprise:
( ) Yes (X) No
If yes, certified by which agency?

( ) Female ( ) Male
( ) Black ( ) Hispanic ( ) Asian American
( ) Indian/Alaskan Native ( ) Other
( ) Not Applicable

Annual Gross Receipts: ( ) less than $500,000 ( ) $500,000 to $1 million
( ) $1 million to $5 million (X) greater than $5 million

Contractor's License Type: West Virginia Business Registration

Contractor's License Number: 234-1838

License Expiration Date:

Signature of Contractor's Authorized Official	Name and Title of Contractor's Authorized Official
C. Chad Seals	C. Chad Seals - Commercial Sales

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735

Doc Description: Addendum 2 - 156" WB DRW Narrow Body Cutaway

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-07-14	2020-07-24 13:30:00	CRFQ 0805 PTR2000000003	3

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc
5120 Wards Road
Evington, VA. 24550
1-800-533-1006

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X FEIN # 540806-176 DATE 07/23/2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum 2 issued for the following reasons:

1. To extend the bid opening to Friday, July 24, 2020, at 1:30 p.m.

No other changes

INVOICE TO	SHIP TO
ACCOUNTS PAYABLE PUBLIC TRANSIT DIVISION OF BLDG 5 RM 650 1900 KANAWHA BLVD E CHARLESTON WV25305-0432 US	GENERAL MANAGER PUBLIC TRANSIT DIVISION OF KANAWHA VALLEY REGIONAL TRANSPORTATION AUTHORITY 1550 FOURTH AVE CHARLESTON WV 25324 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	156" WB DRW Narrow Body Cutaway	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
25101502	Startrans		Candidate II

Extended Description :
156" WB DRW Narrow Body Cutaway

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Question deadline 4:00 p.m.	2020-07-07

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735

Doc Description: Addendum 1 - 156" WB DRW Narrow Body Cutaway

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-07-08	2020-07-17 13:30:00	CRFQ 0805 PTR2000000003	2

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc.
5120 Wards Road
Evington, VA. 24550
1-800-533-1006

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X **FEIN #** 540806-176 **DATE** 07/23/2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum 1 issued for the following reasons:

1. To publish a copy of vendor questions with responses.

No other changes.

INVOICE TO	SHIP TO
ACCOUNTS PAYABLE PUBLIC TRANSIT DIVISION OF BLDG 5 RM 650 1900 KANAWHA BLVD E CHARLESTON WV25305-0432 US	GENERAL MANAGER PUBLIC TRANSIT DIVISION OF KANAWHA VALLEY REGIONAL TRANSPORTATION AUTHORITY 1550 FOURTH AVE CHARLESTON WV 25324 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	156" WB DRW Narrow Body Cutaway	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
25101502	Startrans		Candidate II

Extended Description :

156" WB DRW Narrow Body Cutaway

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Question deadline 4:00 p.m.	2020-07-07

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735
Doc Description: 156" WB DRW Narrow Body Cutaway
Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-06-30	2020-07-17 13:30:00	CRFQ 0805 PTR2000000003	1

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc.
5120 Wards Road
Evington, VA. 24550
1-800-533-1006

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X [signature] **FEIN #** 540806-176 **DATE** 07/23/2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

The West Virginia Purchasing Division for the Agency, The West Virginia Division of Public Transit is soliciting bids from qualified vendors to establish an "Open-End" contract for the purchase of 156" Wheelbase Dual Rear Wheel (DRW) Narrow Body Cutaway vehicles per the Specifications, Terms & Conditions and bid requirements as attached

INVOICE TO	SHIP TO
ACCOUNTS PAYABLE	GENERAL MANAGER
PUBLIC TRANSIT DIVISION OF	PUBLIC TRANSIT DIVISION OF
BLDG 5 RM 650	KANAWHA VALLEY REGIONAL TRANSPORTATION AUTHORITY
1900 KANAWHA BLVD E	1550 FOURTH AVE
CHARLESTON WV25305-0432	CHARLESTON WV 25324
US	US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	156" WB DRW Narrow Body Cutaway	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
25101502	Startrans		Candidate II

Extended Description :

156" WB DRW Narrow Body Cutaway

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Question deadline 4:00 p.m.	2020-07-07

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

U.S. Department
of Transportation
**Federal Transit
Administration**

1200 New Jersey Avenue SE
Washington, D.C. 20590

July 7, 2017

Larry Hall
Director of Engineering
Starcraft Bus, Division of Forest River, Inc.
2367 Century Drive
Goshen, IN 46528

Dear Mr. Hall,

You sent letters to FTA dated November 7, 2014 and November 13, 2014 and an email dated December 2, 2014 in which you requested assistance from the Federal Transit Administration (FTA) concerning the applicability of the Bus Testing Regulation (49 CFR Part 665) to Starcraft bus models being sold as Startrans bus models. In those letters, email and subsequent phone discussions you indicated that:

- Forest River Inc. has purchased the "Startrans" brand. As a result, Forest River intends to offer comparable Starcraft bus models branded as existing Startrans bus models and leverage the existing Startrans bus dealer network to deliver them to FTA grantees.

- The future Startrans bus models will be produced on the same production line as the comparable Starcraft bus models. All future StarTrans Bus models will be structurally the same as the Starcraft Bus model, but will cosmetically have the StarTrans Bus model body lines and badging.

- The remaining Startrans bus production runs to fulfill open contracts will be completed on the Startrans production lines. Once those are completed, all future Startrans bus models will be Starcraft products.

- Starcraft would like to use the existing Starcraft bus testing reports as evidence of satisfying the Bus Testing regulation for the future Startrans bus models built on the Starcraft production lines. The corresponding Starcraft bus model for each Startrans bus model is provided in the table below. The test report for the Starcraft Allstar is PTI-BT-0518. This report also covers the Starlite bus model which is a narrow body version of the Allstar. The test report for the Allstar XL is PTI-BT-0815.

Existing Startrans Bus Model	Corresponding Starcraft Bus Model
Senator II Chassis: Ford E-350/450 & GM 3500/4500	**Allstar** Chassis: Ford E-350/450 & GM 3500/4500
Senator II MFSAB Chassis: Ford E-350/450 & GM 3500/4500	**Allstar** Chassis: Ford E-350/450 & GM 3500/4500
Candidate II Chassis: Ford E-350/450	**Starlite** Chassis: Ford E-350/450
Senator II HD Chassis: Ford F-450/550	**Allstar XL** Chassis: Ford F-450/550

You asked FTA to determine if any testing would be required to offer the existing Starcraft bus models with the "Startrans" name as identified above. FTA reviewed your request and determined that the Starcraft Allstar, Starlite, and Allstar XL built on the Starcraft production line can be offered to FTA grantees as the Startrans Senator II, Senator II MFSAB, Candidate II, Senator II HD **without any additional testing.** You were advised that Starcraft should submit the latest comparable chassis test report that reflects the correct chassis, fuel type and fuel conversion supplier (if an alternative fuel conversion) and powertrain of the Startrans bus being offered to FTA grantees, in addition to submitting the applicable Starcraft test report (PTI-BT-0518 or PTI-BT-0815).

This revised letter is to confirm that **Starcraft Starlite Transit is the same as the StarTran's Candidate II Transit**. Similarly to your previous representation, both buses are built on the Ford Transit chassis on the same assembly line in the same manner and with the same materials. Bus Testing Report number LTI-BT-R1609 is applicable to both buses.

Existing Startrans Bus Model	Corresponding Starcraft Bus Model
Candidate II Chassis: Ford Transit	**Starlite** Chassis: Ford Transit

This determination is based on the changes outlined to FTA as stated above. Should you make any other changes to the bus models, additional testing may be required. If you require any further assistance with this or other matters concerning Bus Testing, I encourage you to consult the resources provided at www.transit.dot.gov/research-innovation/bus-testing. If you still have questions after checking this website, please feel free to contact me.

Sincerely,

Marcel Belanger
Bus Testing Program Manager
Office of Technology, TRI-20
marcel.belanger@dot.gov
202-366-0725

FEDERAL TRANSIT BUS TEST

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

Manufacturer: Starcraft Bus a Division of Forest River, Inc.
Model: Starlite Transit

Submitted for Testing in Service-Life Category 5 Year /150,000 Miles

SEPTEMBER 2016

Report Number: LTI-BT-R1609

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

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

FEDERAL TRANSIT BUS TEST

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

In accordance with CFR 49, Volume 7, Part 665

Manufacturer: Starcraft Bus a Division
of Forest River, Inc.
Manufacturer's address: 2367 Century Drive
Goshen, IN 46528

Model: Starlite Transit

Submitted for Testing in Service-Life Category
5 Year /150,000 Miles

Report Number: LTI-BT-R1609

ACCREDITED
Mechanical Testing Certificate 3172.01

Quality Authorization | Director, Bus Research and Testing Center (Title) | 9/23/16 (Date)

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EXECUTIVE SUMMARY

Starcraft Bus a Division of Forest River, Inc., submitted a model Starlite Transit, gasoline-powered 12 seat (including the driver) 23-foot bus, for a 5 yr/150,000 mile STURAA test. The odometer reading at the time of delivery was 32 miles. Testing started on May 31, 2016 and was completed on September 1, 2016. The Check-In section of the report provides a description of the bus and specifies its major components.

The primary part of the test program is the Structural Durability Test, which also provides the information for the Maintainability and Reliability results. The Structural Durability Test was started on April 11, 2016 and was completed on August 4, 2016.

The interior of the bus is configured with seating for 12 passengers including the driver plus 2 wheelchair positions. Note: this test bus is not designed to accommodate standing passengers, therefore GVW and SLW will be the same load. At 150 lbs per person and 600 lbs per wheelchair position, this load results in a measured gross vehicle weight of 10,290 lbs. The first segment of the Structural Durability Test, GVW, and the middle segment SLW were performed with the test bus loaded to 10,290 lbs. The final segment was performed at a curb weight of 7,590 lbs. Durability driving resulted in unscheduled maintenance and failures that involved a variety of subsystems. A description of failures, and a complete and detailed listing of scheduled and unscheduled maintenance is provided in the Maintainability section of this report.

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

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

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

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

and gradeability test data are provided in Section 4, Performance. The average time to obtain 50 mph was 13.66 seconds. The Stopping Distance phase of the Brake Test was completed with the following results; for the Uniform High Friction Test average stopping distances were 17.39' at 20 mph, 36.97' at 30 mph, 71.68' at 40 mph and 90.03' at 45 mph. The average stopping distance for the Uniform Low Friction Test was 22.41'. There was no deviation from the test lane during the performance of the Stopping Distance phase. During the Stability phase of Brake Testing the test bus experienced no deviation from the test lane during both approaches to the Split Friction Road surface. The Parking Brake phase was completed with the test bus maintaining the parked position for the full five minute period with no slip or roll observed in both the uphill and downhill positions.

The Shakedown Test produced a maximum final loaded deflection of 0.105 inches with a permanent set ranging between -0.002 to 0.005 inches under a distributed static load of 5,700 lbs. The Distortion Test was completed with all subsystems, doors and escape mechanisms operating properly. No water leakage was observed throughout the test. All subsystems operated properly.

The test bus submitted for testing was not equipped with any type of tow eyes or tow hooks, therefore the Static Tow Test was not performed. The Dynamic Towing Test was performed by means of a front-lift tow. The towing interface was accomplished using a hydraulic under-lift wrecker. The bus was towed without incident and no damage resulted from the test. The manufacturer does not recommend towing the bus from the rear, therefore, a rear test was not performed. The Jacking and Hoisting Tests were also performed without incident. The bus was found to be stable on the jack stands, and the minimum jacking clearance observed with a tire deflated was 6.1 inches.

A Fuel Economy Test was run on simulated central business district, arterial, and commuter courses. The results were 9.94 mpg, 10.03 mpg, and 17.72 mpg respectively; with an overall average of 11.40 mpg.

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

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

ABBREVIATIONS

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

TEST BUS CHECK-IN

I. OBJECTIVE

The objective of this task is to log in the test bus, assign a bus number, complete the vehicle data form, and perform a safety check.

II. TEST DESCRIPTION

The test consists of assigning a bus test number to the bus, cleaning the bus, completing the vehicle data form, obtaining any special information and tools from the manufacturer, determining a testing schedule, performing an initial safety check, and performing the manufacturer's recommended preventive maintenance. The bus manufacturer must certify that the bus meets all Federal regulations.

III. DISCUSSION

The check-in procedure is used to identify in detail the major components and configuration of the bus.

The test bus consists of a Starcraft Bus a Division of Forest River, Inc., model Starlite Transit. The bus has an O.E.M. driver's door and aftermarket passenger door rear of the front axle and a dedicated handicap entrance equipped with a BraunAbility model NCL917F1B3454HB-2 handicap lift rear of the rear axle. Power is provided by a gasoline-fueled, Ford Motor Co. model 3.7 L engine coupled to a Ford Motor Co. model 6-Speed Auto Select Shift with Overdrive transmission.

The measured curb weight is 3,020 lbs. for the front axle and 4,570 lbs. for the rear axle. These combined weights provide a total measured curb weight of 7,590 lbs. There are 12 seats including the driver and room for 2 wheelchair positions. Note; this test bus is not designed to accommodate standing passengers. Gross load is 150 lb. x 12 = 1,800 lbs. + 1,200 lbs. (2 wheelchair positions) = 3,000 lbs. At full capacity, the measured gross vehicle weight is 10,290 lbs

VEHICLE DATA FORM

Bus Number: 1609	Date: 03-31-16
Bus Manufacturer: Starcraft Bus a Division of Forest River, Inc.	Vehicle Identification Number (VIN): 1FDES8PM1GKA46308
Model Number: Starlite Transit	Chassis Mfr./Mod.#: Ford Motor Co./ Transit 350HD
Personnel: E.D. & S.R.	Starting Odometer Reading: 32

WEIGHT:

Individual Wheel Reactions:

Weights (lb)	Front Axle		Middle Axle		Rear Axle	
	Curb	Street	Curb	Street	Curb	Street
CW	1,490	1,530	N/A	N/A	2,400	2,170
SLW	1,270	1,780	N/A	N/A	3,580	3,660
GVW	1,270	1,780	N/A	N/A	3,580	3,660

Total Weight Details:

Weight (lb)	CW	SLW	GVW	GAWR
Front Axle	3,020	3,050	3,050	4,130
Middle Axle	N/A	N/A	N/A	N/A
Rear Axle	4,570	7,240	7,240	7,275
Total	7,590	10,290	10,290	GVWR: 10,360

Dimensions:

Length (ft/in)	23/5.75
Width (in)	87.0
Height (in)	109
Front Overhang (in)	40.75
Rear Overhang (in)	86.0
Wheel Base (in)	155
Wheel Track (in)	Front: 67.9
	Middle: N/A
	Rear: 66.2

Bus Number: 1609	Date: 03-31-16

CLEARANCES:

Lowest Point Outside Front Axle	Location: Splash Guard Clearance(in): 8.8
Lowest Point Outside Rear Axle	Location: Exhaust Clamp Clearance(in): 10.1
Lowest Point between Axles	Location: Stepwell Clearance(in): 8.0
Ground Clearance at the center (in)	9.8
Front Approach Angle (deg)	19.5
Rear Approach Angle (deg)	9.5
Ramp Clearance Angle (deg)	5.8
Aisle Width (in)	20.2
Inside Standing Height at Center Aisle (in)	77.2

BODY DETAILS:

Body Structural Type	Integral		
Frame Material	Steel		
Body Material	Aluminum		
Floor Material	Plywood		
Roof Material	Composite		
Windows Type	■ Fixed - Bottom	■ Movable - Top	
Window Mfg./Model No.	ICI / 16CFR 1201 II ANSI Z97.1-2004 UA		
Number of Doors	1 Front	1 Rear (W/C)	1 (Passenger)
Mfr. / Model No.	Ford/O.E.M.	Challenger Door MT CRWH-30	A&M Systems 213380A3G8
Dimension of Each Door (in)	Front: 27.3 x 59.5	Rear Pass: 78x29.9	Rear W/C: 69.2 x 44.3
Passenger Seat Type	☐ Cantilever	■ Pedestal	☐ Other (explain)
Driver Seat Type	☐ Air	■ Spring	☐ Other (explain)
Mfr. / Model No.	Ford / O.E.M.		
Number of Seats (including Driver)	12		

Bus Number: 1609	Date: 03-31-16

BODY DETAILS (Contd.)

Free Floor Space (ft^2)	15.7
Height of Each Step at Normal Position (in)	Front 1. 10.3 2. 9.0 3. 8.2 4. N/A
	Middle 1. N/A 2. N/A 3. N/A 4. N/A
	Rear 1. N/A 2. N/A 3. N/A 4. N/A
Step Elevation Change - Kneeling (in)	N/A

ENGINE

Type	☐ C.I.	☐ Alternate Fuel	
	■ S.I.	☐ Other (explain)	
Mfr. / Model No.	Ford Motor Co. / 3.7 Liter		
Location	■ Front	☐ Rear	☐ Other (explain)
Fuel Type	■ Gasoline	☐ CNG	☐ Methanol
	☐ Diesel	☐ LNG	☐ Other (explain)
Fuel Induction Type	■ Injected	☐ Carburetion	
Alternator (Generator) Mfr. / Model No.	Ford / O.E.M.		
Maximum Rated Output (Volts / Amps)	12 / 220		
Air Compressor Mfr. / Model No.	N/A		
Maximum Capacity (ft^3 / min)	N/A		
Starter Type	■ Electrical	☐ Pneumatic	☐ Other (explain)
Starter Mfr. / Model No.	Ford / O.E.M.		

Bus Number: 1609	Date: 03-31-16

TRANSMISSION

Transmission Type	☐ Manual	■ Automatic	☐ Load Sensing Adaptive
Mfr. / Model No.	Ford / 6 – Speed Auto Select Shift with Overdrive		
Control Type	■ Mechanical	☐ Electrical	☐ Other
Integral Retarder	☐ Yes	■ No	

SUSPENSION

Number of Axles	2		
Front Axle Type	■ Independent	☐ Beam Axle	
Mfr. / Model No.	Ford / O.E.M.		
Axle Ratio (if driven)	N/A		
Suspension Type	☐ Air	■ Spring	☐ Other (explain)
No. of Shock Absorbers	2		
Mfr. / Model No.	Ford / BK31-18045-BC		
Middle Axle Type	☐ Independent	☐ Beam Axle	
Mfr. / Model No.	N/A		
Axle Ratio (if driven)	N/A		
Suspension Type	☐ Air	☐ Spring	☐ Other (explain)
No. of Shock Absorbers	N/A		
Mfr. / Model No.	N/A		
Rear Axle Type	☐ Independent	■ Beam Axle	
Mfr. / Model No.	Ford / O.E.M.		
Axle Ratio (if driven)	4.10		
Suspension Type	☐ Air	■ Spring	☐ Other (explain)
No. of Shock Absorbers	2		
Mfr. / Model No.	Ford / FK41-18080-FA		

Bus Number: 1609	Date: 03-31-16

WHEELS & TIRES

Front	Wheel Mfr./ Model No.	Ford / 16 x 6
	Tire Mfr./ Model No.	Hankook Dyna Pro HT
Rear	Wheel Mfr./ Model No.	Ford / 16 x 6
	Tire Mfr./ Model No.	Hankook Dynapro HT

BRAKES

Front Axle Brakes Type	☐ Cam	■ Disc	☐ Other (explain)
Mfr. / Model No.	Ford / CK4Z-2001-A		
Middle Axle Brakes Type	☐ Cam	☐ Disc	☐ Other (explain)
Mfr. / Model No.	N/A		
Rear Axle Brakes Type	☐ Cam	■ Disc	☐ Other (explain)
Mfr. / Model No.	Ford / CK4Z-2200-A		

HVAC

Heating System Type	☐ Air	■ Water	☐ Other
Capacity (Btu/hr)	Not available.		
Mfr. / Model No.	Ford / O.E.M.		
Air Conditioner	■ Yes	☐ No	
Location	Front dash & rear ceiling		
Capacity (Btu/hr)	Dash - O.E.M. Rear ceiling – 45,000		
A/C Compressor Mfr. / Model No.	Dash – Not available. Rear ceiling – Trans/Air / TA 712 T1		

STEERING

Steering Gear Box Type	Hydraulic Power Rack & Pinion		
Mfr. / Model No.	Ford / O.E.M.		
Steering Wheel Diameter	14.7”		
Number of turns (lock to lock)	3.5		
Control Type	☐ Electric	■ Hydraulic	☐ Other (expain)

Bus Number: 1609	Date: 03-31-16

OTHERS

Wheel Chair Ramps	Location: N/A	Type: N/A
Wheel Chair Lifts	Location: Rear	Type: Lift
Mfr. / Model No.	BraunAbility / NCL917F1B3454HB-2	
Emergency Exit	Location: Door Windows	Number: 1 3

CAPACITIES

Fuel Tank Capacity (gallons)	25
Engine Crankcase Capacity (quarts)	6.0
Transmission Capacity (quarts)	13.1
Differential Capacity (quarts)	3.0
Cooling System Capacity (quarts)	16.4
Power Steering Fluid Capacity (quarts)	Not available.

VEHICLE DATA FORM

Bus Number: 1609	Date: 03-31-16

List all spare parts, tools and manuals delivered with the bus.

Part Number	Description	Qty.
ASH – 24599 / CK4Z – 18125J	Shocks	2
ASH – 24630 / BK3Z – 18124 - A	Shocks	2
CK4Z 2200 A	Brake Pads (Sets of 4)	2
CK4Z 2001 A	Brake Pads (Sets of 4)	2
FL 500S	Oil Filter / Motorcraft	1
FA 1916	Air Filter	1
CK4Z – 7A098 A	Transmission Filter Screen Assembly	1
CK4Z – 1125 B	Rotors	1

COMPONENT/SUBSYSTEM INSPECTION FORM

Bus Number: 1609	Date: 3/31/16

Subsystem	Checked	Initials	Comments
Air Conditioning Heating and Ventilation	✓	E.D.	N/A
Body and Sheet Metal	✓	E.D.	N/A
Frame	✓	E.D.	N/A
Steering	✓	E.D.	N/A
Suspension	✓	E.D.	N/A
Interior/Seating	✓	E.D.	N/A
Axles	✓	E.D.	N/A
Brakes	✓	E.D.	N/A
Tires/Wheels	✓	E.D.	N/A
Exhaust	✓	E.D.	N/A
Fuel System	✓	E.D.	N/A
Power Plant	✓	E.D.	N/A
Accessories	✓	E.D.	N/A
Lift System	✓	E.D.	N/A
Interior Fasteners	✓	E.D.	N/A
Batteries	✓	E.D.	N/A

CHECK - IN



STARTCRAFT BUS A DIVISION OF FOREST RIVER, INC., MODEL STARLITE TRANSIT



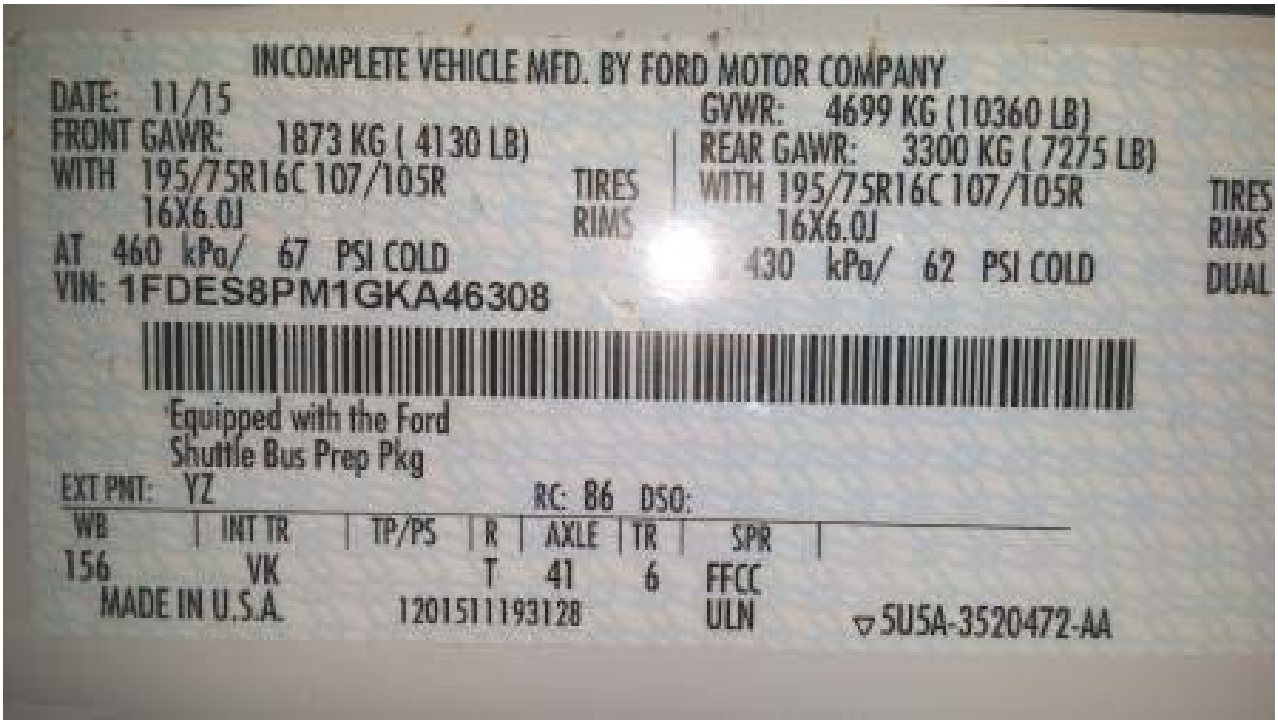
CHECK - IN CONT.



STARTCRAFT BUS A DIVISION OF FOREST RIVER, INC., MODEL STARLITE TRANSIT EQUIPPED WITH A BRAUNABILITY MODEL NCL917F1B3454HB-2 HANDICAP PLATFORM LIFT



CHECK - IN CONT.



VIN TAG



ENGINE COMPARTMENT

CHECK - IN CONT.



OPERATOR'S AREA



INTERIOR

1. MAINTAINABILITY

1.1 ACCESSIBILITY OF COMPONENTS AND SUBSYSTEMS

1.1-I. TEST OBJECTIVE

The objective of this test is to check the accessibility of components and subsystems.

1.1-II. TEST DESCRIPTION

Accessibility of components and subsystems is checked, and where accessibility is restricted the subsystem is noted along with the reason for the restriction.

1.1-III. DISCUSSION

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

ACCESSIBILITY DATA FORM

Bus Number: 1609	Date: 8-30-16

Component	Checked	Comments
ENGINE :		
Oil Dipstick	✓	None noted.
Oil Filler Hole	✓	None noted.
Oil Drain Plug	✓	None noted.
Oil Filter	✓	None noted.
Fuel Filter	✓	None noted.
Air Filter	✓	None noted.
Belts	✓	None noted.
Coolant Level	✓	None noted.
Coolant Filler Hole	✓	None noted.
Coolant Drain	✓	None noted.
Spark / Glow Plugs	N/A	None noted.
Alternator	✓	None noted.
Diagnostic Interface Connector	✓	None noted.
TRANSMISSION :		
Fluid Dip-Stick	N/A	None noted.
Filler Hole	✓	Not customer accessible.
Drain Plug	N/A	None noted.
SUSPENSION :		
Bushings	✓	None noted.
Shock Absorbers	✓	None noted.
Air Springs	N/A	None noted.
Leveling Valves	N/A	None noted.
Grease Fittings	N/A	None noted.

ACCESSIBILITY DATA FORM

Bus Number: 1609	Date: 8-30-16

Component	Checked	Comments
HVAC :		
A/C Compressor	✓	None noted.
Filters	✓	None noted.
Fans	✓	None noted.
ELECTRICAL SYSTEM :		
Fuses	✓	None noted.
Batteries	✓	None noted.
Voltage regulator	✓	Internal regulator.
Voltage Converters	N/A	None noted.
Lighting	✓	None noted.
MISCELLANEOUS :		
Brakes	✓	None noted.
Handicap Lifts/Ramps	✓	None noted.
Instruments	✓	None noted.
Axles	✓	None noted.
Exhaust	✓	None noted.
Fuel System	✓	None noted.
OTHERS :		

1.2 SERVICING, PREVENTIVE MAINTENANCE, AND REPAIR AND MAINTENANCE DURING TESTING

1.2-I. TEST OBJECTIVE

The objective of this test is to collect maintenance data about the servicing, preventive maintenance, and repair.

1.2.-II. TEST DESCRIPTION

The test will be conducted by operating the NBM and collecting the following data on work order forms and a driver log.

1. Unscheduled Maintenance
    a. Bus number
    b. Date
    c. Mileage
    d. Description of malfunction
    e. Location of malfunction (e.g., in service or undergoing inspection)
    f. Repair action and parts used
    g. Man-hours required

2. Scheduled Maintenance
    a. Bus number
    b. Date
    c. Mileage
    d. Engine running time (if available)
    e. Results of scheduled inspections
    f. Description of malfunction (if any)
    g. Repair action and parts used (if any)
    h. Man-hours required

The buses will be operated in accelerated durability service. While typical items are given below, the specific service schedule will be that specified by the manufacturer.

A. Service
    1. Fueling
    2. Consumable checks
    3. Interior cleaning

B. Preventive Maintenance
    4. Brake adjustments
    5. Lubrication
    6. 3,000 mi (or equivalent) inspection

7. Oil and filter change inspection
8. Major inspection
9. Tune-up

C. Periodic Repairs
1. Brake reline
2. Transmission change
3. Engine change
4. Windshield wiper motor change
5. Stoplight bulb change
6. Towing operations
7. Hoisting operations

1.2-III. DISCUSSION

Servicing and preventive maintenance were performed at manufacturer-specified intervals. The following Scheduled Maintenance Form lists the mileage, items serviced, the service interval, and amount of time required to perform the maintenance. Finally, the Unscheduled Maintenance List along with Unscheduled Maintenance-related photographs is included in Section 5.7, Structural Durability. This list supplies information related to failures that occurred during the durability portion of testing. The Unscheduled Maintenance List includes the date and mileage at which the malfunction occurred, a description of the malfunction and repair, and the time required to perform the repair.

(Page 1 of 1)
SCHEDULED MAINTENANCE
STARCRAFT #1609

DATE	TEST MILES	SERVICE	ACTIVITY	MAN HOURS	DOWN TIME
04-26-16	1,029	P.M./Inspection	Linkage, tie rods, universals/u-joints all lubed; all fluids checked.	4.00	4.00
05-04-16	1,389	P.M./Inspection	Linkage, tie rods, universals/u-joints all lubed; all fluids checked.	4.00	4.00
06-03-16	3,096	P.M./Inspection	Linkage, tie rods, universals/u-joints all lubed; all fluids checked.	4.00	4.00
06-14-16	4,292	P.M./Inspection	Linkage, tie rods, universals/u-joints all lubed; all fluids checked.	4.00	4.00
06-30-16	4,875	P.M./Inspection Fuel Economy Prep	Linkage, tie rods, universals/u-joints all lubed. Oil changed. Oil, fuel, and air filters changed. Transmission oil and filter changed.	8.00	8.00

1.3 REPLACEMENT AND/OR REPAIR OF SELECTED SUBSYSTEMS

1.3-I. TEST OBJECTIVE

The objective of this test is to establish the time required to replace and/or repair selected subsystems.

1.3-II. TEST DESCRIPTION

The test will involve components that may be expected to fail or require replacement during the service life of the bus. In addition, any component that fails during the NBM testing is added to this list. Components to be included are:

1. Transmission
2. Alternator
3. Starter
4. Batteries
5. Windshield wiper motor

1.3-III. DISCUSSION

During the test, several additional components were removed for repair or replacement. Following is a list of components and total repair/replacement time.

	MAN HOURS
Both rear sway bar links.	4.00
Exhaust tailpipe hanger.	1.00
Right side rear sway bar bolt.	1.00

At the end of the test, the remaining items on the list were removed and replaced. The transmission assembly took 10.00 man-hours (two men 5.00 hrs.) to remove and replace. The time required for repair/replacement of the four remaining components is given on the following Repair and/or Replacement Form.

REPLACEMENT AND/OR REPAIR FORM

Subsystem	Replacement Time
Transmission	10.00 man hours
Wiper Motor	0.50 man hours
Starter	0.50 man hours
Alternator	1.75 man hours
Batteries	1.00 man hours

1.3 REPLACEMENT AND/OR REPAIR OF SELECTED SUBSYSTEMS



TRANSMISSION REMOVAL AND REPLACEMENT (10.00 MAN HOURS)



WIPER MOTOR REMOVAL AND REPLACEMENT (0.50 MAN HOURS)

1.3 REPLACEMENT AND/OR REPAIR OF SELECTED SUBSYSTEMS CONT.



STARTER REMOVAL AND REPLACEMENT (0.50 MAN HOURS)



ALTERNATOR REMOVAL AND REPLACEMENT (1.75 MAN HOURS)

2. RELIABILITY - DOCUMENTATION OF BREAKDOWN AND REPAIR TIMES DURING TESTING

2-I. TEST OBJECTIVE

The objective of this test is to document unscheduled breakdowns, repairs, down time, and repair time that occur during testing.

2-II. TEST DESCRIPTION

Using the driver log and unscheduled work order forms, all significant breakdowns, repairs, man-hours to repair, and hours out of service are recorded on the Reliability Data Form.

CLASS OF FAILURES

Classes of failures are described below:

(a) Class 1: Physical Safety. A failure that could lead directly to passenger or driver injury and represents a severe crash situation.

(b) Class 2: Road Call. A failure resulting in an en route interruption of revenue service. Service is discontinued until the bus is replaced or repaired at the point of failure.

(c) Class 3: Bus Change. A failure that requires removal of the bus from service during its assignments. The bus is operable to a rendezvous point with a replacement bus.

(d) Class 4: Bad Order. A failure that does not require removal of the bus from service during its assignments but does degrade coach operation. The failure shall be reported by driver, inspector, or hostler.

2-III. DISCUSSION

A listing of breakdowns and unscheduled repairs is accumulated during the Structural Durability Test. The following Reliability Data Form lists all unscheduled repairs under classes as defined above. These classifications are somewhat subjective as the test is performed on a test track with careful inspections every two hours. However, even on the road, there is considerable latitude on deciding how to handle many failures.

The Unscheduled Repair List is also attached to provide a reference for the repairs that are included in the Reliability Data Forms.

The classification of repairs according to subsystem is intended to emphasize those systems which had persistent minor or more serious problems. There were no Class 1 or 2 failures. Of the five Class 3 failures, three involved the suspension system and two occurred with the body. These, and the one remaining Class 4 failure is available for review in the Unscheduled Maintenance List, located in Section 5.7 Structural Durability.

RELIABILITY DATA FORM

Bus Number: 1609	Date Completed: 8-4-16
Personnel: B.R.	

	Failure Type					
	Class 4 Bad order	Class 3 Bus Change	Class 2 Road Call	Class 1 Physical Safety		
Subsystem	Mileage	Mileage	Mileage	Mileage	Man hours	Down Time
Suspension		1,029			4.00	88.00
		3,096			1.00	1.00
		4,292			4.00	136.00
Body/Doors/Mirrors	1,029				1.00	1.00
		4,292			4.00	4.00
		2,138			1.00	1.00

3. SAFETY - A DOUBLE-LANE CHANGE (OBSTACLE AVOIDANCE)

3-I. TEST OBJECTIVE

The objective of this test is to determine handling and stability of the bus by measuring speed through a double lane change test.

3-II. TEST DESCRIPTION

The Safety Test is a vehicle handling and stability test. The bus will be operated at SLW on a smooth and level test track. The bus will be driven through a double lane change course at increasing speed until the test is considered unsafe or a speed of 45 mph is reached. The lane change course will be set up using pylons to mark off two 12 foot center to center lanes with two 100 foot lane change areas 100 feet apart. The bus will begin in one lane, change to the other lane in a 100 foot span, travel 100 feet, and return to the original lane in another 100 foot span. This procedure will be repeated, starting first in the right-hand and then in the left-hand lane.

3-III. DISCUSSION

The double-lane change was performed in both right-hand and left-hand directions. The bus was able to safely negotiate the test course in both the right-hand and left-hand directions up to the maximum test speed of 45 mph.

SAFETY DATA FORM

Bus Number: 1609	Date: 5-17-16
Personnel: T.S., T.G. & C.S.	

Temperature (°F): 64	Humidity (%): 51
Wind Direction: SW	Wind Speed (mph): 5
Barometric Pressure (in.Hg): 28.90	

SAFETY TEST: DOUBLE LANE CHANGE	
Maximum safe speed tested for double-lane change to left	45 mph
Maximum safe speed tested for double-lane change to right	45 mph
Comments of the position of the bus during the lane change:	
A safe profile was maintained through all portions of testing.	
Comments of the tire/ground contact patch:	
Tire/ground contact was maintained through all portions of testing.	



RIGHT - HAND APPROACH



LEFT - HAND APPROACH

4.0 PERFORMANCE

4.1 PERFORMANCE - AN ACCELERATION, GRADEABILITY, AND TOP SPEED TEST

4.1-I. TEST OBJECTIVE

The objective of this test is to determine the acceleration, gradeability, and top speed capabilities of the bus.

4.1-II. TEST DESCRIPTION

In this test, the bus will be operated at SLW on the skid pad at the PSBRTF. The bus will be accelerated at full throttle from a standstill to a maximum "geared" or "safe" speed as determined by the test driver. The vehicle speed is measured using a Correvit non-contacting speed sensor. The times to reach speed between ten mile per hour increments are measured and recorded using a stopwatch with a lap timer. The time to speed data will be recorded on the Performance Data Form and later used to generate a speed vs. time plot and gradeability calculations.

4.1-III. DISCUSSION

This test consists of three runs in both the clockwise and counterclockwise directions on the Test Track. Velocity versus time data is obtained for each run and results are averaged together to minimize any test variability which might be introduced by wind or other external factors. The test was performed up to a maximum speed of 50 mph. The fitted curve of velocity vs. time is attached, followed by the calculated gradeability results. The average time to obtain 50 mph was 13.66 seconds.

PERFORMANCE DATA FORM

Bus Number: 1609	Date: 5-17-16
Personnel: T.S., S.R., E.D. & C.S.	
Temperature (°F): 66	Humidity (%): 48
Wind Direction: W	Wind Speed (mph): 6
Barometric Pressure (in.Hg): 28.87	

		INITIALS:
Air Conditioning - OFF	✓Checked	T.G.
Ventilation fans - ON HIGH	✓Checked	T.G.
Heater pump motor - OFF	✓Checked	T.G.
Defroster - OFF	✓ Checked	T.G.
Exterior and interior lights - ON	✓ Checked	T.G.
Windows and doors - CLOSED	✓ Checked	T.G.

ACCELERATION, GRADEABILITY, TOP SPEED

Counter Clockwise Recorded Interval Times

Speed	Run 1	Run 2	Run 3
10 mph	2.01	2.01	1.82
20 mph	4.27	4.44	4.41
30 mph	6.19	6.60	6.50
40 mph	10.09	10.14	10.14
Top Test Speed(mph) 50	13.70	13.76	13.51

Clockwise Recorded Interval Times

Speed	Run 1	Run 2	Run 3
10 mph	1.82	1.84	1.84
20 mph	4.03	4.06	4.25
30 mph	6.44	6.82	6.01
40 mph	10.26	10.45	10.00
Top Test Speed(mph) 50	13.87	13.77	13.34

PERFORMANCE SUMMARY SHEET

BUS MANUFACTURER :Starcraft Bus BUS NUMBER :1609
BUS MODEL :Starlite Transit TEST DATE :05-17-16

TEST CONDITIONS :

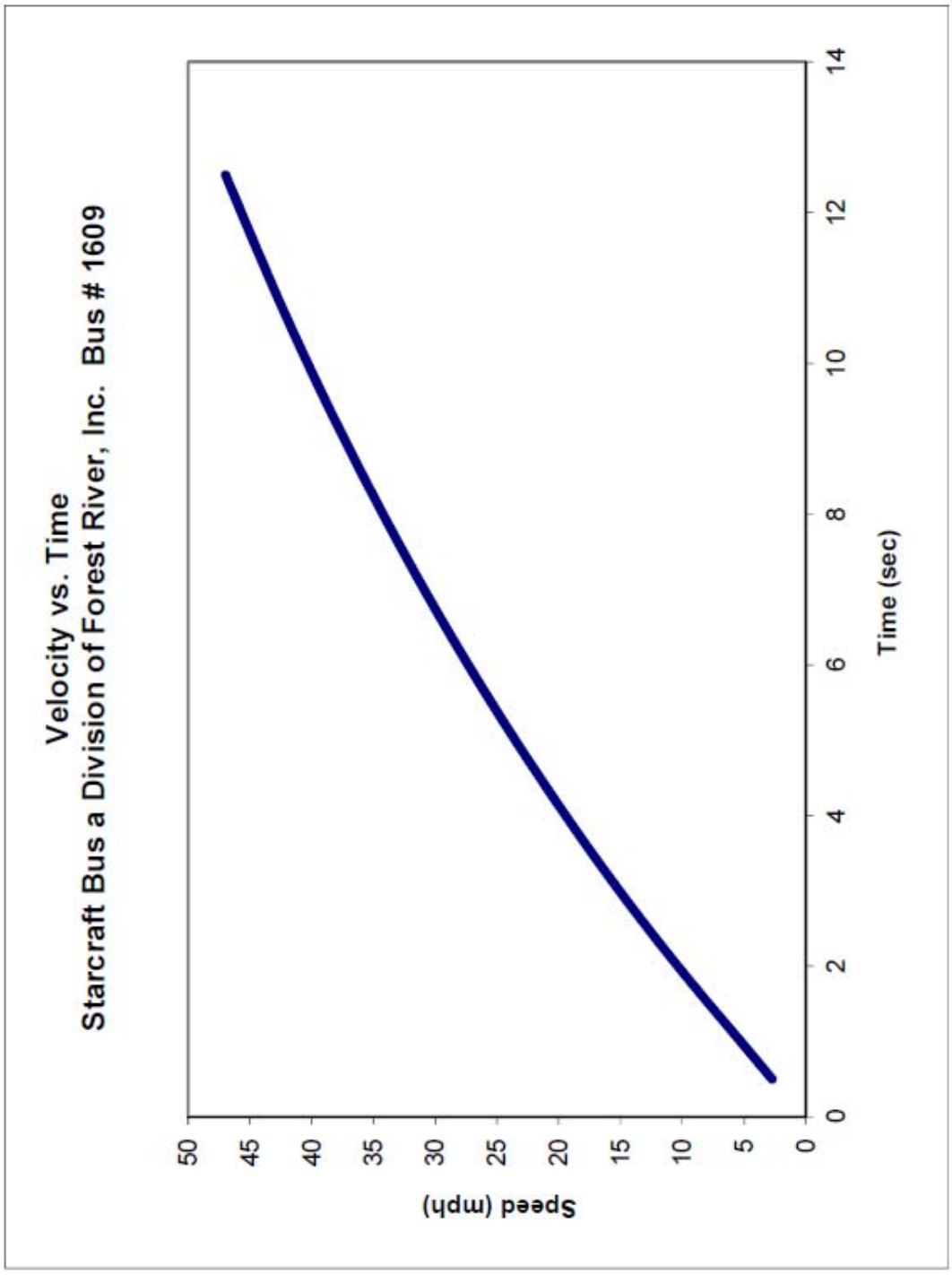
TEMPERATURE (DEG F)	: 66.0
WIND DIRECTION	: W
WIND SPEED (MPH)	: 6.0
HUMIDITY (%)	: 48
BAROMETRIC PRESSURE (IN. HG)	: 28.9

VEHICLE SPEED	AVERAGE TIME (SEC)		
(MPH)	CCW DIRECTION	CW DIRECTION	TOTAL
10.0	1.95	1.83	1.89
20.0	4.37	4.11	4.24
30.0	6.43	6.42	6.43
40.0	10.12	10.24	10.18
50.0	13.66	13.66	13.66

TEST SUMMARY :

VEHICLE SPEED (MPH)	TIME (SEC)	ACCELERATION (FT/SEC^2)	MAX. GRADE (%)
1.0	.18	8.1	25.9
5.0	.93	7.7	24.5
10.0	1.91	7.2	22.8
15.0	2.98	6.6	21.1
20.0	4.13	6.1	19.4
25.0	5.38	5.6	17.8
30.0	6.74	5.1	16.2
35.0	8.24	4.7	14.7
40.0	9.89	4.2	13.2
45.0	11.72	3.8	11.9
50.0	13.76	3.4	10.6

NOTE : Gradeability results were calculated from performance test data. Actual sustained gradeability performance for vehicles equipped with auto transmission may be lower than the values indicated here.


Velocity vs. Time
Starcraft Bus a Division of Forest River, Inc. Bus # 1609
Speed (mph)
0
5
10
15
20
25
30
35
40
45
50
Time (sec)
0
2
4
6
8
10
12
14

4.0 PERFORMANCE

4.2 Performance - Bus Braking

4.2 I. TEST OBJECTIVE

The objective of this test is to provide, for comparison purposes, braking performance data on transit buses produced by different manufacturers.

4.2 II. TEST DESCRIPTION

The testing will be conducted at the PTI Test Track skid pad area. Brake tests will be conducted after completion of the GVW portion of the vehicle durability test. At this point in testing the brakes have been subjected to a large number of braking snubs and will be considered well burnished. Testing will be performed when the bus is fully loaded at its GVW. All tires on each bus must be representative of the tires on the production model vehicle

The brake testing procedure comprises three phases:

1. Stopping distance tests

    i. Dry surface (high-friction, Skid Number within the range of 70-76)
    ii. Wet surface (low-friction, Skid Number within the range of 30-36)

2. Stability tests
3. Parking brake test

Stopping Distance Tests

The stopping distance phase will evaluate service brake stops. All stopping distance tests on dry surface will be performed in a straight line and at the speeds of 20, 30, 40 and 45 mph. All stopping distance tests on wet surface will be performed in straight line at speed of 20 mph.

The tests will be conducted as follows:

1. **Uniform High Friction Tests:** Four maximum deceleration straight-line brake applications each at 20, 30, 40 and 45 mph, to a full stop on a uniform high-friction surface in a 3.66-m (12-ft) wide lane.

2. **Uniform Low Friction Tests:** Four maximum deceleration straight-line brake applications from 20 mph on a uniform low friction surface in a 3.66-m (12-ft) wide lane.

When performing service brake stops for both cases, the test vehicle is accelerated on the bus test lane to the speed specified in the test procedure and this speed is maintained into the skid pad area. Upon entry of the appropriate lane of the skid pad area, the vehicle's service brake is applied to stop the vehicle as quickly as possible. The stopping distance is measured and recorded for both cases on the test

data form. Stopping distance results on dry and wet surfaces will be recorded and the average of the four measured stopping distances will be considered as the measured stopping distance. Any deviation from the test lane will be recorded.

Stability Tests

This test will be conducted in both directions on the test track. The test consists of four maximum deceleration, straight-line brake applications on a surface with split coefficients of friction (i.e., the wheels on one side run on high-friction SN 70-76 or more and the other side on low-friction [where the lower coefficient of friction should be less than half of the high one] at initial speed of 30 mph).

(l) The performance of the vehicle will be evaluated to determine if it is possible to keep the vehicle within a 3.66m (12 ft) wide lane, with the dividing line between the two surfaces in the lane's center. The steering wheel input angle required to keep the vehicle in the lane during the maneuver will be reported.

Parking Brake Test

The parking brake phase utilizes the brake slope, which has a 20% grade. The test vehicle, at its GVW, is driven onto the brake slope and stopped. With the transmission in neutral, the parking brake is applied and the service brake is released. The test vehicle is required to remain stationary for five minutes. The parking brake test is performed with the vehicle facing uphill and downhill.

4.2-III. DISCUSSION

The Stopping Distance phase of the Brake Test was completed with the following results; for the Uniform High Friction Test average stopping distances were 17.39' at 20 mph, 36.97' at 30 mph, 71.68' at 40 mph and 90.03' at 45 mph. The average stopping distance for the Uniform Low Friction Test was 22.41'. There was no deviation from the test lane during the performance of the Stopping Distance phase.

During the Stability phase of Brake Testing the test bus experienced no deviation from the test lane during both approaches to the Split Friction Road surface.

The Parking Brake phase was completed with the test bus maintaining the parked position for the full five minute period with no slip or roll observed in both the uphill and downhill positions.

Table 4.2-6. Braking Test Data Forms

Bus Number: 1609	Date: 04-15-16
Personnel: T.S., S.R., E.D. & C.S.	
Amb. Temperature (ºF): 60	Wind Speed (mph): 5
Wind Direction: S	Pavement Temp (°F) Start: 81 End: 95

TIRE INFLATION PRESSURE (psi):

Tire Type: Front: Hankook DynaPro HT 195 75R16C
Rear: Hankook DynaPro HT 195 75R16C

	Left Tire(s)		Right Tire(s)	
Front	67		67	
	Inner	Outer	Inner	Outer
Rear	N/A	N/A	N/A	N/A
Rear	N/A	62	N/A	62

AXLE LOADS (lb)

	Left	Right
Front	1,780	1,270
Rear	N/A	N/A
Rear	3,660	3,580

Table 4.2-7. Record of All Braking System Faults/Repairs.

Date	Fault/Repair	Description
4/15/16	None noted.	None noted.

Table 4.2-8.1. Stopping Distance Test Results Form

Stopping Distance (ft)					
Vehicle Direction	CW	CW	CCW	CCW	
Speed (mph)	**Stop 1**	**Stop 2**	**Stop 3**	**Stop 4**	**Average**
20 (dry)	18.70	14.71	16.88	19.27	17.39
30 (dry)	37.76	38.49	33.37	38.27	36.97
40 (dry)	71.91	73.64	68.64	72.53	71.68
45 (dry)	93.22	89.68	89.26	87.98	90.03
20 (wet)	20.63	24.84	21.40	22.80	22.41

Table 4.2-8.2. Stability Test Results Form

Stability Test Results (Split Friction Road surface)			
Vehicle Direction	Attempt	Did test bus stay in 12' lane? (yes/no)	Comments
Drivers side on high friction	1	Yes	None noted
	2	Yes	None noted
Drivers side on low friction	1	Yes	None noted
	2	Yes	None noted

Table 4.2-8.3. Parking Brake Test Form

PARKING BRAKE (Fully Loaded) – GRADE HOLDING						
Vehicle Direction	Attempt	Hold Time (min)	Slide (in)	Roll (in)	Did Hold	No Hold
Front up	1	5:00	0	0	X	
	2	N/A	N/A	N/A	N/A	N/A
	3	N/A	N/A	N/A	N/A	N/A
Front down	1	5:00	0	0	X	
	2	N/A	N/A	N/A	N/A	N/A
	3	N/A	N/A	N/A	N/A	N/A

4.2 Performance - Bus Braking



20% UPHILL GRADE



20% DOWNHILL GRADE

5.1 STRUCTURAL INTEGRITY

5.1 STRUCTURAL STRENGTH AND DISTORTION TESTS – STRUCTURAL SHAKEDOWN TEST

5.1-I. DISCUSSION

The objective of this test is to determine certain static characteristics (e.g., bus floor deflection, permanent structural deformation, etc.) under static loading conditions.

5.1-II. TEST DESCRIPTION

In this test, the bus will be isolated from the suspension by blocking the vehicle under the suspension points. The bus will then be loaded and unloaded up to a maximum of three times with a distributed load equal to 2.5 times gross load. Gross load is 150 lb for every designed passenger seating position, for the driver, and for each 1.5 sq ft of free floor space. For a distributed load equal to 2.5 times gross load, place a 375-lb load on each seat and on every 1.5 sq ft of free floor space. The first loading and unloading sequence will "settle" the structure. Bus deflection will be measured at several locations during the loading sequences.

5.1-III. DISCUSSION

This test was performed based on a maximum passenger capacity of 12 people including the driver plus 2 wheelchair positions. The resulting test load is 12 X 375 lb. = 4,500 lbs. + 1,200 lbs. (2 wheelchair positions) = 5,700 lbs. The load is distributed evenly over the passenger space. Deflection data before and after each loading and unloading sequence is provided on the Structural Shakedown Data Form.

The unloaded height after each test becomes the original height for the next test. Some initial settling is expected due to undercoat compression, etc. After each loading cycle, the deflection of each reference point is determined. The bus is then unloaded and the residual (permanent) deflection is recorded. On the final test, the maximum loaded deflection was 0.105 Inches at reference point 7. The maximum permanent deflection after the final loading sequence ranged from -0.002 Inches at reference point 6 to 0.005 inches at reference point 7.

STRUCTURAL SHAKEDOWN DATA FORM

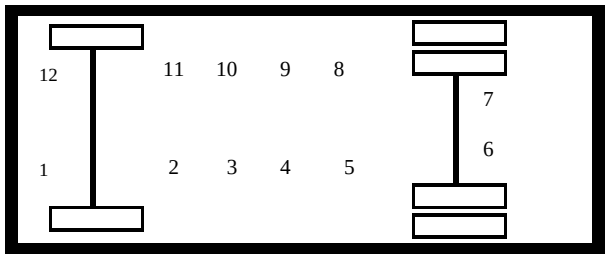
Bus Number: 1609	Date: 04-05-16
Personnel: S.R., E.D., E.L., T.G., P.D. & T.S.	Temperature (°F): 65
Loading Sequence: ■ 1 ☐ 2 ☐ 3 (check one) Test Load (lbs): 5,700 (12 passengers x 375 + 2 W/C @ 600 lbs. each)	

Indicate Approximate Location of Each Reference Point

Right

Front of Bus

Left



Top View

Reference Point No.	A (in) Original Height	B (in) Loaded Height	B-A (in) Loaded Deflection	C (in) Unloaded Height	C-A (in) Permanent Deflection
1	0	-.022	-.022	-.014	-.014
2	0	.071	.071	.010	.010
3	0	.095	.095	.015	.015
4	0	.109	.109	.018	.018
5	0	.112	.112	.019	.019
6	0	.139	.139	.041	.041
7	0	.099	.099	.061	.061
8	0	.069	.069	.013	.013
9	0	.060	.060	.010	.010
10	0	.047	.047	.010	.010
11	0	.028	.028	.006	.006
12	0	-.065	-.065	-.008	-.008

STRUCTURAL SHAKEDOWN DATA FORM

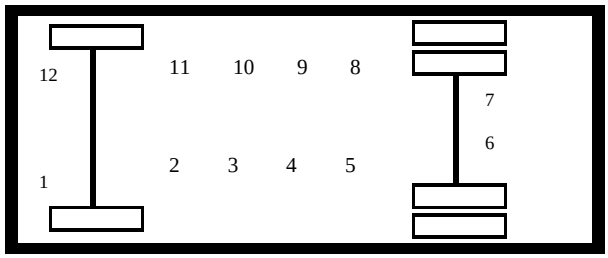
Bus Number: 1609	Date: 04-05-16
Personnel: S.R., E.D., E.L., P.D. & T.G.	Temperature (°F): 65
Loading Sequence: ☐ 1 ■ 2 ☐ 3 (check one) Test Load (lbs): 5,700 (12 passengers x 375 + 2 W/C @ 600 lbs. each)	

Indicate Approximate Location of Each Reference Point

Right

Front of Bus

Left



Top View

Reference Point No.	A (in) Original Height	B (in) Loaded Height	B-A (in) Loaded Deflection	C (in) Unloaded Height	C-A (in) Permanent Deflection
1	-.014	-.027	-.013	-.015	-.001
2	.010	.069	.059	.011	.001
3	.015	.095	.080	.018	.003
4	.018	.108	.090	.020	.002
5	.019	.111	.092	.021	.002
6	.041	.145	.104	.039	-.002
7	.061	.166	.105	.066	.005
8	.013	.071	.058	.016	.003
9	.010	.061	.051	.013	.003
10	.010	.049	.039	.012	.002
11	.006	.030	.024	.008	.002
12	-.008	-.064	-.056	-.008	.000

5.1 STRUCTURAL SHAKEDOWN TEST



DIAL INDICATORS IN POSITION



BUS LOADED TO 2.5 TIMES GVL
(5,700 LBS)

5.2 STRUCTURAL STRENGTH AND DISTORTION TESTS - STRUCTURAL DISTORTION

5.2-I. TEST OBJECTIVE

The objective of this test is to observe the operation of the bus subsystems when the bus is placed in a longitudinal twist simulating operation over a curb or through a pothole.

5.2-II. TEST DESCRIPTION

With the bus loaded to GVWR, each wheel of the bus will be raised (one at a time) to simulate operation over a curb and the following will be inspected:

1. Body
2. Windows
3. Doors
4. Roof vents
5. Special seating
6. Undercarriage
7. Engine
8. Service doors
9. Escape hatches
10. Steering mechanism

Each wheel will then be lowered (one at a time) to simulate operation through a pothole and the same items inspected.

5.2-III. DISCUSSION

The test sequence was repeated ten times. The first and last test is with all wheels level. The other eight tests are with each wheel 6 inches higher and 6 inches lower than the other three wheels.

All doors, windows, escape mechanisms, engine, steering and handicapped devices operated normally throughout the test. The undercarriage and body indicated no deficiencies. No water leakage was observed during the test. The results of this test are indicated on the following data forms.

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	■ before	□ after
Left front	□ 6 in higher	□ 6 in lower
Right front	□ 6 in higher	□ 6 in lower
Right rear	□ 6 in higher	□ 6 in lower
Left rear	□ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	■ 6 in higher	□ 6 in lower
Right front	□ 6 in higher	□ 6 in lower
Right rear	□ 6 in higher	□ 6 in lower
Left rear	□ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	□ 6 in higher	□ 6 in lower
Right front	■ 6 in higher	□ 6 in lower
Right rear	□ 6 in higher	□ 6 in lower
Left rear	□ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	□ 6 in higher	□ 6 in lower
Right front	□ 6 in higher	□ 6 in lower
Right rear	■ 6 in higher	□ 6 in lower
Left rear	□ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	□ 6 in higher	□ 6 in lower
Right front	□ 6 in higher	□ 6 in lower
Right rear	□ 6 in higher	□ 6 in lower
Left rear	■ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	□ 6 in higher	■ 6 in lower
Right front	□ 6 in higher	□ 6 in lower
Right rear	□ 6 in higher	□ 6 in lower
Left rear	□ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	□ 6 in higher	□ 6 in lower
Right front	□ 6 in higher	■6 in lower
Right rear	□ 6 in higher	□ 6 in lower
Left rear	□ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	□ 6 in higher	□ 6 in lower
Right front	□ 6 in higher	□ 6 in lower
Right rear	□ 6 in higher	■ 6 in lower
Left rear	□ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	□ 6 in higher	□ 6 in lower
Right front	□ 6 in higher	□ 6 in lower
Right rear	□ 6 in higher	□ 6 in lower
Left rear	□ 6 in higher	■ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	■ after
Left front	□ 6 in higher	□ 6 in lower
Right front	□ 6 in higher	□ 6 in lower
Right rear	□ 6 in higher	□ 6 in lower
Left rear	□ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

5.2 STRUCTURAL DISTORTION TEST



RIGHT FRONT WHEEL SIX INCHES HIGHER



LEFT REAR WHEEL SIX INCHES LOWER

5.3 STRUCTURAL STRENGTH AND DISTORTION TESTS - STATIC TOWING TEST

5.3-I. TEST OBJECTIVE

The objective of this test is to determine the characteristics of the bus towing mechanisms under static loading conditions.

5.3-II. TEST DESCRIPTION

Utilizing a load-distributing yoke, a hydraulic cylinder is used to apply a static tension load equal to 1.2 times the bus curb weight. The load will be applied to both the front and rear, if applicable, towing fixtures at an angle of 20 degrees with the longitudinal axis of the bus, first to one side then the other in the horizontal plane, and then upward and downward in the vertical plane. Any permanent deformation or damage to the tow eyes or adjoining structure will be recorded.

5.3-III. DISCUSSION

The test bus submitted for testing was not equipped with any type of tow eyes or tow hooks, therefore the Static Tow Test was not performed.

5.4 STRUCTURAL STRENGTH AND DISTORTION TESTS - DYNAMIC TOWING TEST

5.4-I. TEST OBJECTIVE

The objective of this test is to verify the integrity of the towing fixtures and determine the feasibility of towing the bus under manufacturer specified procedures.

5.4-II. TEST DESCRIPTION

This test requires the bus be towed at curb weight using the specified equipment and instructions provided by the manufacturer and a heavy-duty wrecker. The bus will be towed for 5 miles at a speed of 20 mph for each recommended towing configuration. After releasing the bus from the wrecker, the bus will be visually inspected for any structural damage or permanent deformation. All doors, windows and passenger escape mechanisms will be inspected for proper operation.

5.4-III. DISCUSSION

The bus was towed using a heavy-duty wrecker. The towing interface was accomplished by incorporating a hydraulic under lift. A front lift tow was performed. Rear towing is not recommended. No problems, deformation, or damage was noted during testing.

DYNAMIC TOWING TEST DATA FORM

Bus Number: 1609	Date: 7-28-16
Personnel: T.S. & E.D.	

Temperature (°F): 79	
Wind Direction: SSW	Wind Speed (mph): 1

Inspect tow equipment-bus interface.
Comments: A safe and adequate connection was made between the tow equipment and the bus.
Inspect tow equipment-wrecker interface.
Comments: A safe and adequate connection was made between the tow equipment and the wrecker.
Towing Comments: A front lift tow was performed incorporating a hydraulic under lift wrecker.
Description and location of any structural damage: None noted.
General Comments: No problems with the towing interface or towing procedures were encountered.

5.4 DYNAMIC TOWING TEST



TOWING INTERFACE



TEST BUS IN TOW

5.5 STRUCTURAL STRENGTH AND DISTORTION TESTS – JACKING TEST

5.5-I. TEST OBJECTIVE

The objective of this test is to inspect for damage due to the deflated tire, and determine the feasibility of jacking the bus with a portable hydraulic jack to a height sufficient to replace a deflated tire.

5.5-II. TEST DESCRIPTION

With the bus at curb weight, the tire(s) at one corner of the bus are replaced with deflated tire(s) of the appropriate type. A portable hydraulic floor jack is then positioned in a manner and location specified by the manufacturer and used to raise the bus to a height sufficient to provide 3-in clearance between the floor and an inflated tire. The deflated tire(s) are replaced with the original tire(s) and the jack is lowered. Any structural damage or permanent deformation is recorded on the test data sheet. This procedure is repeated for each corner of the bus.

5.5-III. DISCUSSION

The jack used for this test has a minimum height of 8.75 inches. During the deflated portion of the test, the jacking point clearances ranged from 6.1 inches to 13.9 inches. No deformation or damage was observed during testing. A complete listing of jacking point clearances is provided in the Jacking Test Data Form.

JACKING CLEARANCE SUMMARY

Condition	Frame Point Clearance
Front axle – one tire flat	6.1”
Rear axle – one tire flat	10.4”
Rear axle – two tires flat	8.9”

JACKING TEST DATA FORM

Bus Number: 1609	Date: 04-01-16
Personnel: E.D. & S.R.	Temperature (°F): 61

Record any permanent deformation or damage to bus as well as any difficulty encountered during jacking procedure.

Deflated Tire	Jacking Pad Clearance Body/Frame (in)	Jacking Pad Clearance Axle/Suspension (in)	Comments
Right front	8.2“ I 6.1“ D	10.2“ I 7.4“ D	Body & Axle
Left front	11.7“ I 9.1“ D	9.9“ I 7.3“ D	Body & Axle
Right rear—outside	11.9“ I 11.5“ D	14.2“ I 13.9“ D	Body & Suspension
Right rear—both	11.9“ I 9.6“ D	14.2“ I 12.4“ D	Body & Suspension
Left rear—outside	10.7“ I 10.4“ D	13.7“ I 13.5“ D	Body & Suspension
Left rear—both	10.7“ I 8.9“ D	13.7“ I 12.1“ D	Body & Suspension
Right middle or tag—outside	N/A	N/A	N/A
Right middle or tag—both	N/A	N/A	N/A
Left middle or tag—outside	N/A	N/A	N/A
Left middle or tag—both	N/A	N/A	N/A

Additional comments of any deformation or difficulty during jacking:

None noted.

5.6 STRUCTURAL STRENGTH AND DISTORTION TESTS - HOISTING TEST

5.6-I. TEST OBJECTIVE

The objective of this test is to determine possible damage or deformation caused by the jack/stands.

5.6-II. TEST DESCRIPTION

With the bus at curb weight, the front end of the bus is raised to a height sufficient to allow manufacturer-specified placement of jack stands under the axles or jacking pads independent of the hoist system. The bus will be checked for stability on the jack stands and for any damage to the jacking pads or bulkheads. The procedure is repeated for the tag axle and rear end of the bus. The procedure is then repeated for the front, tag axle and rear simultaneously.

5.6-III. DISCUSSION

The test was conducted using four posts of a six-post electric lift and standard 19 inch jack stands. The bus was hoisted from the front wheel, rear wheel, and then the front and rear wheels simultaneously and placed on jack stands.

The bus easily accommodated the placement of the vehicle lifts and jack stands and the procedure was performed without any instability noted.

HOISTING TEST DATA FORM

Bus Number: 1609	Date: 04-04-16
Personnel: E.D., S.R. & E.L.	Temperature (°F): 62

Comments of any structural damage to the jacking pads or axles while both the front wheels are supported by the jack stands:
None noted
Comments of any structural damage to the jacking pads or axles while both the rear wheels are supported by the jack stands:
None noted
Comments of any structural damage to the jacking pads or axles while both the tag axle wheels are supported by the jack stands:
N/A
Comments of any structural damage to the jacking pads or axles while both the front and rear wheels are supported by the jack stands:
None noted
Comments of any problems or interference placing wheel hoists under wheels:
None noted

5.7 STRUCTURAL DURABILITY TEST

5.7-I. TEST OBJECTIVE

The objective of this test is to perform an accelerated durability test that approximates up to 25 percent of the service life of the vehicle.

5.7-II. TEST DESCRIPTION

The test vehicle is driven a total of 5,050 miles; approximately 3,750 miles on the PSBRTF Durability Test Track and approximately 1,300 miscellaneous other miles. The test will be conducted with the bus operated under three different loading conditions. The first segment will consist of approximately 2,125 miles with the bus operated at GVW. The second segment will consist of approximately 1,300 miles with the bus operated at SLW. The remainder of the test, approximately 2,125 miles, will be conducted with the bus loaded to CW. If GVW exceeds the axle design weights, then the load will be adjusted to the axle design weights and the change will be recorded. All subsystems are run during these tests in their normal operating modes. All recommended manufacturers servicing is to be followed and noted on the vehicle maintainability log. Servicing items accelerated by the durability tests will be compressed by 10:1; all others will be done on a 1:1 mi/mi basis. Unscheduled breakdowns and repairs are recorded on the same log as are any unusual occurrences as noted by the driver. Once a week the test vehicle shall be washed down and thoroughly inspected for any signs of failure.

5.7-III. DISCUSSION

The Structural Durability Test was started on April 11, 2016 and was conducted until August 4, 2016. The first 2,125 miles were performed at a GVW of 10,290 lbs. and completed on May 10, 2016. This test bus is not designed to accommodate standing passengers; therefore, GVW and SLW are the same 10,290 lbs. The 1,300 mile SLW segment was performed at the same 10,290 lbs and completed on May 31, 2016. The final 2,125 mile segment was performed at a CW of 7,590 lbs and completed on August 4, 2016.

The following mileage summary presents the accumulation of miles during the Structural Durability Test. The driving schedule is included, showing the operating duty cycle. A detailed plan view of the Test Track Facility and Durability Test Track are attached for reference. Also, a durability element profile detail shows all the measurements of the different conditions. Finally, photographs illustrating some of the failures that were encountered during the Structural Durability Test are included.

Starcraft Bus #1609

MILEAGE DRIVEN/RECORDED FROM DRIVER'S LOGS

DATE	TOTAL DURABILITY TRACK	TOTAL OTHER MILES	TOTAL
04/11/16 TO 04/17/16	318.00	87.00	405.00
04/18/16 TO 04/24/16	523.00	22.00	545.00
04/25/16 TO 05/01/16	138.00	101.00	239.00
05/02/16 TO 05/08/16	456.00	116.00	572.00
05/09/16 TO 05/15/16	570.00	26.00	596.00
05/16/16 TO 05/22/16	82.00	70.00	152.00
05/26/16 TO 05/29/16	38.00	367.00	405.00
05/30/16 TO 06/05/16	244.00	39.00	283.00
06/06/16 TO 06/12/16	622.00	126.00	748.00
06/13/16 TO 06/19/16	287.00	60.00	347.00
06/20/16 TO 06/26/16	472.00	66.00	538.00
06/27/16 TO 07/03/16	0.00	88.00	88.00
07/04/16 TO 07/10/16	0.00	15.00	15.00
07/11/16 TO 07/17/16	0.00	0.00	0.00

Starcraft Bus #1609

MILEAGE DRIVEN/RECORDED FROM DRIVER'S LOGS

DATE	TOTAL DURABILITY TRACK	TOTAL OTHER MILES	TOTAL
07/18/16 TO 07/24/16	0.00	0.00	0.00
07/25/16 TO 07/31/16	0.00	0.00	0.00
08/01/16 TO 08/07/16	0.00	117.00	117.00
TOTAL	3750.00	1300.00	5050.00

Table 4. Driving Schedule for Bus Operation on the Durability Test Track.

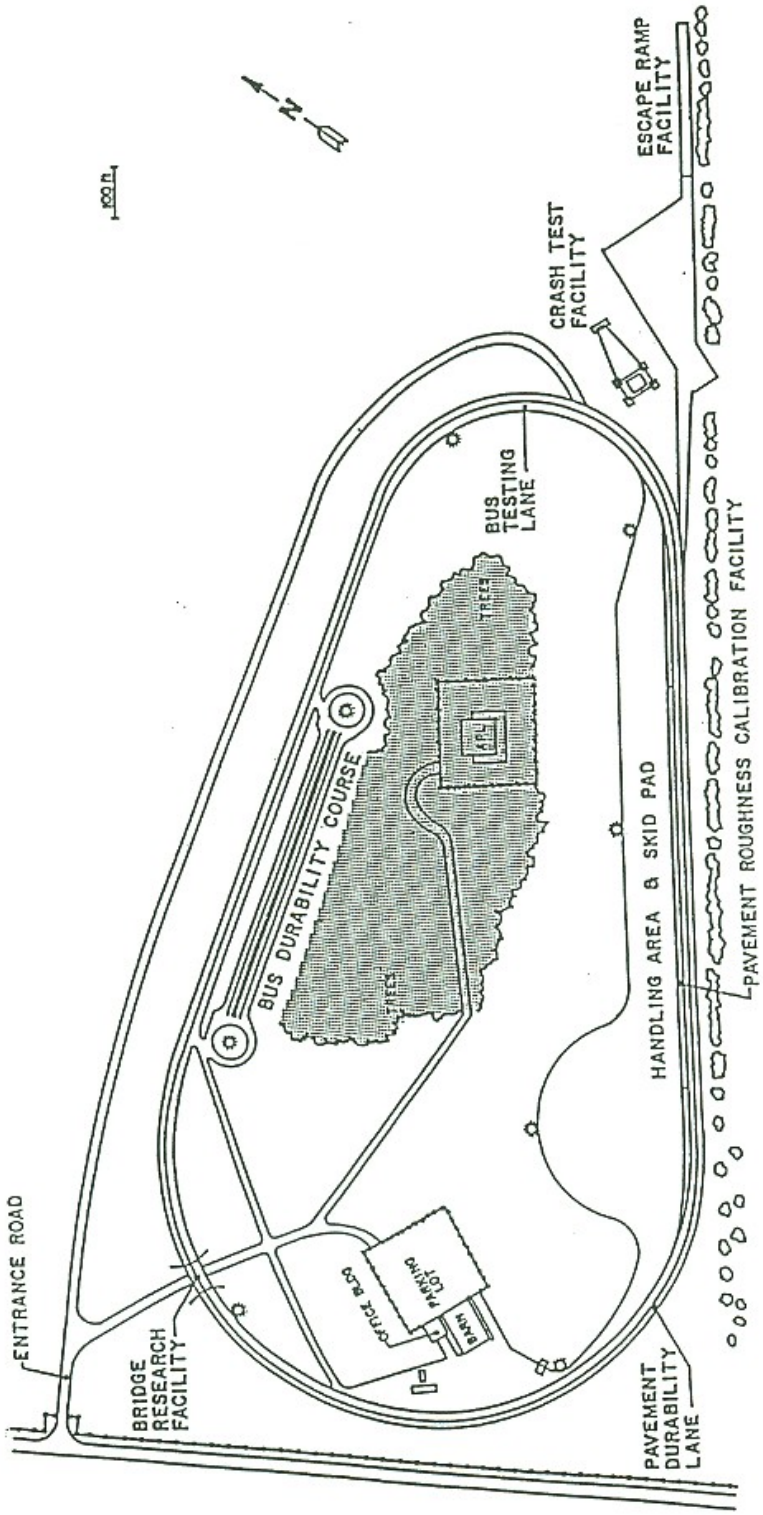
STANDARD OPERATING SCHEDULE

Monday through Friday

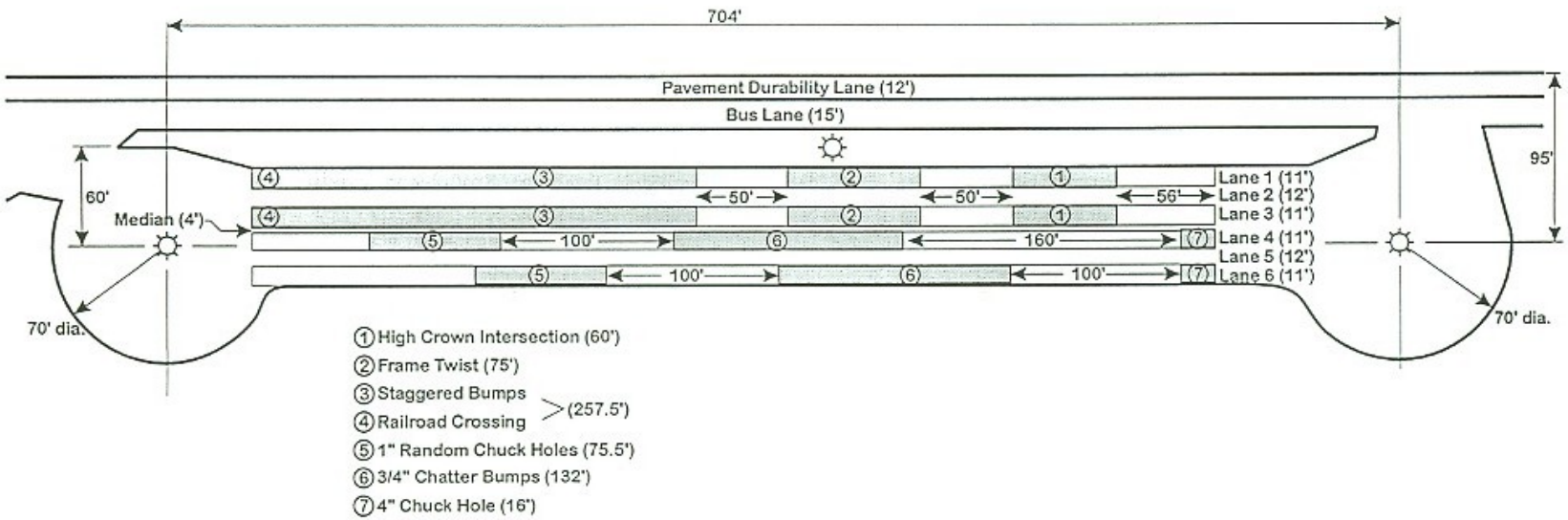
	HOUR	ACTION
Shift 1	midnight	D
	1:40 am	C
	1:50 am	B
	2:00 am	D
	3:35 am	C
	3:45 am	B
	4:05 am	D
	5:40 am	C
	5:50 am	B
	6:00 am	D
	7:40 am	C
	7:50 am	F
Shift 2	8:00 am	D
	9:40 am	C
	9:50 am	B
	10:00 am	D
	11:35 am	C
	11:45 am	B
	12:05 pm	D
	1:40 pm	C
	1:50 pm	B
	2:00 pm	D
	3:40 pm	C
	3:50 pm	F
Shift 3	4:00 pm	D
	5:40 pm	C
	5:50 pm	B
	6:00 pm	D
	7:40 pm	C
	7:50 pm	B
	8:05 pm	D
	9:40 pm	C
	9:50 pm	B
	10:00 pm	D
	11:40 pm	C
	11:50 pm	F

B---Break
C----Cycle all systems five times, visual inspection, driver's log entries
D----Drive bus as specified by procedure
F----Fuel bus, complete driver's log shift entries

"PLAN VIEW OF PENN STATE BUS TESTING AND RESEARCH FACILITY"



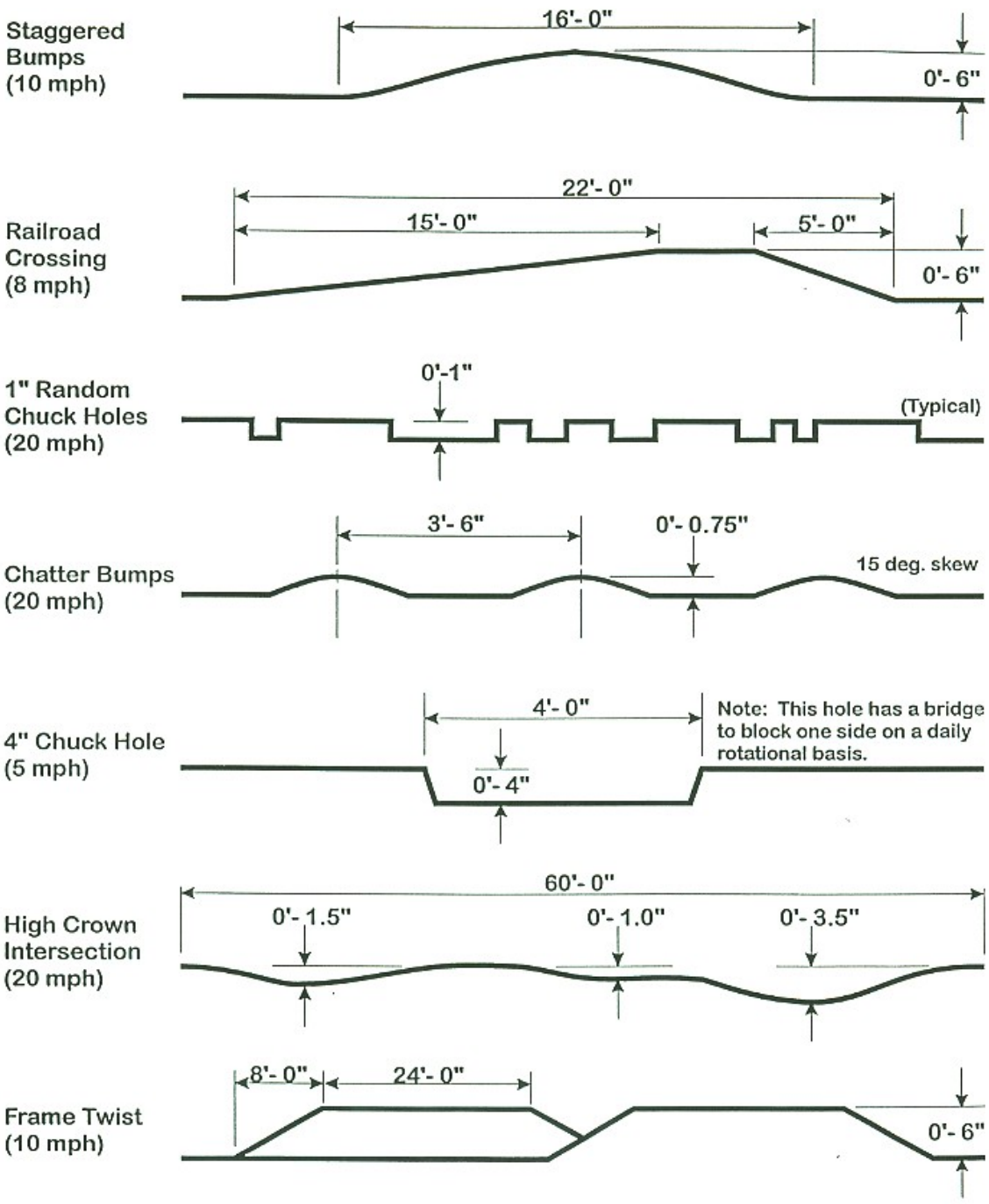
BUS TESTING AND RESEARCH TEST TRACK
UNIVERSITY PARK, PA



Plan View

Vehicle Durability Test Track

The Pennsylvania Transportation Institute
Penn State



Durability Element Profiles

The Pennsylvania Transportation Institute
Penn State

(Page 1 of 1)
UNSCHEDULED MAINTENANCE
STARCRAFT #1609

DATE	TEST MILES	SERVICE	ACTIVITY	MAN HOURS	DOWN TIME
04-25-16	1,029	The right side, outside rear view mirror fasteners are locse.	Fasteners tightened.	1.00	1.00
04-29-16	1,029	The right rear, lower bolt is broken on the sway bar link. Parts ordered.	Both rear sway bar links replaced.	4.00	88.00
05-11-16	2,138	The exhaust tailpipe hanger is broken.	Exhaust tailpipe hanger replaced.	1.00	1.00
06-03-16	3,096	The right side sway bar bolt is broken on the rear sway bar.	Broken bolt replaced.	1.00	1.00
06-14-16	4,292	The rear bumper mounting brackets are broken.	Mounting brackets welded/repaired.	4.00	4.00
06-22-16	4,292	The rear sway bar link mounting holes are egged out. Parts ordered.	Rear sway bar and links replaced.	4.00	136.00



BROKEN RIGHT REAR SWAY BAR BOLT
(1,029 TEST MILES)



BROKEN RIGHT REAR SWAY BAR BOLT
(3,096 TEST MILES)

UNSCHEDULED MAINTENANCE CONT.



BROKEN REAR BUMPER BRACKET
(4,292 TEST MILES)



REAR SWAY BAR MOUNTING HOLES EGGED OUT
(4,292 TEST MILES)

6. FUEL ECONOMY TEST - A FUEL CONSUMPTION TEST USING AN APPROPRIATE OPERATING CYCLE

6-I. TEST OBJECTIVE

The objective of this test is to provide accurate comparable fuel consumption data on transit buses produced by different manufacturers. This fuel economy test bears no relation to the calculations done by the Environmental Protection Agency (EPA) to determine levels for the Corporate Average Fuel Economy Program. EPA's calculations are based on tests conducted under laboratory conditions intended to simulate city and highway driving. This fuel economy test, as designated here, is a measurement of the fuel expended by a vehicle traveling a specified test loop under specified operating conditions. The results of this test will not represent actual mileage but will provide data that can be used by recipients to compare buses tested by this procedure.

6-II. TEST DESCRIPTION

This test requires operation of the bus over a course based on the Transit Coach Operating Duty Cycle (ADB Cycle) at seated load weight using a procedure based on the Fuel Economy Measurement Test (Engineering Type) For Trucks and Buses: SAE 1376 July 82. The procedure has been modified by elimination of the control vehicle and by modifications as described below. The inherent uncertainty and expense of utilizing a control vehicle over the operating life of the facility is impractical.

The fuel economy test will be performed as soon as possible (weather permitting) after the completion of the GVW portion of the structural durability test. It will be conducted on the bus test lane at the Penn State Test Facility. Signs are erected at carefully measured points which delineate the test course. A test run will comprise 3 CBD phases, 2 Arterial phases, and 1 Commuter phase. An electronic fuel measuring system will indicate the amount of fuel consumed during each phase of the test. The test runs will be repeated until there are at least two runs in both the clockwise and counterclockwise directions in which the fuel consumed for each run is within ± 4 percent of the average total fuel used over the 4 runs. A 20-minute idle consumption test is performed just prior to and immediately after the driven portion of the fuel economy test. The amount of fuel consumed while operating at normal/low idle is recorded on the Fuel Economy Data Form. This set of four valid runs along with idle consumption data comprise a valid test.

The test procedure is the ADB cycle with the following four modifications:

1. The ADB cycle is structured as a set number of miles in a fixed time in the following order: CBD, Arterial, CBD, Arterial, CBD, and Commuter. A separate idle fuel consumption measurement is performed at the beginning and end of the fuel economy test. This phase sequence permits the reporting of fuel consumption for each of these phases separately, making the data more useful to bus manufacturers and transit properties.

2. The operating profile for testing purposes shall consist of simulated transit type service at seated load weight. The three test phases (figure 6-1) are: a central business district (CBD) phase of 2 miles with 7 stops per mile and a top speed of 20 mph; an arterial phase of 2 miles with 2 stops per mile and a top speed of 40 mph; and a commuter phase of 4 miles with 1 stop and a maximum speed of 40 mph. At each designated stop the bus will remain stationary for seven seconds. During this time, the passenger doors shall be opened and closed.

3. The individual ADB phases remain unaltered with the exception that 1 mile has been changed to 1 lap on the Penn State Test Track. One lap is equal to 5,042 feet. This change is accommodated by adjusting the cruise distance and time.

4. The acceleration profile, for practical purposes and to achieve better repeatability, has been changed to "full throttle acceleration to cruise speed".

Several changes were made to the Fuel Economy Measurement Test (Engineering Type) For Trucks and Buses: SAE 1376 July 82:

1. Sections 1.1, and 1.2 only apply to diesel, gasoline, methanol, and any other fuel in the liquid state (excluding cryogenic fuels).

1.1 SAE 1376 July 82 requires the use of at least a 16-gal fuel tank. Such a fuel tank when full would weigh approximately 160 lb. It is judged that a 12-gal tank weighing approximately 120 lb will be sufficient for this test and much easier for the technician and test personnel to handle.

1.2 SAE 1376 July 82 mentions the use of a mechanical scale or a flowmeter system. This test procedure uses a load cell readout combination that provides an accuracy of 0.5 percent in weight and permits on-board weighing of the gravimetric tanks at the end of each phase. This modification permits the determination of a fuel economy value for each phase as well as the overall cycle.

2. Section 2.1 applies to compressed natural gas (CNG), liquefied natural gas (LNG), cryogenic fuels, and other fuels in the vapor state.

2.1 A laminar type flowmeter will be used to determine the fuel consumption. The pressure and temperature across the flow element will be monitored by the flow computer. The flow computer will use this data to calculate the gas flow rate. The flow computer will also display the flow rate (scfm) as well as the total fuel used (scf). The total fuel used (scf) for each phase will be recorded on the Fuel Economy Data Form.

3. Use both Sections 1 and 2 for dual fuel systems.

FUEL ECONOMY CALCULATION PROCEDURE

A. For diesel, gasoline, methanol and fuels in the liquid state.

The reported fuel economy is based on the following: measured test quantities--distance traveled (miles) and fuel consumed (pounds); standard reference values--density of water at 60EF (8.3373 lbs/gal) and volumetric heating value of standard fuel; and test fuel specific gravity (unitless) and volumetric heating value (BTU/gal). These combine to give a fuel economy in miles per gallon (mpg) which is corrected to a standard gallon of fuel referenced to water at 60EF. This eliminates fluctuations in fuel economy due to fluctuations in fuel quality. This calculation has been programmed into a computer and the data processing is performed automatically.

The fuel economy correction consists of three steps:

1.) Divide the number of miles of the phase by the number of pounds of fuel consumed

phase	miles per phase	total miles per run
CBD	1.9097	5.7291
ART	1.9097	3.8193
COM	3.8193	3.8193

$FEo_{mi/lb}$ = Observed fuel economy = $\frac{\text{miles}}{\text{lb of fuel}}$

2.) Convert the observed fuel economy to miles per gallon [mpg] by multiplying by the specific gravity of the test fuel Gs (referred to water) at 60°F and multiply by the density of water at 60°F

$$\mathbf{FEo_{mpg}} = \mathbf{FEc_{mi/lb}} \times Gs \times Gw$$

where **Gs** = Specific gravity of test fuel at 60°F (referred to water)
Gw = 8.3373 lb/gal

3.) Correct to a standard gallon of fuel by dividing by the volumetric heating value of the test fuel (H) and multiplying by the volumetric heating value of standard reference fuel (Q). Both heating values must have the same units.

$$\mathbf{FEc} = \mathbf{FEo_{mpg}} \times \frac{Q}{H}$$

where

H = Volumetric heating value of test fuel [BTU/gal]
Q = Volumetric heating value of standard reference fuel

Combining steps 1-3 yields

$$\Rightarrow \quad FEc = \frac{\text{miles}}{\text{lbs}} \times (Gs \times Gw) \times \frac{Q}{H}$$

4.) Covert the fuel economy from mpg to an energy equivalent of miles per BTU. Since the number would be extremely small in magnitude, the energy equivalent will be represented as miles/BTUx10^6.

Eq = Energy equivalent of converting mpg to mile/BTUx10^6.

$$Eq = ((mpg)/(H))x10^6$$

B. CNG, LNG, cryogenic and other fuels in the vapor state.

The reported fuel economy is based on the following: measured test quantities--distance traveled (miles) and fuel consumed (scf); density of test fuel, and volumetric heating value (BTU/lb) of test fuel at standard conditions (P=14.73 psia and T=60°F). These combine to give a fuel economy in miles per lb. The energy equivalent (mile/BTUx10^6) will also be provided so that the results can be compared to buses that use other fuels.

1.) Divide the number of miles of the phase by the number of standard cubic feet (scf) of fuel consumed.

phase	miles per phase	total miles per run
CBD	1.9097	5.7291
ART	1.9097	3.8193
COM	3.8193	3.8193

$$\mathbf{FEo_{mi/scf}} = \text{Observed fuel economy} = \frac{\text{miles}}{\text{scf of fuel}}$$

2.) Convert the observed fuel economy to miles per lb by dividing FEo by the density of the test fuel at standard conditions (Lb/ft^3).

Note: The density of test fuel must be determined at standard conditions as described above. If the density is not defined at the above standard conditions, then a correction will be needed before the fuel economy can be calculated.

$$\mathbf{FEo_{mi/lb}} = FEo / Gm$$

where Gm = Density of test fuel at standard conditions

3.) Convert the observed fuel economy (FEomi/lb) to an energy equivalent of (miles/BTUx10^6) by dividing the observed fuel economy (FEomi/lb) by the heating value of the test fuel at standard conditions.

$$Eq = ((FEomi/lb)/H)x10^6$$

where

Eq = Energy equivalent of miles/lb to mile/BTUx10^6
H = Volumetric heating value of test fuel at standard conditions

6-III. DISCUSSION

This is a comparative test of fuel economy using gasoline fuel with a heating value of 19,303.0 btu/lb. The driving cycle consists of Central Business District (CBD), Arterial (ART), and Commuter (COM) phases as described in 6-II. The fuel consumption for each driving cycle and for idle is measured separately. The results are corrected to a reference fuel with a volumetric heating value of 126,700.0 btu/gal.

An extensive pretest maintenance check is made including the replacement of all lubrication fluids. The details of the pretest maintenance are given in the first three Pretest Maintenance Forms. The fourth sheet shows the Pretest Inspection. The next four Fuel Economy Forms provide the data from the four test runs. Finally, the summary sheet provides the average fuel consumption. The overall average is based on total fuel and total mileage for each phase. The overall average fuel consumption values were; CBD – 9.94 mpg, ART – 10.03 mpg, and COM – 17.72 mpg. Average fuel consumption at idle was 0.31 gph.

FUEL ECONOMY PRE-TEST MAINTENANCE FORM

Bus Number: 1609	Date: 06-29-16	SLW (lbs): 10,290
Personnel: T.S., P.D., S.R. & E.D.		

FUEL SYSTEM	OK
Install fuel measurement system	✓
Replace fuel filter	✓
Check for fuel leaks	✓
Specify fuel type (refer to fuel analysis)	Gasoline
Remarks: None noted	
BRAKES/TIRES	OK
Inspect hoses	✓
Inspect brakes	✓
Relube wheel bearings	✓
Check tire inflation pressures (mfg. specs.)	✓
Check tire wear (less than 50%)	✓
Remarks: None noted	
COOLING SYSTEM	OK
Check hoses and connections	✓
Check system for coolant leaks	✓
Remarks: None noted	

FUEL ECONOMY PRE-TEST MAINTENANCE FORM

Bus Number: 1609	Date: 06-29-16
Personnel: T.S., P.D., S.R. & E.D.	

ELECTRICAL SYSTEMS	OK
Check battery	✓
Inspect wiring	✓
Inspect terminals	✓
Check lighting	✓
Remarks: None noted	

DRIVE SYSTEM	OK
Drain transmission fluid	✓
Replace filter/gasket	✓
Check hoses and connections	✓
Replace transmission fluid	✓
Check for fluid leaks	✓
Remarks: None Noted	

LUBRICATION	OK
Drain crankcase oil	✓
Replace filters	✓
Replace crankcase oil	✓
Check for oil leaks	✓
Check oil level	✓
Lube all chassis grease fittings	✓
Lube universal joints	✓
Replace differential lube including axles	N/A
Remarks: None noted	

FUEL ECONOMY PRE-TEST MAINTENANCE FORM

Bus Number: 1609	Date: 06-29-16
Personnel: T.S., P.D., S.R. & E.D.	

EXHAUST/EMISSION SYSTEM	OK
Check for exhaust leaks	✓
Remarks: None noted	
ENGINE	OK
Replace air filter	✓
Inspect air compressor and air system	N/A
Inspect vacuum system, if applicable	N/A
Check and adjust all drive belts	✓
Check cold start assist, if applicable	N/A
Remarks: None noted	
STEERING SYSTEM	OK
Check power steering hoses and connectors	✓
Service fluid level	✓
Check power steering operation	✓
Remarks: None noted	
	OK
Ballast bus to seated load weight	✓
TEST DRIVE	OK
Check brake operation	✓
Check transmission operation	✓
Remarks: None noted	

FUEL ECONOMY PRE-TEST INSPECTION FORM

Bus Number: 1609	Date: 06-30-16
Personnel: S.R. & T.S.	

PRE WARM-UP	If OK, Initial
Fuel Economy Pre-Test Maintenance Form is complete	S.R.
Cold tire pressure (psi): Front 67 Middle N/A Rear 62	S.R./M.H.
Engine oil level	S.R./M.H.
Engine coolant level	S.R./M.H.
Interior and exterior lights on, evaporator fan on	S.R./M.H.
Fuel economy instrumentation installed and working properly.	S.R.
Fuel line -- no leaks or kinks	S.R.
Speed measuring system installed on bus. Speed indicator installed in front of bus and accessible to TECH and Driver.	S.R.
Bus is loaded to SLW	S.R.
WARM-UP	**If OK, Initial**
Bus driven for at least one hour warm-up	S.R./M.H.
No extensive or black smoke from exhaust	S.R./M.H.
POST WARM-UP	**If OK, Initial**
Warm tire pressure (psi): Front 80 Middle N/A Rear 75	S.R.
Environmental conditions Average wind speed <12 mph and maximum gusts <15 mph Ambient temperature between 30°F(-1C°) and 90°F(32°C) Track surface is dry Track is free of extraneous material and clear of interfering traffic	S.R.

FUEL ECONOMY DATA FORM (Liquid Fuels)

Bus Number: 1609	Manufacturer: Starcraft	Date: 6-30-16
Run Number: 1	Personnel: S.R., T.S. & M.H.	
Test Direction: □CW or ■CCW	Temperature (°F): 68	Humidity (%): 53
SLW (lbs): 10,290	Wind Speed (mph) & Direction: 5 S	Barometric Pressure (in.Hg): 30.10

Cycle Type	Time (min:sec)		Cycle Time (min:sec)	Fuel Temperature (°C)	Flow Meter Reading (gals)		Fuel Used (gals)
	Start	Finish		Start	Start	Finish	
CBD #1	0	8:46	8:46	26.9	0	.198	.198
ART #1	0	4:04	4:04	26.8	0	.197	.197
CBD #2	0	8:39	8:39	27.5	0	.199	.199
ART #2	0	4:00	4:00	27.0	0	.197	.197
CBD #3	0	8:32	8:32	26.5	0	.199	.199
COMMUTER	0	5:59	5:59	25.4	0	.227	.227
						Total Fuel =	1.217 gals

20 minute idle : Total Fuel Used = .106 gals

Heating Value = 19,303 BTU/LB

Comments: None noted

FUEL ECONOMY DATA FORM (Liquid Fuels)

Bus Number: 1609	Manufacturer: Starcraft	Date: 6-30-16
Run Number: 2	Personnel: S.R., T.S. & M.H.	
Test Direction: ■CW or □CCW	Temperature (°F): 72	Humidity (%): 53
SLW (lbs): 10,290	Wind Speed (mph) & Direction: 6 N	Barometric Pressure (in.Hg): 30.10

Cycle Type	Time (min:sec)		Cycle Time (min:sec)	Fuel Temperature (°C)	Flow Meter Reading (gals)		Fuel Used (gals)
	Start	Finish		Start	Start	Finish	
CBD #1	0	8:42	8:42	27.8	0	.199	.199
ART #1	0	4:01	4:01	27.9	0	.201	.201
CBD #2	0	8:39	8:39	29.9	0	.202	.202
ART #2	0	4:02	4:02	30.2	0	.201	.201
CBD #3	0	8:35	8:35	30.9	0	.202	.202
COMMUTER	0	6:01	6:01	32.0	0	.229	.229
							Total Fuel = 1.234 gals

20 minute idle : Total Fuel Used = N/A gals

Heating Value = 19,303 BTU/LB

Comments: None noted

FUEL ECONOMY DATA FORM (Liquid Fuels)

Bus Number: 1609	Manufacturer: Starcraft	Date: 6-30-16
Run Number: 3	Personnel: S.R., T.S. & M.H.	
Test Direction: □CW or ■CCW	Temperature (°F): 77	Humidity (%): 43
SLW (lbs): 10,290	Wind Speed (mph) & Direction: 4 N	Barometric Pressure (in.Hg): 30.10

Cycle Type	Time (min:sec)		Cycle Time (min:sec)	Fuel Temperature (°C)	Flow Meter Reading (gals)		Fuel Used (gals)
	Start	Finish		Start	Start	Finish	
CBD #1	0	8:34	8:34	32.7	0	.203	.203
ART #1	0	4:02	4:02	28.2	0	.203	.203
CBD #2	0	8:33	8:33	29.3	0	.205	.205
ART #2	0	4:02	4:02	28.6	0	.201	.201
CBD #3	0	8:34	8:34	30.4	0	.204	.204
COMMUTER	0	5:59	5:59	28.4	0	.234	.234
						Total Fuel = 1.250 gals	

20 minute idle : Total Fuel Used = N/A gals

Heating Value = 19,303 BTU/LB

Comments: None noted

FUEL ECONOMY DATA FORM (Liquid Fuels)

Page 4 of 4

Bus Number: 1609	Manufacturer: Starcraft	Date: 6-30-16
Run Number: 4	Personnel: S.R., T.S. & M.H.	
Test Direction: ■CW or □CCW	Temperature (°F): 80	Humidity (%): 42
SLW (lbs): 10,290	Wind Speed (mph) & Direction: Calm	Barometric Pressure (in.Hg): 30.10

Cycle Type	Time (min:sec)		Cycle Time (min:sec)	Fuel Temperature (°C)	Flow Meter Reading (gals)		Fuel Used (gals)
	Start	Finish		Start	Start	Finish	
CBD #1	0	8:42	8:42	31.5	0	.206	.206
ART #1	0	4:00	4:00	32.9	0	.202	.202
CBD #2	0	8:33	8:33	32.9	0	.202	.202
ART #2	0	4:00	4:00	33.0	0	.197	.197
CBD #3	0	8:41	8:41	33.8	0	.201	.201
COMMUTER	0	6:02	6:02	33.3	0	.216	.216
							Total Fuel = 1.224 gals

20 minute idle : Total Fuel Used = .109 gals

Heating Value = 19,303 BTU/LB

Comments: None noted

FUEL ECONOMY SUMMARY SHEET

BUS MANUFACTURER: Starcraft BUS NUMBER: 1609
BUS MODEL : Starlite Transit TEST DATE : 06/30/16

FUEL TYPE : GASOLINE
SP. GRAVITY : .7382
HEATING VALUE : 19303.00 BTU/Lb
FUEL TEMPERATURE : 86.00 deg F
Standard Conditions: 60 deg F and 14.7 psi
Density of Water : 8.3373 lb/gallon at 60 deg F

CYCLE	TOTAL FUEL USED(GAL)	TOTAL MILES	FUEL ECONOMY MPG(Measured)	FUEL ECONOMY MPG (Corrected)
Run #1, CCW				
CBD	.596	5.73	9.614	10.09
ART	.394	3.82	9.695	10.18
COM	.227	3.82	16.828	17.67
TOTAL	1.217	13.37	10.986	11.53
Run #2, CW				
CBD	.603	5.73	9.502	9.98
ART	.402	3.82	9.502	9.98
COM	.229	3.82	16.681	17.51
TOTAL	1.234	13.37	10.835	11.37
Run #3, CCW				
CBD	.612	5.73	9.363	9.83
ART	.404	3.82	9.455	9.93
COM	.234	3.82	16.325	17.14
TOTAL	1.250	13.37	10.696	11.23
Run #4, CW				
CBD	.609	5.73	9.409	9.88
ART	.399	3.82	9.574	10.05
COM	.216	3.82	17.685	18.57
TOTAL	1.224	13.37	10.923	11.47

IDLE CONSUMPTION (MEASURED)

First 20 Minutes Data: .11GAL Last 20 Minutes Data: .11GAL
Average Idle Consumption : .32GAL/Hr

RUN CONSISTENCY: % Difference from overall average of total fuel used

Run 1: 1.2 Run 2: -.2 Run 3: -1.5 Run 4: .6

SUMMARY (CORRECTED VALUES)

Average Idle Consumption : .31 G/Hr
Average CBD Phase Consumption : 9.94 MPG
Average Arterial Phase Consumption: 10.03 MPG
Average Commuter Phase Consumption: 17.72 MPG
Overall Average Fuel Consumption : 11.40 MPG
Overall Average Fuel Consumption : 95.97 Miles/ Million BTU

7. NOISE

7.1 INTERIOR NOISE AND VIBRATION TESTS

7.1-I. TEST OBJECTIVE

The objective of these tests is to measure and record interior noise levels and check for audible vibration under various operating conditions.

7.1-II. TEST DESCRIPTION

During this series of tests, the interior noise level will be measured at several locations with the bus operating under the following three conditions:

1. With the bus stationary, a white noise generating system shall provide a uniform sound pressure level equal to 80 dB(A) on the left, exterior side of the bus. The engine and all accessories will be switched off and all openings including doors and windows will be closed. This test will be performed at the Test Track Facility.

2. The bus accelerating at full throttle from a standing start to 35 mph on a level pavement. All openings will be closed and all accessories will be operating during the test. This test will be performed on the track at the Test Track Facility.

3. The bus will be operated at various speeds from 0 to 55 mph with and without the air conditioning and accessories on. Any audible vibration or rattles will be noted. This test will be performed on the test segment between the Test Track and the Bus Testing Center.

All tests will be performed in an area free from extraneous sound-making sources or reflecting surfaces. The ambient sound level as well as the surrounding weather conditions will be recorded in the test data.

7.1-III. DISCUSSION

This test is performed in three parts. The first part exposes the exterior of the vehicle to 80.0 dB(A) on the left side of the bus and the noise transmitted to the interior is measured. The overall average of the six measurements was 45.9 dB(A); ranging from 46.5 dB(A) at the front passenger seats and middle speaker to 45.1 dB(A) at the rear passenger seats. The interior ambient noise level for this test was < 30.0 dB(A).

The second test measures interior noise during acceleration from 0 to 35 mph. This noise level ranged from 78.6 dB(A) at the rear passenger seats to 84.5 dB(A) at the driver's seat. The overall average was 81.5 dB(A). The interior ambient noise level for this test was < 30.0 dB(A).

The third part of the test is to listen for resonant vibrations, rattles, and other noise sources while operating over the road. No vibrations or rattles were noted.

INTERIOR NOISE TEST DATA FORM
Test Condition 1: 80 dB(A) Stationary White Noise

Bus Number: 1609	Date: 7-26-16
Personnel: T.S., S.R. & E.D.	
Temperature (°F): 78	Humidity (%): 71
Wind Speed (mph): 4	Wind Direction: SSW
Barometric Pressure (in.Hg): 30.10	
Initial Sound Level Meter Calibration: 93.7 dB(A)	
Interior Ambient Noise Level dB(A): < 30.0	Exterior Ambient Noise Level dB(A): 37.3
Microphone Height During Testing (in): 47.5	
Initial Reading at Bus: 80.7 dB(A)	Final Reading at Bus: 80.6 dB(A)

Reading Location	Measured Sound Level dB(A)
Driver's Seat	46.0
Front Passenger Seats	46.5
In Line with Front Speaker	46.0
In Line with Middle Speaker	46.5
In Line with Rear Speaker	45.5
Rear Passenger Seats	45.1

Final Sound Level Meter Calibration: 93.8 dB(A)

Comments: None noted.

INTERIOR NOISE TEST DATA FORM
Test Condition 2: 0 to 35 mph Acceleration Test

Bus Number: 1609	Date: 05-17-16
Personnel: T.S., T.G. & C.S.	
Temperature (°F): 66	Humidity (%): 48
Wind Speed (mph): 6	Wind Direction: SSW
Barometric Pressure (in.Hg): 28.89	
Initial Sound Level Meter Calibration: 93.8 dB(A)	
Interior Ambient Noise Level dB(A): < 30	Exterior Ambient Noise Level dB(A): 41.5
Microphone Height During Testing (in): 47	

Reading Location	Measured Sound Level dB(A)
Driver's Seat	84.5
Front Passenger Seats	81.0
Middle Passenger Seats	82.0
Rear Passenger Seats	78.6

Final Sound Level Meter Calibration: 93.7 dB(A)

Comments: None noted

INTERIOR NOISE TEST DATA FORM
Test Condition 3: Audible Vibration Test

Bus Number: 1609	Date: 05-17-16
Personnel: T.G., T.S. & C.S.	
Temperature (°F): 69	

Describe the following possible sources of noise and give the relative location on the bus.

Source of Noise	Location	Description of Noise
Engine and Accessories	None	N/A
Windows and Doors	None	N/A
Seats and Wheel Chair lifts	None	N/A
Other	None	N/A

Comment on any other vibration or noise source which may have occurred
that is not described above: None
Comments: None

7.1 INTERIOR NOISE TEST



TEST BUS SET-UP FOR 80 dB(A)
INTERIOR NOISE TEST

7.2 EXTERIOR NOISE TESTS

7.2-I. TEST OBJECTIVE

The objective of this test is to record exterior noise levels when a bus is operated under various conditions.

7.2-II. TEST DESCRIPTION

In the exterior noise tests, the bus will be operated at a SLW in three different conditions using a smooth, straight and level roadway:

1. Accelerating at full throttle from a constant speed at or below 35 mph and just prior to transmission up shift.
2. Accelerating at full throttle from standstill.
3. Stationary, with the engine at low idle, high idle, and wide open throttle.

In addition, the buses will be tested with and without the air conditioning and all accessories operating. The exterior noise levels will be recorded.

The test site is at the PSBRTF and the test procedures will be in accordance with SAE Standards SAE J366b, Exterior Sound Level for Heavy Trucks and Buses. The test site is an open space free of large reflecting surfaces. A noise meter placed at a specified location outside the bus will measure the noise level.

During the test, special attention should be paid to:

1. The test site characteristics regarding parked vehicles, signboards, buildings, or other sound-reflecting surfaces
2. Proper usage of all test equipment including set-up and calibration
3. The ambient sound level

7.2-III. DISCUSSION

The Exterior Noise Test determines the noise level generated by the vehicle under different driving conditions and at stationary low and high idle, with and without air conditioning and accessories operating. The test site is a large, level, bituminous paved area with no reflecting surfaces nearby.

With an exterior ambient noise level of 41.4 dB(A), the average test result obtained while accelerating from a constant speed was 74.8 dB(A) on the right side and 76.0 dB(A) on the left side.

When accelerating from a standstill with an exterior ambient noise level of 44.1 dB(A), the average of the results obtained were 70.7 dB(A) on the right side and 74.2 dB(A) on the left side.

With the vehicle stationary and the engine, accessories, and air conditioning on, the measurements averaged 55.7 dB(A) at low idle and 66.3 dB(A) at wide open throttle. With the accessories and air conditioning off, the readings averaged 14.0 dB(A) lower at low idle and 0.9 dB(A) lower at wide open throttle. The exterior ambient noise level measured during this test was 33.7 dB(A). Note: This test bus is not equipped with a high idle mode.

EXTERIOR NOISE TEST DATA FORM
Accelerating from Constant Speed

Bus Number: 1609	Date: 05-17-16
Personnel: T.G., T.S. & C.S.	
Temperature (°F): 69	Humidity (%): 48
Wind Speed (mph): 2	Wind Direction: Variable
Barometric Pressure (in.Hg): 28.87	

Verify that microphone height is 4 feet, wind speed is less than 12 mph and ambient temperature is between 30°F and 90°F: ■

Initial Sound Level Meter Calibration: 93.8 dB(A)

Exterior Ambient Noise Level: 41.4 dB(A)

Accelerating from Constant Speed Curb (Right) Side		Accelerating from Constant Speed Street (Left) Side	
Run #	Measured Noise Level dB(A)	Run #	Measured Noise Level dB(A)
1	75.1	1	75.3
2	74.5	2	74.3
3	73.5	3	75.5
4	74.0	4	75.2
5	74.2	5	76.4
6	N/A	6	N/A
7	N/A	7	N/A
8	N/A	8	N/A
9	N/A	9	N/A
10	N/A	10	N/A
Average of two highest actual noise levels = 74.8 dB(A)		Average of two highest actual noise levels = 76.0 dB(A)	

Final Sound Level Meter Calibration Check: 93.7 dB(A)

Comments: None noted

EXTERIOR NOISE TEST DATA FORM
Accelerating from Standstill

Bus Number: 1609	Date: 05-17-16
Personnel: T.G., T.S. & C.S.	
Temperature (°F): 66	Humidity (%): 48
Wind Speed (mph): 3	Wind Direction: Variable
Barometric Pressure (in.Hg): 28.87	

Verify that microphone height is 4 feet, wind speed is less than 12 mph and ambient temperature is between 30°F and 90°F: ■

Initial Sound Level Meter Calibration: 93.8 dB(A)

Exterior Ambient Noise Level: 44.1 dB(A)

Accelerating from Standstill Curb (Right) Side		Accelerating from Standstill Street (Left) Side	
Run #	Measured Noise Level dB(A)	Run #	Measured Noise Level dB(A)
1	70.6	1	74.0
2	70.5	2	72.4
3	70.1	3	74.3
4	70.7	4	73.6
5	70.8	5	72.8
6	N/A	6	N/A
7	N/A	7	N/A
8	N/A	8	N/A
9	N/A	9	N/A
10	N/A	10	N/A
Average of two highest actual noise levels = 70.7 dB(A)		Average of two highest actual noise levels = 74.2 dB(A)	

Final Sound Level Meter Calibration Check: 93.7 dB(A)

Comments: None noted

EXTERIOR NOISE TEST DATA FORM
Stationary

Bus Number: 1609	Date: 05-17-16
Personnel: T.G., T.S. & C.S.	
Temperature (°F): 69	Humidity (%): 48
Wind Speed (mph): 5	Wind Direction: Variable
Barometric Pressure (in.Hg): 28.86	
Initial Sound Level Meter Calibration: 93.8 dB(A)	
Exterior Ambient Noise Level: 33.7 dB(A)	

Accessories and Air Conditioning ON

Throttle Position	Engine RPM	Curb (Right) Side dB(A)	Street (Left) Side dB(A)
		Measured	Measured
Low Idle	650	51.8	59.5
High Idle	N/A	N/A	N/A
Wide Open Throttle	4,000	65.4	67.2

Accessories and Air Conditioning OFF

Throttle Position	Engine RPM	Curb (Right) Side dB(A)	Street (Left) Side dB(A)
		Measured	Measured
Low Idle	650	41.4	42.0
High Idle	N/A	N/A	N/A
Wide Open Throttle	4,000	65.2	65.5

Final Sound Level Meter Calibration Check: 93.7 dB(A)

Comments: None noted

7.2 EXTERIOR NOISE TESTS



TEST BUS UNDERGOING
EXTERIOR NOISE TESTS



8. EMISSIONS TEST – DYNAMOMETER-BASED EMISSIONS TEST USING TRANSIT DRIVING CYCLES

8-I. TEST OBJECTIVE

The objective of this test is to provide comparable emissions data on transit buses produced by different manufacturers. This chassis-based emissions test bears no relation to engine certification testing performed for compliance with the Environmental Protection Agency (EPA) regulation. EPA's certification tests are performed using an engine dynamometer operating under the Federal Test Protocol. This emissions test is a measurement of the gaseous engine emissions CO, CO2, NOx, HC and particulates (diesel vehicles) produced by a vehicle operating on a large-roll chassis dynamometer. The test is performed for three differed driving cycles intended to simulate a range of transit operating environments. The cycles consist of Manhattan Cycle, the Orange County Bus driving cycle, and the Urban Dynamometer Driving Cycle (UDDS). The test is performed under laboratory conditions in compliance with EPA 1065 and SAE J2711. The results of this test may not represent actual in-service vehicle emissions but will provide data that can be used by recipients to compare buses tested under different operating conditions.

8-II. TEST DESCRIPTION

This test is performed in the emissions bay of the LTI Vehicle Testing Laboratory. The Laboratory is equipped with a Schenk Pegasus 300 HP, large-roll (72 inch diameter) chassis dynamometer suitable for heavy-vehicle emissions testing. The dynamometer is located in the end test bay and is adjacent to the control room and emissions analysis area. The emissions laboratory provides capability for testing heavy-duty diesel and alternative-fueled buses for a variety of tailpipe emissions including particulate matter, oxides of nitrogen, carbon monoxide, carbon dioxide, and hydrocarbons. It is equipped with a Horiba full-scale CVS dilution tunnel and emissions sampling system. The system includes Horiba Mexa 7400 Series gas analyzers and a Horiba HF47 Particulate Sampling System. Test operation is automated using Horiba CDTCS software. The computer controlled dynamometer is capable of simulating over-the-road operation for a variety of vehicles and driving cycles.

The emissions test will be performed as soon as permissible after the completion of the GVW portion of the structural durability test. The driving cycles are the Manhattan cycle, a low average speed, highly transient urban cycle (Figure 1), the Orange County Bus Cycle which consists of urban and highway driving segments (Figure 2), and the EPA UDDS Cycle (Figure 3). An emissions test will comprise of two runs for the three different driving cycles, and the average value will be reported. Test results reported will include the average

grams per mile value for each of the gaseous emissions for gasoline buses, for all the three driving cycles. In addition, the particulate matter emissions are included for diesel buses, and non-methane hydrocarbon emissions (NMHC) are included for CNG buses. Testing is performed in accordance with EPA CFR49, Part 1065 and SAE J2711 as practically determined by the FTA Emissions Testing Protocol developed by West Virginia University and Penn State University.

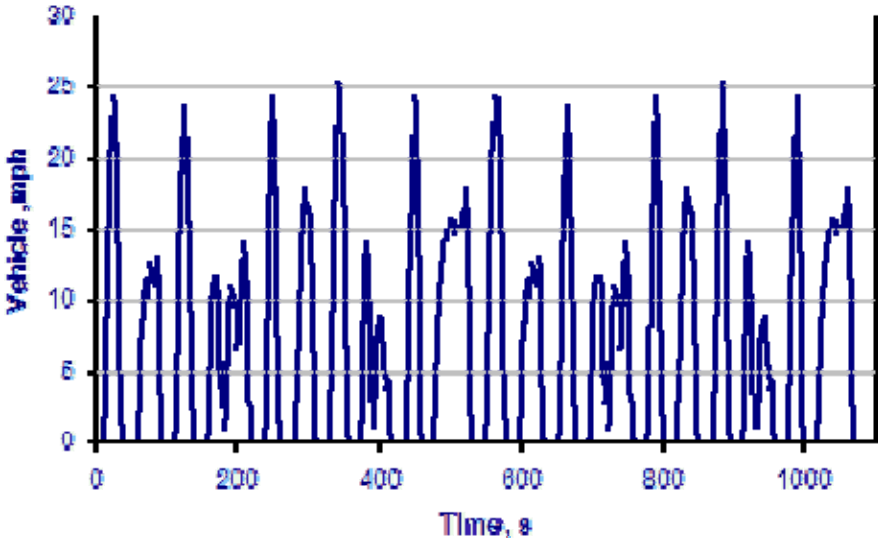


***Figure 1**. Manhattan Driving Cycle (duration 1089 sec, Maximum speed 25.4mph, average speed 6.8mph)*

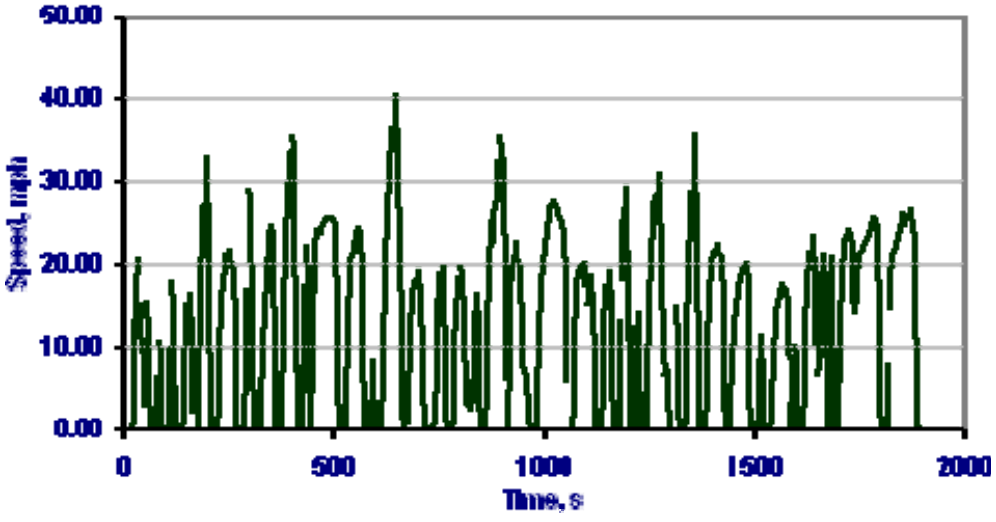


***Figure 2**. Orange County Bus Cycle (Duration 1909 Sec, Maximum Speed 41mph, Average Speed 12mph)*

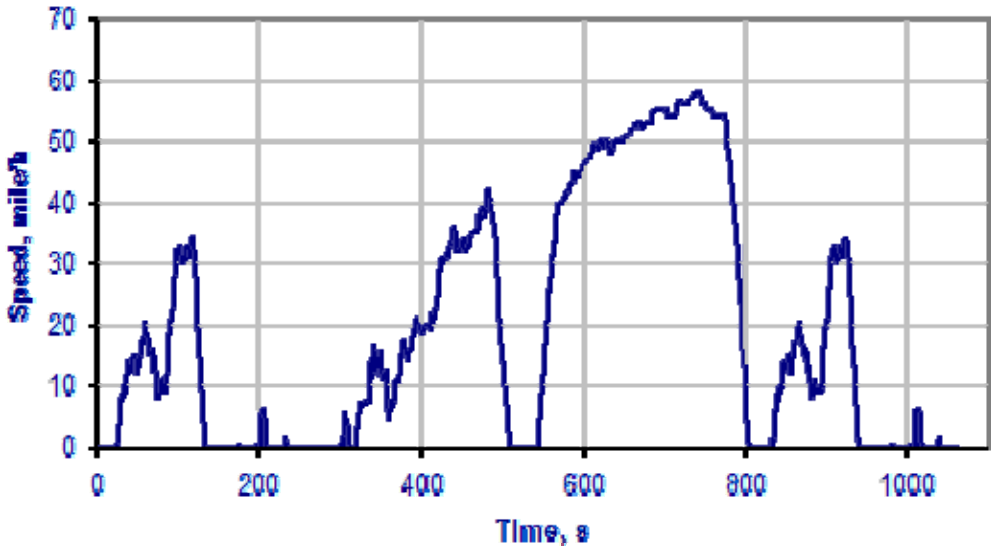


***Figure 3**. HD-UDDS Cycle (duration 1060seconds, Maximum Speed 58mph, Average Speed 18.86mph)*

8-III. TEST ARTICLE

The test article is a Starcraft Bus a Division of Forest River, Inc., model Starlite Transit bus equipped with a gasoline fueled Ford Motor Co. 3.7 L engine. The bus was tested on August 18, 2016.

8-IV. TEST EQUIPMENT

Testing is performed in the LTI Vehicle Testing Laboratory emissions testing bay. The test bay is equipped with a Schenk Pegasus 72-inch, large-roll chassis dynamometer. The dynamometer is electronically controlled to account for vehicle road-load characteristics and for simulating the inertia characteristics of the vehicle. Power to the roller is supplied and absorbed through an electronically controlled 3-phase ac motor. Absorbed power is dumped back onto the electrical grid.

Vehicle exhaust is collected by a Horiba CVS, full-flow dilution tunnel. The system has separate tunnels for diesel and gasoline/natural gas fueled vehicles. In the case of diesel vehicles, particulate emissions are measured gravimetrically using 47mm Teflon filters. These filters are housed in a Horiba HF47 particulate sampler, per EPA 1065 test procedures... Heated gaseous emissions of hydrocarbons and NOx are sampled by Horiba heated oven analyzers. Gaseous

emissions for CO, CO2 and cold NOx are measured using a Horiba Mexa 7400 series gas analyzer. System operation, including the operation of the chassis dynamometer, and all calculations are controlled by a Dell workstation running Horiba CDCTS test control software. Particulate Filters are weighed in a glove box using a Sartorius microbalance accurate to 1 microgram.

8-V. TEST PREPARATION AND PROCEDURES

All vehicles are prepared for emissions testing in accordance with the Fuel Economy Pre-Test Maintenance Form. (In the event that fuel economy test was performed immediately prior to emissions testing this step does not have to be repeated) This is done to ensure that the bus is tested in optimum operating condition. The manufacturer-specified preventive maintenance shall be performed before this test. The ABS system and when applicable, the regenerative braking system are disabled for operation on the chassis dynamometer. Any manufacturer-recommended changes to the pre-test maintenance procedure must be noted on the revision sheet. The Fuel Economy Pre-Test Inspection Form will also be completed before performing. Both the Fuel Economy Pre-Test Maintenance Form and the Fuel Economy Pre-Test Inspection Form are found on the following pages.

Prior to performing the emissions test, each bus is evaluated to determine its road-load characteristics using coast-down techniques in accordance with SAE J1263. This data is used to program the chassis dynamometer to accurately simulate over-the-road operation of the bus.

Warm-up consists of driving the bus for 20 minutes at approximately 40 mph on the chassis dynamometer. The test driver follows the prescribed driving cycle watching the speed trace and instructions on the Horiba Drivers-Aid monitor which is placed in front of the windshield. The CDCTS computer monitors driver performance and reports any errors that could potentially invalidate the test.

All buses are tested at half seated load weight. The base line emissions data are obtained at the following conditions:

1. Air conditioning off
2. Evaporator fan or ventilation fan on
3. One Half Seated load weight
4. Appropriate test fuel with energy content (BTU/LB) noted in CDTCS software
5. Exterior and interior lights on
6. Heater Pump Motor off
7. Defroster off
8. Windows and Doors closed

The test tanks or the bus fuel tank(s) will be filled prior to the fuel economy test with the appropriate grade of test fuel.

8-VI DISCUSSION

The following Table 1 provides the emissions testing results on a grams per mile basis for each of the exhaust constituents measured and for each driving cycle performed.

TABLE 1 Emissions Test Results

Test Completed at Half SLW: 9,100 LBS.			
Driving Cycle	**Manhattan**	**Orange County Bus**	**UDDS**
CO_2, gm/mi	1,230	875	821
CO, gm/mi	1.2	0.15	0.57
THC, gm/mi	0.18	0.04	0.04
NMHC, gm/mi	0.13	0.02	0.03
NO_x, gm/mi	0.03	0.01	0.01
Particulates. gm/mi	NA	NA	NA
Fuel consumption mpg	7.00	9.86	10.50

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
SONNY MERRYMAN, INC
5120 WARDS RD
EVINGTON, VA 24550-2224

BUSINESS REGISTRATION ACCOUNT NUMBER: **2340-1838**

This certificate is issued on: **02/22/2017**

This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code

The person or organization identified on this certificate is registered to conduct business in the State of West Virginia at the location above.

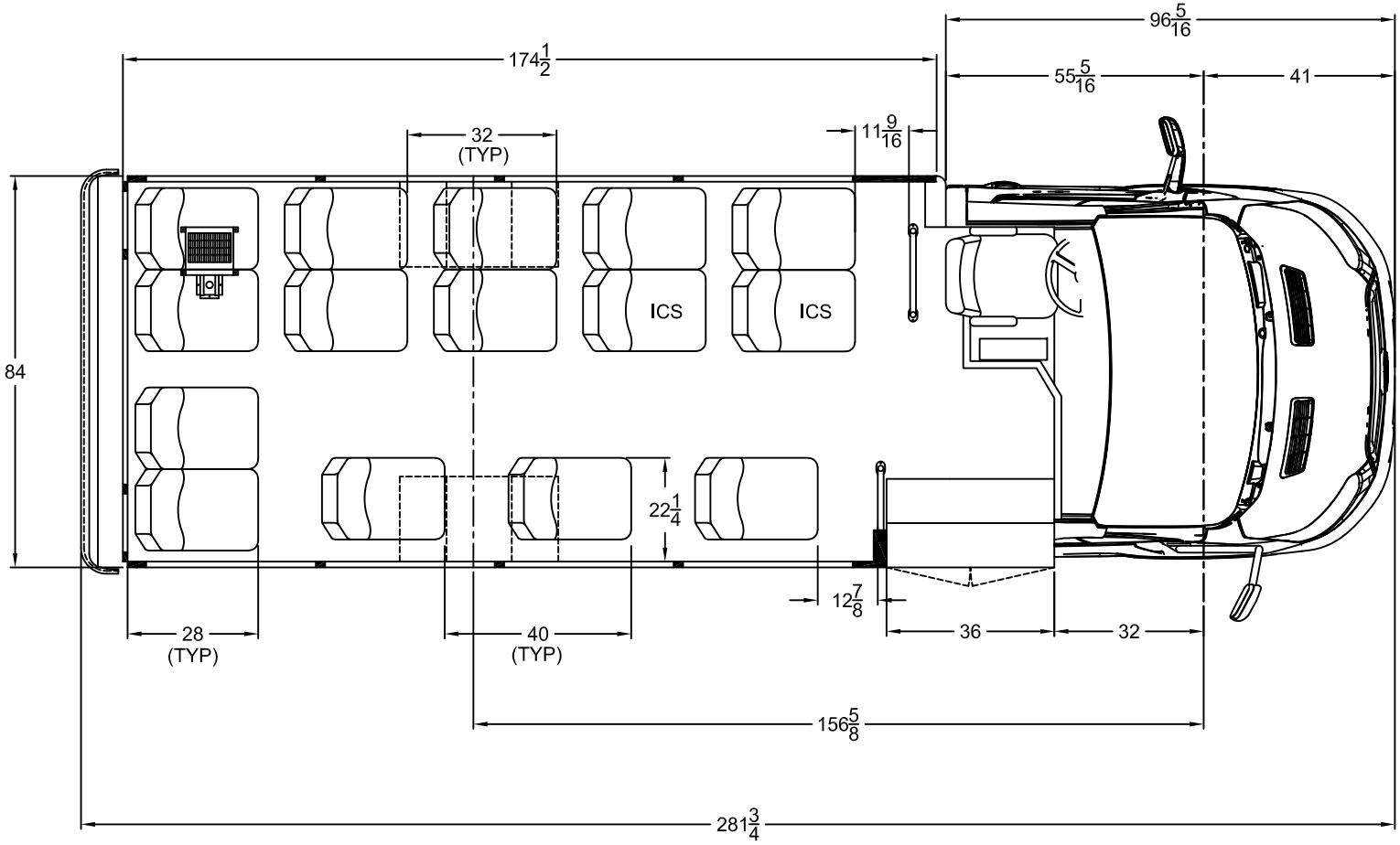
This certificate is not transferrable and must be displayed at the location for which issued

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them. CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

atL006 v.4
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Floor Plan for
Class A

NOTE: SHOWN WITH MID HI FREEDMAN SEATS
CANDIDATE TRANSIT 10,360 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 EQUIPMENT MAY BE SHOWN.
THE SALES ORDER PLACED DICTATES ACTUAL OPTION CONTENT.

DEALER APPROVAL

☐ APPROVED

CUSTOMER SIGNATURE

SCALE
IN INCHES

0 12 24 36 48

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

TOLERANCE UNLESS OTHERWISE SPECIFIED

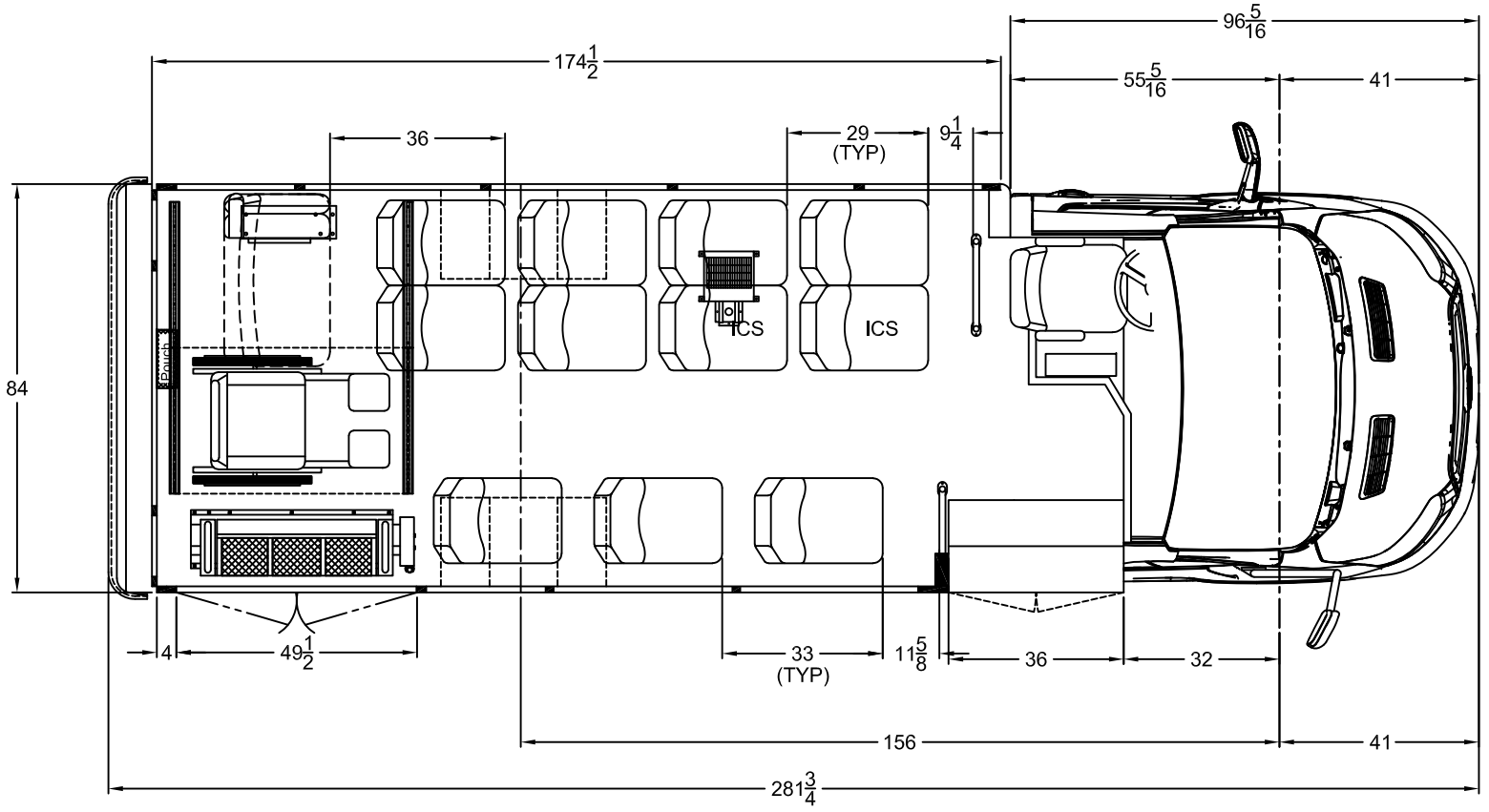
WOOD	OTHER
± 1/8"	± 1/16"
± 1°	± 1/2°

STARTRANS a division of Forest River, Inc.

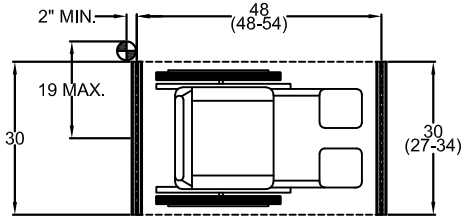
DATE: 06/07/16
NAME: TAS

TITLE: 15 PASS 156 WB MODEL 22 CANDIDATE TRANSIT

DWG. No. 15 PASS 156 174-3 USA



Floor Plan for
Classes
B,E,H,K,N



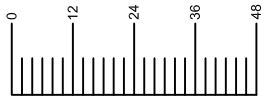
NOTE: SHOWN WITH MID HI FREEDMAN SEATS
CANDIDATE TRANSIT 10,360 GVWR
THIS FLOOR PLAN IS FOR ILLUSTRATION PURPOSES ONLY.
A WEIGHT ANALYSIS HAS NOT YET BEEN PERFORMED.
FINAL APPROVAL WITH A WEIGHT ANALYSIS IS REQUIRED UPON RECEIPT OF A COMPLETED ORDER WITH ALL OPTIONS SHOWN.
OPTIONAL EQUIPMENT MAY BE SHOWN.
THE SALES ORDER PLACED DICTATES ACTUAL OPTION CONTENT.

DEALER APPROVAL

☐ APPROVED

CUSTOMER SIGNATURE

SCALE
IN INCHES



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

TOLERANCE UNLESS OTHERWISE SPECIFIED

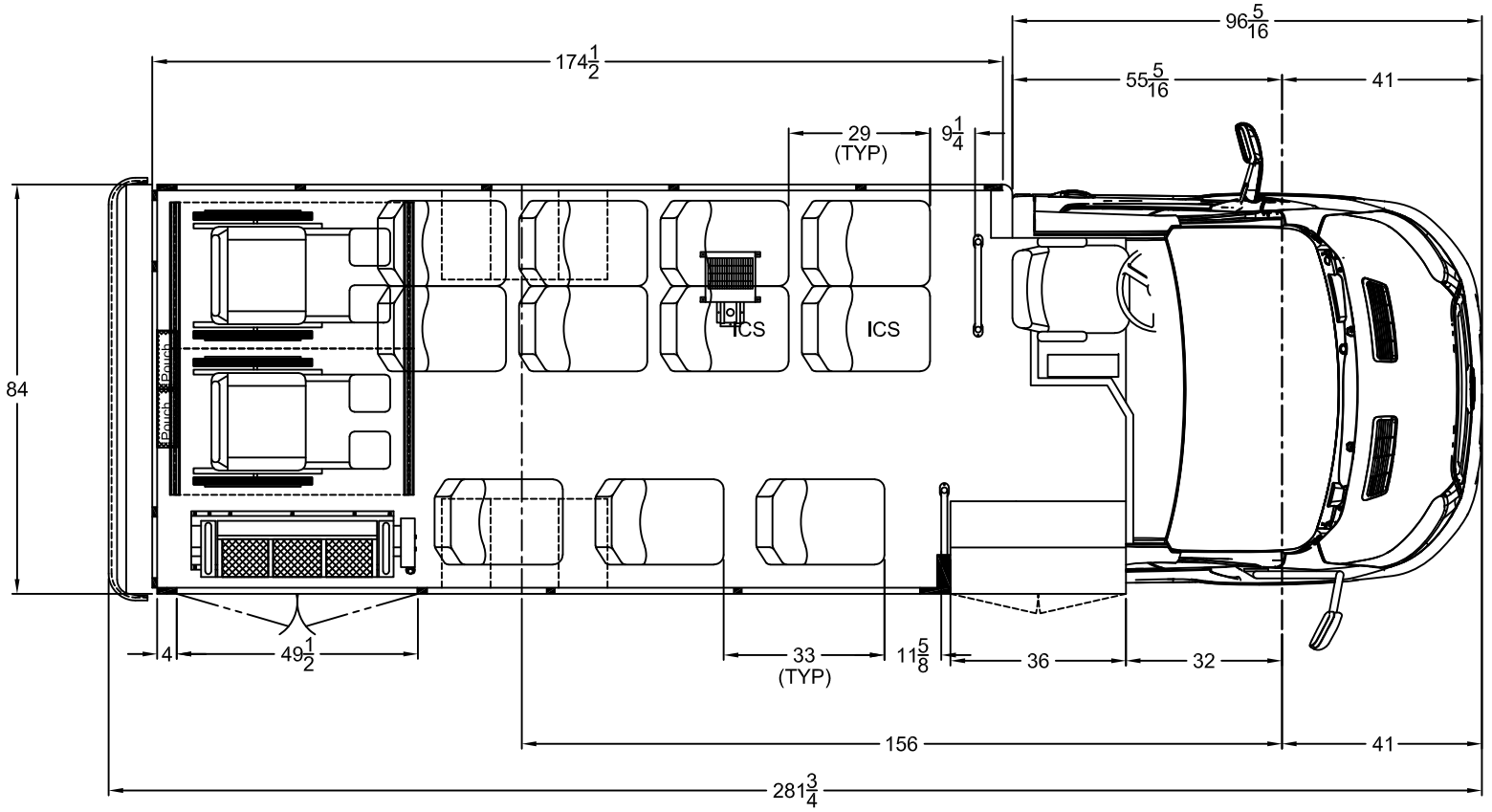
WOOD	OTHER
± 1/8"	± 1/16"
± 1°	± 1/2°

STARTRANS a division of Forest River, Inc.

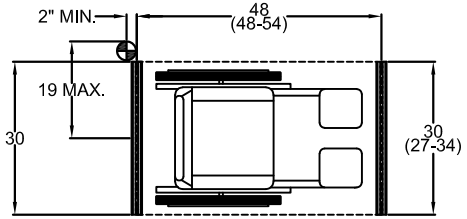
DATE: 11/12/18 TITLE: 11 2 WC 156 WB MODEL 22 TRANSIT

NAME: TAS

DWG. No. 11 2 WC 1 DBL FOLD 156 WB 174 BDY-2 USA



Floor Plan for
Classes
C,F,I,L,O



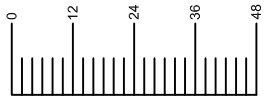
NOTE: SHOWN WITH MID HI FREEDMAN SEATS
CANDIDATE TRANSIT 10,360 GVWR
THIS FLOOR PLAN IS FOR ILLUSTRATION PURPOSES ONLY.
A WEIGHT ANALYSIS HAS NOT YET BEEN PERFORMED.
FINAL APPROVAL WITH A WEIGHT ANALYSIS IS REQUIRED UPON RECEIPT OF A COMPLETED ORDER WITH ALL OPTIONS SHOWN.
OPTIONAL EQUIPMENT MAY BE SHOWN.
THE SALES ORDER PLACED DICTATES ACTUAL OPTION CONTENT.

DEALER APPROVAL

☐ APPROVED

CUSTOMER SIGNATURE

SCALE
IN INCHES



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

TOLERANCE UNLESS OTHERWISE SPECIFIED

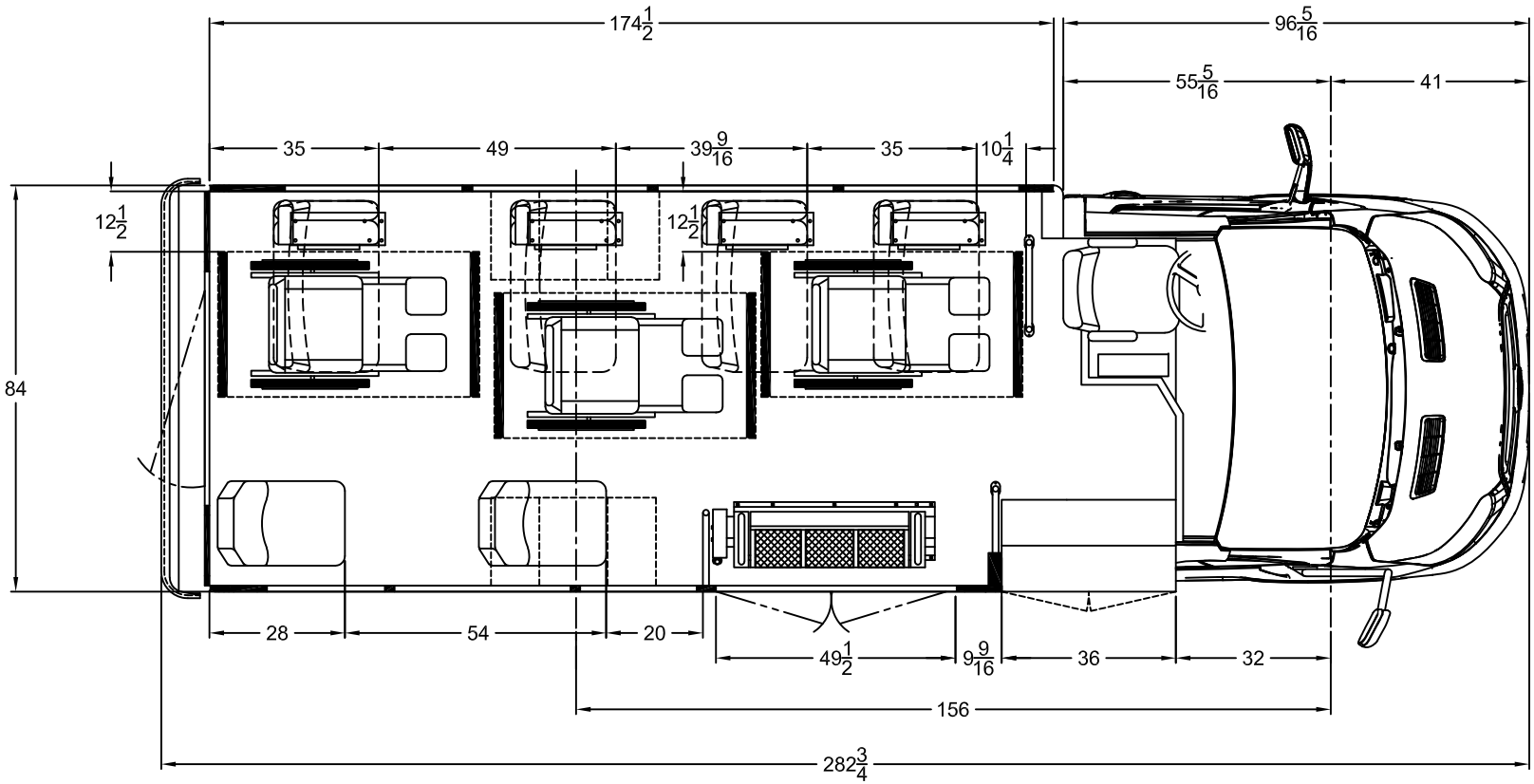
WOOD	OTHER
± 1/8"	± 1/16"
± 1°	± 1/2°

STARTRANS a division of Forest River, Inc.

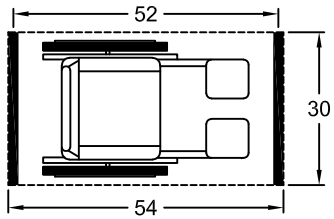
DATE: 11/12/18 TITLE: 11 2 WC 156 WB MODEL 22 TRANSIT

NAME: TAS

DWG. No. 11 2 WC 156 WB 174 BDY USA



Floor Plan for
Classes
D,G,J,M & P



NOTE: SHOWN WITH MID HI FREEDMAN SEATS
CANDIDATE TRANSIT 10,360 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 EQUIPMENT MAY BE SHOWN.
THE SALES ORDER PLACED DICTATES ACTUAL OPTION CONTENT.

DEALER APPROVAL

☐ APPROVED

CUSTOMER SIGNATURE

SCALE
IN INCHES

0 12 24 36 48

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

TOLERANCE UNLESS OTHERWISE SPECIFIED

WOOD	OTHER
± 1/8"	± 1/16"
± 1°	± 1/2°

STARTRANS a division of Forest River, Inc.

DATE: 07/21/20 TITLE: 2 3 WC 156 WB TRANSIT CANDIDATE TRANSIT

NAME: TAS

DWG. No. 2 3 WC 4 DB FOLDS 156 174 USA

WEIGHT ANALYSIS

7/21/2020 15 PASS 156 174-3 EST USA

	INPUT AREAS=						FUEL LOAD ADJ. DATA (F.L.A.)				
	VEHICLE DESCRIPTION:		CHASSIS	UNIT #	MODEL:	FUEL TYPE:	FUEL CAP.	FUEL WGT PER GAL.			
	15 PASS 156 174-3 EST USA					GAS	25	6.1			
	WHEELBASE	PER IN. VALUE CALC.		AXLE WEIGHTS			FUEL AMT.	WGT OF FUEL	FUEL ADJ. AMT.		
	156	0.64		LEFT FRONT	RIGHT FRONT		0.25	152.5	-38.13		
AXLE CAPACITIES			3163	1723	1440		FUEL TANK CENTER		DEALER		
FRONT	REAR	TOTAL		LEFT REAR	RIGHT REAR		78				
4130	7275	10360	4023	2002	2021						
LEFT (ROADSIDE)						**RIGHT (CURBSIDE)**					
	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	
DRIVER	48	215	30.77%	148.85	66.15	95.5	-32	61.22%	-12.41	-19.59	MID HI SINGLE
MID HI DBL	87.5	-55	56.09%	-24.15	-30.85	135.5	-32	86.86%	-4.21	-27.79	MID HI SINGLE
MID HI DBL	119.5	-55	76.60%	-12.87	-42.13	175.5	-32	112.50%	4.00	-36.00	MID HI SINGLE
MID HI DBL	151.5	-55	97.12%	-1.59	-53.41	215.5	-32	138.14%	12.21	-44.21	MID HI SINGLE
MID HI DBL	183.5	-55	117.63%	9.70	-64.70			0.00%	0.00	0.00	
MID HI DBL	215.5	-55	138.14%	20.98	-75.98	96	182	61.54%	70.00	112.00	MID HI SINGLE
			0.00%	0.00	0.00	136	182	87.18%	23.33	158.67	MID HI SINGLE
MID HI DBL	88	355	56.41%	154.74	200.26	176	182	112.82%	-23.33	205.33	MID HI SINGLE
MID HI DBL	120	355	76.92%	81.92	273.08	216	355	138.46%	-136.54	491.54	MID HI DBL
MID HI DBL	152	355	97.44%	9.10	345.90			0.00%	0.00	0.00	
MID HI DBL	184	355	117.95%	-63.72	418.72			0.00%	0.00	0.00	
MID HI DBL	216	355	138.46%	-136.54	491.54			0.00%	0.00	0.00	
			0.00%	0.00	0.00	156	0	100.00%	0.00	0.00	MOR RYDE
MOR RYDE	156	0	100.00%	0.00	0.00	140	32	89.74%	3.28	28.72	5/8" MARINE
5/8" MARINE	140	32	89.74%	3.28	28.72			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
	TOTAL PASSENGER LOAD			189.71	1557.29				-63.67	868.67	2552.00
	AXLE WEIGHTS			1723.00	2002.00				1440.00	2021.00	7186.00

				FRONT	REAR	LEFT/RIGHT TOTALS	LEFT/RIGHT %'S				
			LEFT	1941.30	3587.89	5529.19	0.561				
			RIGHT	1404.93	2918.26	4323.19	0.439				
			FRT / REAR TOTALS	3346.23	6506.15	9852.38					
			AXLE CAPACITIES	4130	7275	10360					
			AVAILABLE CAPACITIES	**783.77**	**768.85**	**507.63**					

94376B
MID HI, BIKE RACK

Front Curbside
Maximum Capacity 2065
1404.93

Rear Curbside
Maximum Capacity 3637.5
2918.26

Combined Front
3346.23
4130 Maximum Capacity

Combined Rear
6506.15
7275 Maximum Capacity

1941.30
Maximum Capacity 2065
Front Roadside

3587.89
Maximum Capacity 3637.5
Rear Roadside

WEIGHT ANALYSIS

7/21/2020 11 1 WC 1 DBL FOLD 156 WB 174 BDY EST USA

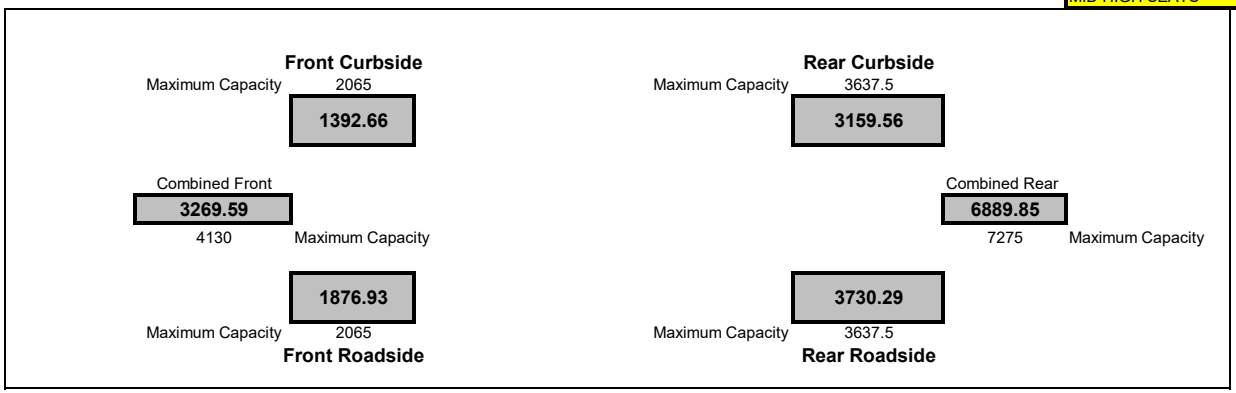
	INPUT AREAS=						FUEL LOAD ADJ. DATA (F.L.A.)				
	VEHICLE DESCRIPTION:		CHASSIS	UNIT #	MODEL:	FUEL TYPE:	FUEL CAP.	FUEL WGT PER GAL.			
	11 1 WC 1 DBL FOLD 156 WB 174 BDY		TRANSIT		TRANSIT	GAS	25	6.1			
	WHEELBASE	PER IN. VALUE CALC.		AXLE WEIGHTS			FUEL AMT.	WGT OF FUEL	FUEL ADJ. AMT.		
	156	0.64		LEFT FRONT	RIGHT FRONT		0.13	152.5	-19.06		
AXLE CAPACITIES			2904	1598	1306		FUEL TANK CENTER		DEALER		
FRONT	REAR	TOTAL		LEFT REAR	RIGHT REAR		78				
4130	7275	10360	4650	2109	2541						

LEFT (ROADSIDE)						RIGHT (CURBSIDE)					
	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	
DRIVER	44	150	28.21%	107.69	42.31	94	-32	60.26%	-12.72	-19.28	MID HI SINGLE
MID HI DB	122	-55	78.21%	-11.99	-43.01	127	-32	81.41%	-5.95	-26.05	MID HI SINGLE
MID HI DB	162	-55	103.85%	2.12	-57.12	160	-32	102.56%	0.82	-32.82	MID HI SINGLE
SGL FLIP	227	-32	145.51%	14.56	-46.56	227	-32	145.51%	14.56	-46.56	SINGLE FLIP
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00	94	182	60.26%	72.33	109.67	MID HI SINGLE
MID HI DB	85	355	54.49%	161.57	193.43	127	182	81.41%	33.83	148.17	MID HI SINGLE
MID HI DB	114	355	73.08%	95.58	259.42	160	182	102.56%	-4.67	186.67	MID HI SINGLE
MID HI DB	143	355	91.67%	29.58	325.42	194	200	124.36%	-48.72	248.72	W/C
MID HI DB	172	355	110.26%	-36.41	391.41			0.00%	0.00	0.00	
DBL FOLD	205	385	131.41%	-120.93	505.93	156	28	100.00%	0.00	28.00	5/8 MARINE
			0.00%	0.00	0.00	156	0	100.00%	0.00	0.00	MORYDE
5/8 MARINE	156	28	100.00%	0.00	28.00	235	-7.5	150.64%	3.80	-11.30	ROMEO RIM BUMOER
MORYDE	156	0	100.00%	0.00	0.00			0.00%	0.00	0.00	
ROMEO RIM BUMPER	235	-7.5	150.64%	3.80	-11.30			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
	TOTAL PASSENGER LOAD			245.57	1587.93				53.30	585.20	2472.00
	AXLE WEIGHTS			1598.00	2109.00				1306.00	2541.00	7554.00

				FRONT	REAR	LEFT/RIGHT TOTALS	LEFT/RIGHT %'S				
			LEFT	1876.93	3730.29	5607.22	0.552				
			RIGHT	1392.66	3159.56	4552.22	0.448				
		FRT / REAR TOTALS		3269.59	6889.85	10159.44					
		AXLE CAPACITIES		4130	7275	10360					
		AVAILABLE CAPACITIES		**860.41**	**385.15**	**200.56**					

47685B

MID HIGH SEATS



WEIGHT ANALYSIS

7/21/2020 11 2 WC 156 WB 174 BDY EST USA

	INPUT AREAS=						FUEL LOAD ADJ. DATA (F.L.A.)				
	VEHICLE DESCRIPTION:		CHASSIS	UNIT #	MODEL:	FUEL TYPE:	FUEL CAP.	FUEL WGT PER GAL.			
	11 2 WC 156 WB 174 BDY EST USA		TRANSIT		TRANSIT	GAS	25	6.1			
	WHEELBASE	PER IN. VALUE CALC.		AXLE WEIGHTS			FUEL AMT.	WGT OF FUEL	FUEL ADJ. AMT.		
	156	0.64		LEFT FRONT	RIGHT FRONT		0.13	152.5	-19.06		
AXLE CAPACITIES			2904	1598	1306		FUEL TANK CENTER		DEALER		
FRONT	REAR	TOTAL		LEFT REAR	RIGHT REAR		78				
4130	7275	10360	4650	2109	2541						

LEFT (ROADSIDE)						RIGHT (CURBSIDE)					
	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	
DRIVER	44	150	28.21%	107.69	42.31	94	-32	60.26%	-12.72	-19.28	MID HI SINGLE
MID HI DB	122	-55	78.21%	-11.99	-43.01	127	-32	81.41%	-5.95	-26.05	MID HI SINGLE
MID HI DB	162	-55	103.85%	2.12	-57.12	160	-32	102.56%	0.82	-32.82	MID HI SINGLE
SGL FLIP	227	-32	145.51%	14.56	-46.56	227	-32	145.51%	14.56	-46.56	SINGLE FLIP
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00	94	182	60.26%	72.33	109.67	MID HI SINGLE
MID HI DB	85	355	54.49%	161.57	193.43	127	182	81.41%	33.83	148.17	MID HI SINGLE
MID HI DB	114	355	73.08%	95.58	259.42	160	182	102.56%	-4.67	186.67	MID HI SINGLE
MID HI DB	143	355	91.67%	29.58	325.42	194	200	124.36%	-48.72	248.72	W/C
MID HI DB	172	355	110.26%	-36.41	391.41			0.00%	0.00	0.00	
W/C	194	200	124.36%	-48.72	248.72	156	28	100.00%	0.00	28.00	5/8 MARINE
			0.00%	0.00	0.00	156	0	100.00%	0.00	0.00	MORYDE
5/8 MARINE	156	28	100.00%	0.00	28.00	235	-7.5	150.64%	3.80	-11.30	ROMEO RIM BUMOER
MORYDE	156	0	100.00%	0.00	0.00			0.00%	0.00	0.00	
ROMEO RIM BUMPER	235	-7.5	150.64%	3.80	-11.30			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
	TOTAL PASSENGER LOAD			317.79	1330.71				53.30	585.20	2287.00
	AXLE WEIGHTS			1598.00	2109.00				1306.00	2541.00	7554.00

			FRONT	REAR	LEFT/RIGHT TOTALS	LEFT/RIGHT %'S
		LEFT	1949.14	3473.07	5422.22	0.544
		RIGHT	1392.66	3159.56	4552.22	0.456
		FRT / REAR TOTALS	3341.80	6632.64	9974.44	
		AXLE CAPACITIES	4130	7275	10360	
		AVAILABLE CAPACITIES	**788.20**	**642.36**	**385.56**	

47685B
MID HIGH SEATS

Front Curbside
Maximum Capacity 2065
1392.66

Rear Curbside
Maximum Capacity 3637.5
3159.56

Combined Front
3341.80
4130 Maximum Capacity

Combined Rear
6632.64
7275 Maximum Capacity

1949.14
Maximum Capacity 2065
Front Roadside

3473.07
Maximum Capacity 3637.5
Rear Roadside

WEIGHT ANALYSIS

7/21/2020 2 3 WC 4 DB FOLDS 156 174 EST USA

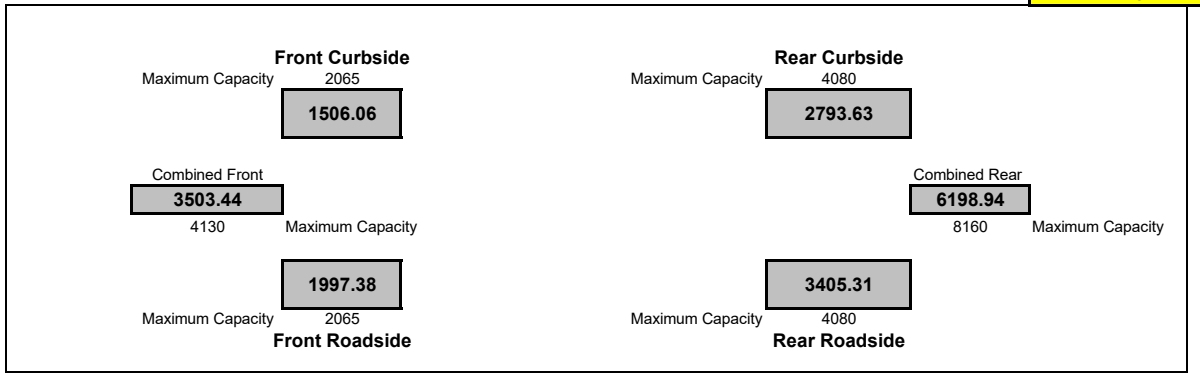
	INPUT AREAS=						FUEL LOAD ADJ. DATA (F.L.A.)				
	VEHICLE DESCRIPTION:		CHASSIS	UNIT #	MODEL:	FUEL TYPE:	FUEL CAP.	FUEL WGT PER GAL.			
	2 3 WC 4 DB FOLDS 156 174 EST US		TRANSIT			GAS	25	6.1			
	WHEELBASE	PER IN. VALUE CALC.		AXLE WEIGHTS			FUEL AMT.	WGT OF FUEL	FUEL ADJ. AMT.		
	156	0.64		LEFT FRONT	RIGHT FRONT		0.25	152.5	-38.13		
AXLE CAPACITIES			3196	1671	1525		FUEL TANK CENTER		DEALER		
FRONT	REAR	TOTAL		LEFT REAR	RIGHT REAR		78				
4130	7275	10360	4612	2117	2495						

LEFT (ROADSIDE)						RIGHT (CURBSIDE)					
	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	
DRIVER	44	150	28.21%	107.69	42.31	151	-32	96.79%	-1.03	-30.97	MID HI SINGLE
MID HI DBL	184	-55	117.95%	9.87	-64.87	184	-32	117.95%	5.74	-37.74	MID HI SINGLE
MID HI DBL	216	-55	138.46%	21.15	-76.15	216	-55	138.46%	21.15	-76.15	MID HI DBL
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00	162	182	103.85%	-7.00	189.00	MID HI SINGLE
DBL FOLD	81	385	51.92%	185.10	199.90	216	182	138.46%	-70.00	252.00	MID HI SINGLE
DBL FOLD	117	385	75.00%	96.25	288.75			0.00%	0.00	0.00	DB FOLD
DBL FOLD	158	385	101.28%	-4.94	389.94	142	40	91.03%	3.59	36.41	GAL BELLY METAL
DBL FOLD	205	385	131.41%	-120.93	505.93			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
GAL BELLY METAL	142	40	91.03%	3.59	36.41			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
Morryde	156	-62.5	100.00%	0.00	-62.50	156	-62.5	100.00%	0.00	-62.50	Morryde
5/8" PLYWOOD	140	0	89.74%	0.00	0.00	140	0	89.74%	0.00	0.00	5/8" PLYWOOD
3/4" PLYWOOD	140	0	89.74%	0.00	0.00	140	0	89.74%	0.00	0.00	3/4" PLYWOOD
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
TOTAL PASSENGER LOAD				297.79	1259.71				-47.54	270.04	1780.00
AXLE WEIGHTS				1671.00	2117.00				1525.00	2495.00	7808.00

	FRONT	REAR	LEFT/RIGHT TOTALS	LEFT/RIGHT %'S
LEFT	1997.38	3405.31	5402.69	0.557
RIGHT	1506.06	2793.63	4299.69	0.443
FRT / REAR TOTALS	3503.44	6198.94	9702.38	
AXLE CAPACITIES	4130	7275	10360	
AVAILABLE CAPACITIES	**626.56**	**1076.06**	**657.63**	

AS BUILT 3647CT

MID HI DBL MORRYDE 5/8 MARINE



SONNMER-01 FAMOS

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 7/22/2020

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

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

PRODUCER
Campbell Insurance
801 Main Street, Suite 400
Lynchburg, VA 24504

CONTACT NAME: Frieda K. Amos
PHONE (A/C, No, Ext): (434) 847-5541 509 FAX (A/C, No): (434) 846-5648
E-MAIL ADDRESS: FAmos@campbellins.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Travelers Property Casualty Company of America	25674
INSURER B : Travelers Ind Co of Connecticut	25682
INSURER C : Virginia Commerce GSIA	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
Sonny Merryman, Inc.
P. O. Box 495
Rustburg, VA 24588-0495

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

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

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY PRO-JECT LOC OTHER:	X		Y6303632B940TIL19	9/10/2019	9/10/2020	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 300,000 $ 10,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
B	AUTOMOBILE LIABILITY X ANY AUTO OWNED AUTOS ONLY SCHEDULED AUTOS HIRED AUTOS ONLY NON-OWNED AUTOS ONLY X Garage Liability	X		GA927K189A19CAG	9/10/2019	9/10/2020	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
A	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DED X RETENTION $ 10,000			CUP1L0731781914	9/10/2019	9/10/2020	EACH OCCURRENCE AGGREGATE	$ 10,000,000 $ 10,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		630083400	1/1/2020	1/1/2021	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
The State of West Virginia is an Additional Insured on General Liability and Garage Liability.

CERTIFICATE HOLDER

State of West Virginia
Attn: Linda B. Harper
Purchasing Division
2019 Washington Street, East
Charleston, WV 25305-2214

CANCELLATION

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

AUTHORIZED REPRESENTATIVE
Frieda K. Amos

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Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735
Doc Description: Addendum 1 - 156" WB DRW Narrow Body Cutaway
Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-07-08	2020-07-17 13:30:00	CRFQ 0805 PTR2000000003	2

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc.
5120 Wards Road
Evington, VA. 24550

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X C. [illegible] **FEIN #** 540806-176 **DATE** 07/22/2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum 1 issued for the following reasons:

1. To publish a copy of vendor questions with responses.

No other changes.

INVOICE TO	SHIP TO
ACCOUNTS PAYABLE PUBLIC TRANSIT DIVISION OF BLDG 5 RM 650 1900 KANAWHA BLVD E CHARLESTON WV25305-0432 US	GENERAL MANAGER PUBLIC TRANSIT DIVISION OF KANAWHA VALLEY REGIONAL TRANSPORTATION AUTHORITY 1550 FOURTH AVE CHARLESTON WV 25324 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	156" WB DRW Narrow Body Cutaway	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
25101502	Startrans		Candidate II

Extended Description :
156" WB DRW Narrow Body Cutaway

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Question deadline 4:00 p.m.	2020-07-07

SOLICITATION NUMBER: PTR2000000003
Addendum Number: 1

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[ ] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[✓] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[ ] Other

Description of Modification to Solicitation:

Addendum 1 issued for the following reasons:

1. To publish a copy of vendor questions with responses.

No other changes.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: PTR2000000003

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[X]	Addendum No. 1	[ ]	Addendum No. 6
[ ]	Addendum No. 2	[ ]	Addendum No. 7
[ ]	Addendum No. 3	[ ]	Addendum No. 8
[ ]	Addendum No. 4	[ ]	Addendum No. 9
[ ]	Addendum No. 5	[ ]	Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Sonny Merryman Inc.
Company

Authorized Signature

07/22/2020
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735

Doc Description: Addendum 1 - 156" WB DRW Narrow Body Cutaway

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BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc.
5120 Wards Road
Evington, VA. 24550

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X **FEIN #** 540806-176 **DATE** 07/22/2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum 1 issued for the following reasons:

1. To publish a copy of vendor questions with responses.

No other changes.

INVOICE TO	SHIP TO
ACCOUNTS PAYABLE PUBLIC TRANSIT DIVISION OF BLDG 5 RM 650 1900 KANAWHA BLVD E CHARLESTON WV 25305-0432 US	GENERAL MANAGER PUBLIC TRANSIT DIVISION OF KANAWHA VALLEY REGIONAL TRANSPORTATION AUTHORITY 1550 FOURTH AVE CHARLESTON WV 25324 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	156" WB DRW Narrow Body Cutaway	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
25101502	Startrans		Candidate II

Extended Description :
156" WB DRW Narrow Body Cutaway

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Question deadline 4:00 p.m.	2020-07-07

SOLICITATION NUMBER: PTR2000000003
Addendum Number: 1

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[ ] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[✓] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[ ] Other

Description of Modification to Solicitation:

Addendum 1 issued for the following reasons:

1. To publish a copy of vendor questions with responses.

No other changes.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ATTACHMENT A

PTR2000000003

156' WB DRW Narrow Body Cutaway

Vendor Questions with responses

Q.1. Section 3.19, page 12, of the specifications related to "Body Structure". Please accept the Startrans Bus body structure per the attached specs.

A.1. The Division will accept the Startrans Bus Body structure, relating to Section 3.19 of the specifications.

Q.2. Documentation list, page 86, "Engine shall be 3.7 Liter V-6 gasoline engine", please accept "Engine shall be a minimum 3.5 Liter V-6 gasoline engine".

A.2. The Division will accept the 3.5 Liter V-6 gasoline engine as long as it meets the minimum requirement of 310 horsepower and meet the requirements outlined in Section 3.3.

Q.3. Section 3.15.4, page 9, "Rubber mud flaps shall be provided at all wheels...". Mud flaps are not available on the front wheels of a Ford Transit chassis. Please accept mud flaps on the rear wheels only/

A.3. The Division will accept mud flaps on the rear only.

Q.4. Section 3.19.13, page 13, "An aluminum or galvanized steel underfloor shall be provided for the whole of the passenger compartment, and it shall be fully undercoated." Forest River Bus is a Ford quality vehicle modifier, and applies all aftermarket undercoating per Ford QVM guidelines, is this acceptable?

A.4. The Division will accept the undercoating per Ford QVM guidelines.

Q.5. Section 3.14.4, please accept; our electrical box utilizes standard ATC fuses that plug into a fuse panel not mini fuses that plug into a distribution block. Functionally this achieves the same result but utilizes standard fuses.

A.5. The Division will accept this request.

Q.6. Section 3.4.1, please accept that the Ford Transit Cutaway Chassis utilizes an OEM Street side Fuel Fill that comes from Ford and is not installed by the body manufacturer.

A.6. The Division will accept the street site fuel fill since it is OEM.

Q.7. Section 3.23.2, please accept that the Rear Bumper will be supplied by the Body Manufacturer and not the OEM Chassis Manufacturer.

A.7. The Division will accept the rear bumper supplied by the body manufacturer.

Q.8. Section 3.25.5, please accept that we will not be able to supply windows on both sides of the rear door due to the narrow body nature of the bus.

A.8. It is understood that the windows cannot be supplied on either side of the rear door due to the fact the narrow body will not allow it.

Q.9. Section3.28.2 Would the Division accept Optronics LED lights in place of Truck Lite Brand LED lights? Brochure on Optronics is attached.

A.9. The Division will accept the Optronices LED lights.

Q.10. Section 3.32.10, please accept; at this time the only Driver's seat we are able to provide and satisfy all safety and QVM requirements from Ford is the Ford OEM Driver's Seat.

A.10. The Division will accept the Ford OEM Driver's Seat.

Q.11. Section 3.33.5 Wheel Chair Securement- Does the Division require L-Track to be run the full Width of the Wheel Chair positions?

A.11. The Division would like the L-Track to extend the full width of the wheel chair position.

Q.12. Section 3.38.1 Mirrors Exterior- Specifications currently allow for manual exterior mirrors. Would the Division consider requiring of all vendors to provided Heated Remote Mirrors for all classes on this contract?

A.12. The Division would like to modify Section 3.38.1 to add the Heated Remote Mirrors as a requirement.

Q.13. Section 3.35.4 The Angel Trax Hybrid Vault DVR system is now obsolete and has been replaced with the Angel Trax Vulcan V12 MDVR. This system is already in wide use in Transit Agencies within the state. Attached are the technical specifications of the system. This system can accommodate the required 6 dome cameras and has a 1 TB hard drive to satisfy the dual 500GB hard drive requirement. Will the Division accept the Angel Trax Vulcan V12 in place of the Angel Trax Vault?

A.13. The Division will accept the Angel Trax Vulcan V12 in place of the Angel Trax Vault.

STARTRANS BUS
a division of Forest River, Inc.

The following information is submitted for all StarTrans Bus products proposed on Solicitation PTR 2000000003 as supporting documentation of the structural soundness and impact resistance of the 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.

Body Construction – General Frame Construction

Manufactured from all aluminized 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 aluminized 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.

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 aluminized 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 Aluminized steel "Hat Posts" – 1"x1"x4" run the length of the floor between cross members and are welded into place. This extremely strong form is used to weld our HSLA aluminized steel seat track in place.

3.0.1.3 Aluminized 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.

3.0.1.4 Seat Track – 12 gauge roll formed high strength/low alloy aluminized steel is wire welded in place for seat mounting down each side of the bus, with lengths predicated on the floor plan chosen. This is yet another stiffener in our extensive construction process.

3.0.1.5 Wheel Wells -- Constructed of 14 gauge aluminized 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 Aluminized steel Angle – 1/8" thick 1.5" x 2.5" structural aluminized 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.

3.0.2 Sidewall Construction –

3.0.2.1 Sidewall vertical member – The heart of our sidewall is the vertical structure, a roll formed 18 gauge aluminized steel capital "C" channel with 8 bends that create extreme strength and rigidity. The vertical member is installed in full lengths and in shorter sections above and below window frames. Additional vertical structure is used at both ends of the sidewall enabling the structure to withstand the forces applied by the vehicle when in motion. Using the open C member also enables a thorough primer application.

3.0.2.2 Aluminized steel Tubing – 1"x1" lower and 1"x3" upper 16 gauge aluminized steel tubing is welded in horizontally between vertical members to frame in window openings. This adds front to rear reinforcement as well.

3.0.2.3 Seat Track – 11 gauge high strength low alloy roll formed aluminized steel track is welded down each sidewall below the window frame. While serving as a seat attaching device, it adds excellent structure to the sidewall and also adds excellent side impact resistance.

3.0.2.4 Wheelchair Options – Add another layer of metal. Depending on track locations, another structure of aluminized steel is welded in place between each vertical member for attaching a shoulder belt mount. Also, additional structure is added to accommodate wheelchair door frames.

3.0.2.5 Full length aluminized steel tubing – 1"x1" 16 gauge aluminized steel tubing is stitch welded to the sidewall bottom and top at each vertical member for attaching to the floor and roof sections, respectively.

3.0.3 Rear Wall Construction –

3.0.3.1 Rear wall vertical member – The vertical sidewall capital "C" channel with 8 bends is also used in the rear wall assembly. Full length structure is used at varying places, depending on choice of rear window, or rear door. Shorter cut pieces are used above windows and doors. Additional side windows used with the rear door also change the configuration.

3.0.3.2 Aluminized steel Tubing – 1"x1" 16 gauge aluminized steel tubing is welded horizontally between vertical members to provide a window frame in the standard product, and used as an upper door frame in the optional rear assembly.

3.0.3.3 Full length aluminized steel tubing – 1"x1" 16 gauge aluminized steel tubing is stitch welded to the rear wall top and bottom as in the sidewall assembly.

3.0.4 Roof Construction –

3.0.4.1 Roof Bows – Radius formed one-piece 16 gauge aluminized steel roof bows formed as a modified hat post design with eight bends for exceptional strength, including 4 bends in the web similar to our vertical sidewall aluminized steel provide a roof structure capable of taking severe loads. They are then capped with top flat pieces from flange to flange to provide abundant surface area for securing the exterior roof material.

3.0.4.2 Aluminized steel Tubing – 1"x1" 16 gauge aluminized steel tubing is welded in horizontally to frame all lower window openings and 1" x 3" 16 gauge aluminized steel tubing to all upper window openings as required. A full perimeter is also welded on to mate the roof to the
sidewall and rear wall, with short vertical pieces providing support on the front and rear ends. The 3" wide aluminized steel tube supplies a structural mounting surface for shoulder belt attachment and has been pull tested to federal standards.

3.0.5 Driver Compartment Overhead Halo –

3.0.5.1 Aluminized steel Tubing – 1"x1" 16 gauge aluminized 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 Aluminized 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 Aluminized steel Tubing – 2" x2" 16 gauge aluminized 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 aluminized 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 Aluminized steel Tubing – 1"x1" 16 gauge aluminized steel tubing is used vertically and a ladder type assembly is made welding the 1x 1 tube to .75"x.75" 11 gauge aluminized 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 Aluminized steel Tubing – 1"x1" 16 gauge and .75"x.75" 11 gauge aluminized 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 Aluminized steel – The step riser/tread piece is manufactured from one-piece 11 gauge aluminized steel and uses 90° bends at all risers and treads. The bottom tread also adds an additional 90° bend for additional strength and safety. Upper and lower side pieces are then attached and an 11 gauge flat plate with holes is used to bridge the lower and upper side pieces, then is stitch welded and plug welded to form a strong one piece assembly.

APPLICATION OF EXTERIOR SIDEWALL MATERIAL

FIBERGLASS/FRP/COMPOSITE SIDEWALLS

Composite FRP exterior sidewall panels are installed using Manus Bond 75-UHVFC solvent and isocyanate-free structural adhesive. The adhesive is applied to the vertical and horizontal frame members in the sidewall structure, then the one piece panel is set into place and clamped until the structural adhesive reaches initial "green" strength that gives it the ability to support the weight of the sidewall panel without additional aid.

Manus 75-UHVFC is used due to the excellent adhesion, yield strength and elongation percentage of the product once cured. Designed as a replacement for mechanical fasteners, the adhesive also allows the material to expand and contract without undue stress since the elongation of the product is 250%. Faster curing two-part adhesives can be used but their lack of elongation can lead to cracking of the skin due to stresses applied by typical heat/cold cycles encountered.

Manus 75-UHVFC is also the adhesive used by StarTrans to ensure permanent bonding of the plywood floor substrate to the coated aluminized steel frame members.

A product data sheet for Manus 75-UHVFC Structural Adhesive is attached for further information.

Should any further questions arise, please contact your StarTrans Bus representative.

PAINTED ALUMINUM OR ALUMINIZED STEEL SIDEWALLS

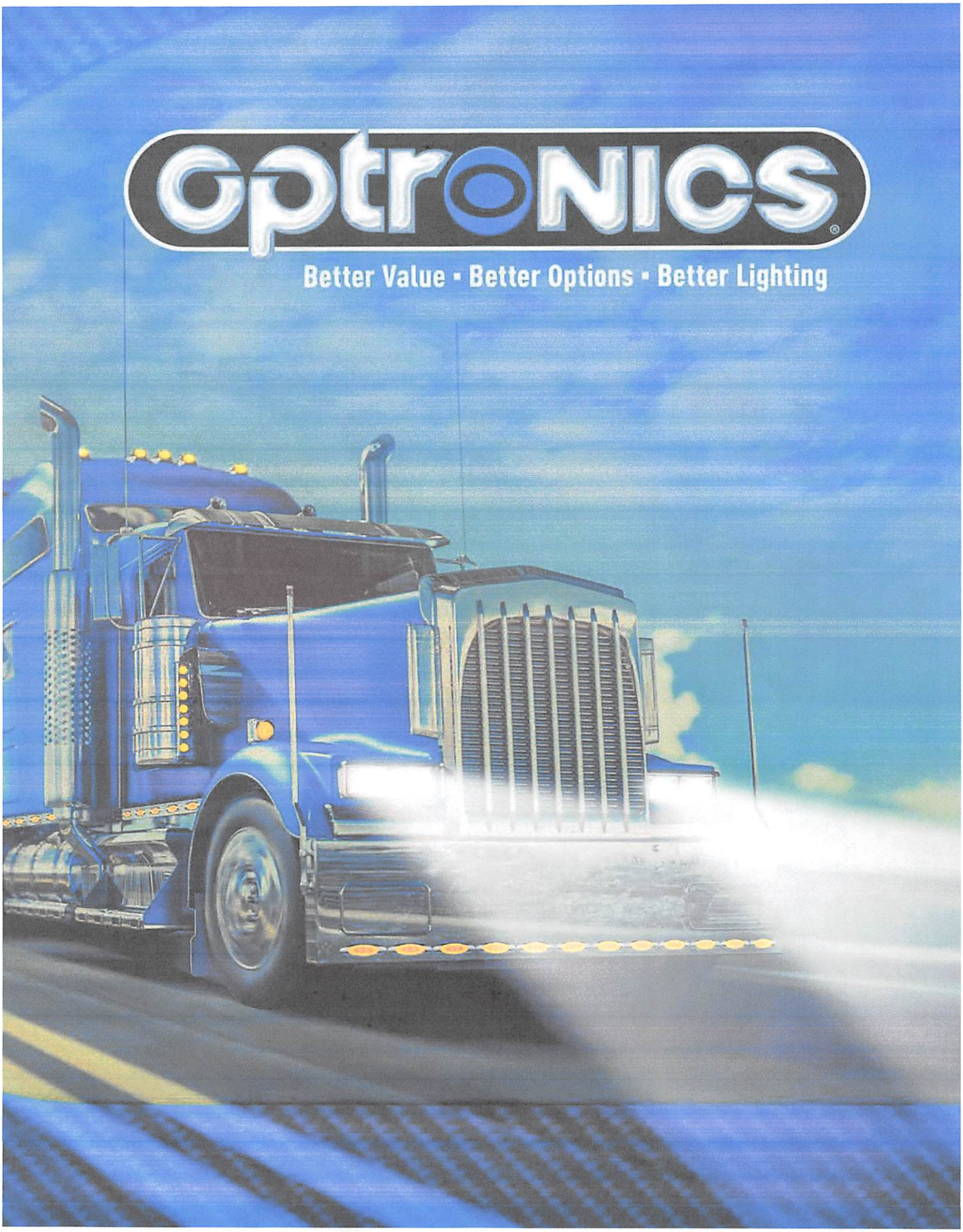
Mill painted aluminum or aluminized steel exterior sidewall panels are installed using a combination of Very High Bond tape with an acrylic adhesive and Manus Bond 75-UHVFC solvent and isocyanate-free

structural adhesive. The side vertical wall bows have two flanges facing the exterior. Tape is applied to one vertical flange for fast adhesion while Manus 75-UHVFC structural adhesive is applied to the other vertical flange. The metal is put in place then pressure is applied by rollers to secure the metal to the tape and ensure good contact with the bead of structural adhesive.

As normal practice dictates, metal is overlapped moving up the sidewall for water shedding. The metal is held in place initially by the VHB tape, then subsequently by window ring flanges and belt line molding that is secured with stainless aluminized steel fasteners. The structural adhesive "greens" (initial grab strength) within two hours, depending on temperature and humidity conditions, then moves to a full cure within a few days.

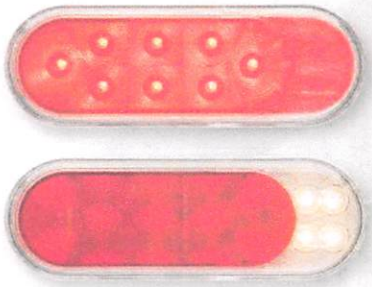
As above, product data sheets are attached for Manus 75-UHVFC and also the VHB tape for your information. A pictorial information sheet of the process is also attached to enable a visual understanding of the process as well.

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

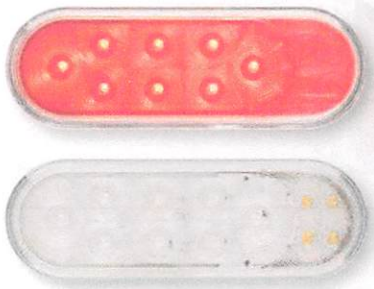

optronics®
Better Value • Better Options • Better Lighting

STL211X SERIES

FUSION™ 6" Oval Sealed LED Stop/Turn/Tail/Back-Up Lights



STL211XRB



STL211XRCB

PATENTED TECHNOLOGY

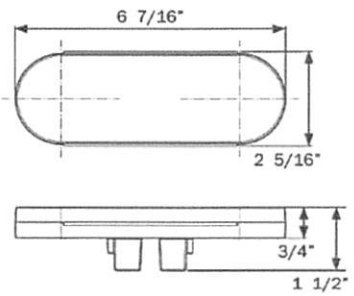
- DOT-compliant back-up light built into stop/turn/tail light
- Sonically sealed, waterproof
- Multi-function: Stop, turn, tail and back-up, all in one light
- Accepts industry standard PL-3 plugs

BULK P/N	POLYPACK P/N	DESCRIPTION	QTY
RED STOP/TURN/TAIL/BACK-UP LIGHT - 16 DIODES			
STL211XRB	STL211XRBP	Red lens, PL-3 connection	10
STL211XRCB	STL211XRCBP	Clear lens, PL-3 connection	10
ACCESSORIES			
A70GB	A70GBP	Grommet, flush mount	50
A45PB	A45PBP	Pigtail, 3-wire	100
A47PB	A47PBP	Right angle pigtail, 3-wire	100
A45CB	A45CBP	Pigtail, 2-wire	100
A49PB	A49PBP	Right angle pigtail, 2-wire	100
A77S1B	A77S1BP	Gray, flat design steel bracket	50
BK70BB	BK70BBP	Black steel bracket	10
RETAIL			
TLL211XRTMK	Retail Ready	**Try Me** Retail Kit: (2) ea. STL211XRB, A70GB, A45PB, A45CB, and (1) A30W5BLB 5-way harness, clam	6



TLL211XRTMK

FMVSS	S2 T2 I6 (2)R
MATERIALS	Polycarbonate lens and housing
VOLT/AMP	12.8VDC - .375A Stop/Turn, .020A Tail, .242A Back-Up
WT/DIMS	.35 lbs. / 6.438" x 2.313" x 1.50"
WARRANTY	Lifetime LED Warranty



HOLE CUT-OUT: 6.85" X 2.5"
(1.25" R)

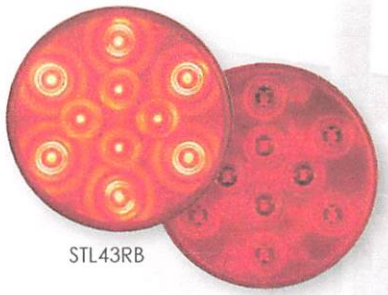


Standard PL3 connections

STL43 SERIES

4" Round Sealed LED Lights

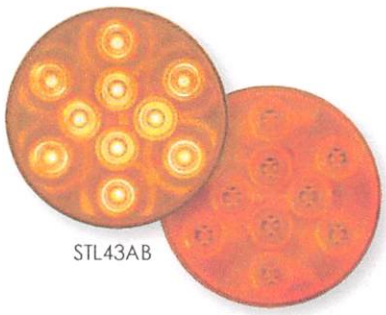
- Sonically sealed, waterproof
- Kits include grommet and plug
- Mount in any 360 degree position
- Available in 12-24V models
- Available with standard PL-3 or optional weathertight connection



STL43RB

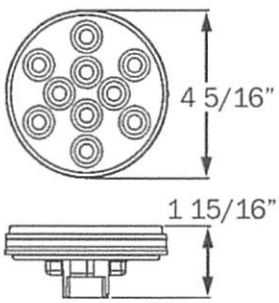


STL53RCB



STL43AB

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, 12-24V	10
STL43RMB	STL43RMBP	Weathertight connection, 12V	10
STL53RCB	STL53RCBP	Clear lens, red diode, PL-3, 12V	10
YELLOW PARKING/TURN SIGNAL - 10 DIODES			
STL43AB	STL43ABP	PL-3 connection, 12V	10
STL43A24B	STL43A24BP	PL-3 connection, 12-24V	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



HOLE CUT-OUT: 4.5"

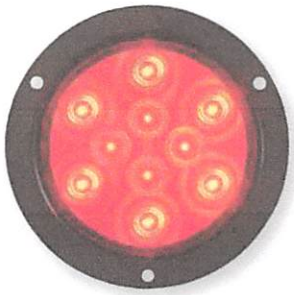
FMVSS	Red S T I P2; Yellow I6 P
MATERIALS	Polycarbonate lens and housing
VOLT/AMP	Red: 12.8VDC - .360A Stop/Turn, .030A Tail
	Yellow: 12.8VDC - .310A Turn, .046A Parking
WT/DIMS	.265 lbs. / 4.313" x 4.313" x 1.938"
WARRANTY	Lifetime LED Warranty

STL42 SERIES

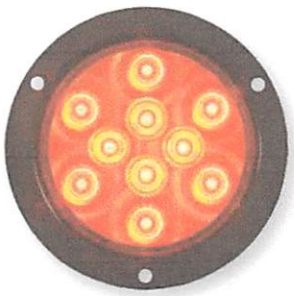
4" Round Sealed LED Lights with Mounting Flange

- Sonically sealed, waterproof
- Flange mount for security, theft reduction
- Available with standard PL-3 or optional weathertight connection

BULK P/N	POLYPACK P/N	DESCRIPTION	QTY
RED STOP/TURN/TAIL LIGHT - 10 DIODES			
STL42RB	STL42RBP	Black flange, PL-3	10
STL42RMB	STL42RMBP	Black flange, weathertight	10
YELLOW PARKING/TURN SIGNAL - 10 DIODES			
STL42AB	STL42ABP	Black flange, PL-3	10
STL42AMB	STL42AMBP	Black flange, weathertight	10
ACCESSORIES			
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
A42FCB	A42FCBP	Chrome flange cover	100
A5TRSSB	A5TRSSBP	Stainless steel trim ring	100
A42GB	A42GBP	Mounting gasket, black	100
RETAIL			
STL42RS	Retail Ready	Light only, clam	6



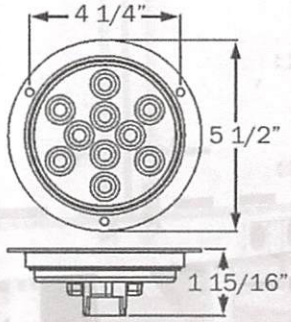
STL42RB



STL42AB



A42GB



HOLE CUT-OUT: 4.5"

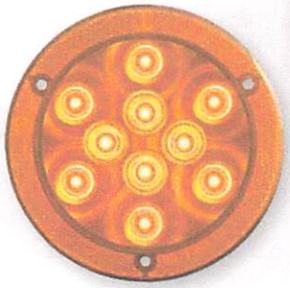
FMVSS	Red S T I P2; Yellow I6 P	
MATERIALS	Polycarbonate lens and housing	
VOLT/AMP	Red:	12.8VDC - .413 Stop/Turn, .026A Tail
	Yellow:	12.8VDC - .310 Turn, .046A Parking
WT/DIMS	.617 lbs. / 5.5" x 5.5" x 1.938"	
WARRANTY	Lifetime LED Warranty	

STL43 REFLEX FLANGE SERIES

4" Round Sealed LED Lights with Reflex Mounting Flange



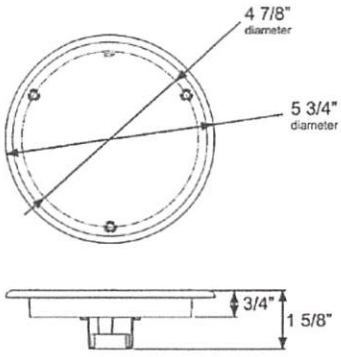
STL43RBX



STL43ABX

- Sonically sealed, waterproof
- Flange mount for security, theft reduction
- Accepts standard PL-3 connector
- Reflex flange meets SAE A for reflector

BULK P/N	POLYPACK P/N	DESCRIPTION	QTY
RED STOP/TURN/TAIL LIGHT - 10 DIODES			
STL43RBX	STL43RBXP	Red reflex flange, gasket, PL-3	10
STL43RBHX	STL43RBHXP	Red reflex flange, hard wire, gasket	10
YELLOW PARKING/TURN SIGNAL - 10 DIODES			
STL43ABX	STL43ABXP	Yellow reflex flange, gasket, PL-3	10
ACCESSORIES			
A45PB	A45PBP	Pigtail, 3-wire PL-3	100
A47PB	A47PBP	Right angle pigtail, 3-wire PL-3	100
RETAIL			
STL43ABXS	Retail Ready	Yellow light only, clam	6
STL43RBXS		Red light only, clam	6



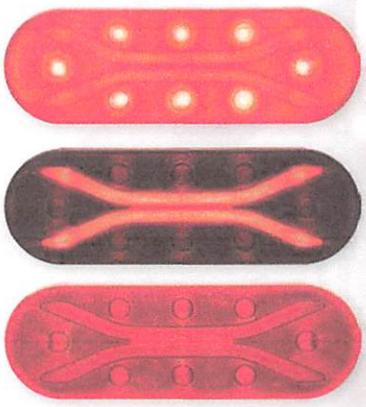
HOLE CUT-OUT: 4.5"

FMVSS	Red S T I; Yellow I6 P; Reflex A
MATERIALS	Polycarbonate lens and housing
VOLT/AMP	Red: 12.8VDC - .413 Stop/Turn, .026A Tail
	Yellow: 12.8VDC - .310 Turn, .046A Parking
WT/DIMS	.397 lbs. / 5.75" x 5.75" x 1.625"
WARRANTY	Lifetime LED Warranty

LIGHTGUIDE™

STL602 SERIES

LightGuide™ LED 6" Stop/Turn/Tail Light

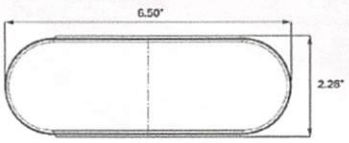


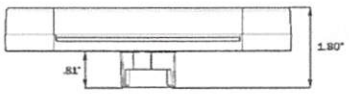
STL602RB

PATENTED TECHNOLOGY

- Central X-shaped feature illuminates for tail light function
- Surrounding diodes light for stop and turn functions
- Sonically sealed, waterproof
- Grommet mount
- Accepts industry standard PL-3 connector

BULK P/N	POLYPACK P/N	DESCRIPTION	QTY
RED STOP/TURN/TAIL LIGHT - 12 DIODES			
STL602RB	STL602RBP	PL-3 connection	10
ACCESSORIES			
A70GB	A70GBP	Grommet	50
A45PB	A45PBP	Pigtail, 3-wire	100
A47PB	A47PBP	Right angle pigtail, 3-wire	100
BK70BB	BK70BBP	Black steel bracket	10
A77S1B	A77S1BP	Gray, flat design steel bracket	50





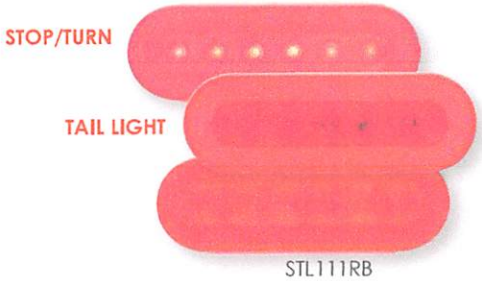
FMVSS	S2 T2 I6
MATERIALS	Polycarbonate lens and housing
VOLT/AMP	12.8VDC - .421A Stop/Turn, .114A Tail
WT/DIMS	.375 lbs. / 6.5" x 2.28" x 1.80"
WARRANTY	Lifetime LED Warranty

STL111 GROMMET MOUNT SERIES

GloLight® 6" Sealed LED Lights

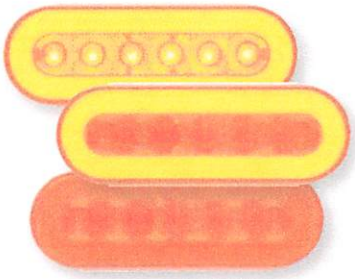
PATENTED TECHNOLOGY

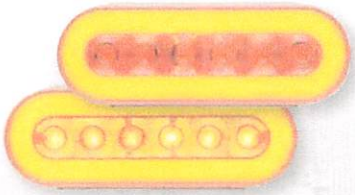
- Sonically sealed, waterproof
- Mount in any 360 degree position
- Available in tinted and clear lens models
- Available with standard PL-3 or optional weathertight connection



STL111RB


STL111RCB


STL111AB

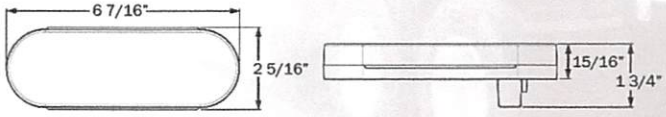

STL111ACB

BULK P/N	POLYPACK P/N	DESCRIPTION	QTY
RED STOP/TURN/TAIL LIGHT - 22 DIODES			
STL111RB	STL111RBP	PL-3 connection	10
STL111R1224B	STL111R1224BP	PL-3 connection, 12/24V	10
STL111RMB	STL111RMBP	Weathertight	10
STL111RHB	STL111RHBP	Hard wired	10
STL111RCB	STL111RCBP	Clear lens, red diodes, PL-3	10
STL111RCMB	STL111RCMBP	Clear lens, red diodes, weathertight	10
YELLOW PARKING/TURN SIGNAL - 22 DIODES			
STL111AB	STL111ABP	PL-3	10
STL111ACB	STL111ACBP	Clear lens, yellow diodes, PL-3	10
ACCESSORIES			
A70GB	A70GBP	Grommet	50
A45PB	A45PBP	Pigtail, 3-wire	100
A47PB	A47PBP	Right angle pigtail, 3-wire	100
A45PMB	A45PMBP	Weathertight pigtail	100
AL45PWTB	AL45PWTBP	Weathertight to PL-3 adaptor	50
BK70BB	BK70BBP	Black steel bracket	10
A77S1B	A77S1BP	Gray, flat design steel bracket	50
RETAIL			
TLL112RK	Retail Ready	**Try Me** kit with (2) ea. STL111RB, A70GB and A47PB, clam	2



TLL112RK

FMVSS	Red S2 T2 I6; Yellow I6 P
MATERIALS	Polycarbonate lens and housing
VOLT/AMP	Red: 12.8VDC - .59A Stop/Turn, .295A Tail
	Yellow: 12.8VDC - .515A Turn, .27A Parking
WT/DIMS	.35 lbs. / 6.5" x 2.25" x 1.75"
WARRANTY	Lifetime LED Warranty



HOLE CUT-OUT: 6.85" X 2.5" (1.25" R)

Vulcan™ Series V12 HD/IP Mobile DVR



12-CHANNEL DVR

DIMENSIONS
- Height: 3.5 inches
- Width: 8.7 inches
- Depth: 11.6 inches
- Weight: 5.7 pounds

TWELVE (12) A/V INPUTS
- 8 channels D1, WD1, 720P, or up to 1080P + 4 channels IP up to 1080P

VIDEO OUTPUTS
- 2 channels

AUDIO OUTPUTS
- 2 channels

CAMERA COMPATIBILITY
- 8 channels D1, WD1, 720P, or up to 1080P (see **NTSC**)
- 4 channels IP up to 1080P

STORAGE MEDIA

RECORDING MEDIUM
- One (1) 2.5" SATA hard drive and one (1) optional solid-state SD card

CAPACITY
- 1TB (standard) up to 2TB (capable) (optional) 64GB SD card up to 512GB

RECORDING OPTIONS
- SD card slot for redundant recording

INTERFACE

NETWORK DATA CONNECTION
- One RJ45 x 1 (10/100 M/1000M)

EXPANSION
- RS232 × 2, RS485 × 2

GPS INTERFACE
- Built-in, compatible with optional GPS antenna

DRIVER ACTION DETECTION

PANIC BUTTON
- The remote status indicator (panic button) can be connected to show DVR power/record status without using a video monitor
- The driver-operated panic button has the following functions:
  - Solid green LED indicates that the unit has power and is recording
  - Event marker (panic button)

DRIVER ACTION DETECTION WIRES
- 8 signal wires individually programmable to indicate alarm or event

BUILT-IN G-FORCE SENSOR

COMPRESSION FORMAT
- Video: H.264
- Audio: ADPCM, G.711A G.711U

RECORD RESOLUTION

NTSC
- 1080P, 720P, WD1(928X480), WHD1(928X240), WCIF(464X240), D1(704x480), HD1(704x240), CIF(352x240)

PAL
- 1080P, 720P, WD1(928X576), WHD1(928X288), WCIF(464X288), D1(704X576), HD1(704x288), CIF(352x288)

RECORDING OPTIONS
- **Continuous record:** System will record all channels continuously while vehicle is running (factory setting).
- **Alarm record:** System will record when an alarm is triggered.
- **Motion record:** System will record when the cameras detect motion while vehicle is running.
- **Schedule record:** System will boot and record according to user-selectable schedule.

ELECTRICAL & OPERATING REQUIREMENTS

AUTO ON/OFF DETECTION
- ACC detection

DELAY OFF SETTING
- User selectable up to 24 hours

OPERATING VOLTAGE
- 8~36VDC

OPERATING TEMPERATURE
- -14°F (-25°C) ~ +158°F (+70°C); -40°F (-40°C) ~ +158°F (+70°C) with heater

POWER CONSUMPTION
- 0W-105.3W

POWER SUPPLY

INPUT RANGE
- DC 8-36V

OUTPUT RANGE
- DC5V/DC12V

OUTPUT CURRENT
- 5V@500mA, 12V@500mA

BUILT-IN POWER PROTECTION

LOW VOLTAGE PROTECTION
- User selectable and programmed at installation

HOUSING/CASING
- Removable, shock-mounted
- Vandal-resistant locking front cover
- Shock-resistant: MIL-STD-810F
- Aluminum
- Optional fan with filter, removable for cleaning

BUILT-IN WI-FI MODULE

OPTIONAL COMPONENTS

VIRTUAL SYNCHRONIZED MAPPING
- External Virtual Synchronized Mapping™ module with North American maps
- Includes GPSV1 antenna
- Embeds GPS tracking information synchronized with recorded video footage

GPS ANTENNA

FIREPROOF BOX BACKUP

CELLULAR MODEM

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: PTR2000000003

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[X]	Addendum No. 1	[ ]	Addendum No. 6
[ ]	Addendum No. 2	[ ]	Addendum No. 7
[ ]	Addendum No. 3	[ ]	Addendum No. 8
[ ]	Addendum No. 4	[ ]	Addendum No. 9
[ ]	Addendum No. 5	[ ]	Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Sonny Merryman Inc.
Company

Authorized Signature

07/22/2020
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735
Doc Description: Addendum 2 - 156" WB DRW Narrow Body Cutaway
Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-07-14	2020-07-24 13:30:00	CRFQ 0805 PTR2000000003	3

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc.
5120 Wards Road
Evington, VA. 24550

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X C. Merryman **FEIN #** 540806-176 **DATE** 07/22/2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum 2 issued for the following reasons:

1. To extend the bid opening to Friday, July 24, 2020, at 1:30 p.m.

No other changes

INVOICE TO	SHIP TO
ACCOUNTS PAYABLE PUBLIC TRANSIT DIVISION OF BLDG 5 RM 650 1900 KANAWHA BLVD E CHARLESTON WV25305-0432 US	GENERAL MANAGER PUBLIC TRANSIT DIVISION OF KANAWHA VALLEY REGIONAL TRANSPORTATION AUTHORITY 1550 FOURTH AVE CHARLESTON WV 25324 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	156" WB DRW Narrow Body Cutaway	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
25101502	Startrans		Candidate II

Extended Description :
156" WB DRW Narrow Body Cutaway

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Question deadline 4:00 p.m.	2020-07-07

SOLICITATION NUMBER: PTR2000000003
Addendum Number: 2

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[✓] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[ ] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[ ] Other

Description of Modification to Solicitation:

Addendum 2 issued for the following reasons:

1. To extend the bid opening to Friday, July 24, 2020, at 1:30 p.m.

No other changes

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: PTR2000000003

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[ ]	Addendum No. 1	[ ]	Addendum No. 6
[X]	Addendum No. 2	[ ]	Addendum No. 7
[ ]	Addendum No. 3	[ ]	Addendum No. 8
[ ]	Addendum No. 4	[ ]	Addendum No. 9
[ ]	Addendum No. 5	[ ]	Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Sonny Merryman Inc.
Company

Authorized Signature

07/22/2020
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735
Doc Description: Addendum 2 - 156" WB DRW Narrow Body Cutaway
Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-07-14	2020-07-24 13:30:00	CRFQ 0805 PTR2000000003	3

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc.
5120 Wards Road
Evington, VA. 24550

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X **FEIN #** 540806-176 **DATE** 07/22/2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum 2 issued for the following reasons:

1. To extend the bid opening to Friday, July 24, 2020, at 1:30 p.m.

No other changes

INVOICE TO	SHIP TO
ACCOUNTS PAYABLE PUBLIC TRANSIT DIVISION OF BLDG 5 RM 650 1900 KANAWHA BLVD E CHARLESTON WV 25305-0432 US	GENERAL MANAGER PUBLIC TRANSIT DIVISION OF KANAWHA VALLEY REGIONAL TRANSPORTATION AUTHORITY 1550 FOURTH AVE CHARLESTON WV 25324 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	156" WB DRW Narrow Body Cutaway	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
25101502	Startrans		Candidate II

Extended Description :
156" WB DRW Narrow Body Cutaway

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Question deadline 4:00 p.m.	2020-07-07

SOLICITATION NUMBER: PTR2000000003
Addendum Number: 2

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[✓] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[ ] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[ ] Other

Description of Modification to Solicitation:

Addendum 2 issued for the following reasons:

1. To extend the bid opening to Friday, July 24, 2020, at 1:30 p.m.

No other changes

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

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1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

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ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: PTR2000000003

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[ ]	Addendum No. 1	[ ]	Addendum No. 6
[X]	Addendum No. 2	[ ]	Addendum No. 7
[ ]	Addendum No. 3	[ ]	Addendum No. 8
[ ]	Addendum No. 4	[ ]	Addendum No. 9
[ ]	Addendum No. 5	[ ]	Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Sonny Merryman Inc.
Company

Authorized Signature

07/22/2020
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

BID FORM #8

CERTIFICATION OF COMPLIANCE WITH FTA'S BUS TESTING REQUIREMENTS

The undersigned (Vendor/Manufacturer) certifies that the vehicle offered in this procurement complies with 49 U.S.C. 5318, as amended by MAP-21, and FTA regulations, "Bus Testing," 49 CFR Part 665.

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

7/23/2020

Date

Mark Barojak

Authorized Signature

Government Bid Sales

Title

StarTrans Bus Division of Forest River Inc.

Company Name

BID FORM #3

BUY AMERICA CERTIFICATION
ROLLING STOCK
MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

Certificate of Compliance

The bidder or offeror hereby certifies that it will comply with the requirements of section 165(b) (3), of the Surface Transportation Assistance Act of 1982, as amended, and the applicable regulations of 49 CFR 661.11:

7/23/2020
Date

Mark Barczak
Authorized Signature

StarTrans Bus Division of Forest River Inc.
Company Name

Mark Barczak
Name

Government Bid Sales
Title

Certificate for Non-Compliance
The bidder or offeror hereby certifies that it cannot comply with the requirements of section 165(b) (3) of the Surface Transportation Assistance Act of 1982, as amended, but may qualify for an exception to the requirement consistent with section 165(b) (2) or (b) (4) of the Surface Transportation Assistance Act, as amended, and the applicable regulations in 49 CFR 661.7.

Date

Authorized Signature

Company Name

Name

Title

StarTrans Bus — Pre-Award BUY AMERICA CERTIFICATION

This certifies compliance with FTA Buy America Regulations set forth in 49 C.F.R. § 661.11 for each component that more than 70% of the subcomponents, by cost, are of U.S. origin/manufacture and is manufactured in the U.S. Manufacturer attests that the U.S. content of subcomponents, by cost is as indicated below.

COMPONENT NAME	MANUFACTURER NAME		% U.S. CONTENT	%FOREIGN CONTENT
CLASS A, CII 22' 156"WB ON FORD TRANSIT 350	StarTrans Bus		73.22%	26.78%
SUBCOMPONENT NAME	**MANUFACTURER NAME**	**MFG LOCATION**	**% OF TOTAL**	
Chassis	Ford Motor Co.	U.S.	53.03%	
Exterior Mirrors	ROSCO	U.S.	0.25%	
A/C System	TransAir	U.S.	7.01%	
Floor Heater	ProAir	U.S.	0.43%	
Rear door	Challenger Door	U.S.	0.44%	
Camera DVR	Angel trax	U.S.	2.79%	
Electrical system	LGS	U.S.	0.91%	
Seating	Freedman	U.S.	8.05%	
Roof hatch	Transpec	U.S.	0.32%	
		U.S.	0.00%	
		U.S.	0.00%	
		U.S.	0.00%	
		U.S.	0.00%	

MAJOR ACTIVITIES UNDERTAKEN AT THE FINAL ASSEMBLY LOCATION

All purchasing of raw and assembled materials including the chassis, fabrication and welding of the frame, prime paint, installation of all wood, fabric, FRP, aluminum and/or other body panel and/or trim materials, installation of doors and windows, HVAC components and systems, electrical systems, installation of any required options such as wheel chair lifts, tie down kits, seats, radios and optional electronic items, if any, complete undercoat, exterior paint and/or graphics if ordered, full road test, rain booth test and all other final quality functions as needed to ensure compliance with the contract.

FINAL ASSEMBLY LOCATION: 2367 CENTURY DRIVE, GOSHEN, IN 46528

BODY V.I.N. OF UNITS DELIVERED UNDER POST DELIVERY BUY AMERICA:

TBD

FINAL ASSEMBLY % OF TOTAL COST NOT INCLUDED IN THE MATERIAL COSTS ABOVE: **4.62%**

FINAL ASSEMBLY $$ NOT INCLUDED IN THE COSTS ABOVE **$2,456.27**

Mark Barczak
AUTHORIZED SIGNATURE

Government Bids
TITLE

7/23/2020
DATE

Mark Barczak
PRINT NAME

StarTrans Bus — Pre-Award BUY AMERICA CERTIFICATION

This certifies compliance with FTA Buy America Regulations set forth in 49 C.F.R. § 661.11 for each component that more than 70% of the subcomponents, by cost, are of U.S. origin/manufacture and is manufactured in the U.S. Manufacturer attests that the U.S. content of subcomponents, by cost is as indicated below.

COMPONENT NAME	MANUFACTURER NAME		% U.S. CONTENT	%FOREIGN CONTENT
CLASS B,E,H,K,N CII 22' 156"WB ON FORD TRANSIT 350	StarTrans Bus		71.85%	28.15%
SUBCOMPONENT NAME	**MANUFACTURER NAME**	**MFG LOCATION**	**% OF TOTAL**	
Chassis	Ford Motor Co.	U.S.	44.11%	
Exterior Mirrors	ROSCO	U.S.	0.21%	
A/C System	TransAir	U.S.	5.83%	
Floor Heater	ProAir	U.S.	0.36%	
Rear door	Challenger Door	U.S.	1.59%	
Camera DVR	Angel trax	U.S.	2.32%	
Electrical system	LGS	U.S.	0.75%	
Seating	Freedman	U.S.	6.55%	
Roof hatch	Transpec	U.S.	0.27%	
Wheelchair Lift		U.S.	5.18%	
Wheelchair Restraints		U.S.	0.51%	
Pass. Entry door	Braun	U.S.	0.33%	
Destination signs	Q'Straint	U.S.	3.84%	
	A and M door			
Destination signs	Trans-Sign			

MAJOR ACTIVITIES UNDERTAKEN AT THE FINAL ASSEMBLY LOCATION

All purchasing of raw and assembled materials including the chassis, fabrication and welding of the frame, prime paint, installation of all wood, fabric, FRP, aluminum and/or other body panel and/or trim materials, installation of doors and windows, HVAC components and systems, electrical systems, installation of any required options such as wheel chair lifts, tie down kits, seats, radios and optional electronic items, if any, complete undercoat, exterior paint and/or graphics if ordered, full road test, rain booth test and all other final quality functions as needed to ensure compliance with the contract.

FINAL ASSEMBLY LOCATION: 2367 CENTURY DRIVE, GOSHEN, IN 46528

BODY V.I.N. OF UNITS DELIVERED UNDER POST DELIVERY BUY AMERICA:

TBD

FINAL ASSEMBLY % OF TOTAL COST NOT INCLUDED IN THE MATERIAL COSTS ABOVE: **3.87%**

FINAL ASSEMBLY $$ NOT INCLUDED IN THE COSTS ABOVE **$2,456.27**

Mark Barczak
AUTHORIZED SIGNATURE

Government Bids
TITLE

7/23/2020
DATE

Mark Barczak
PRINT NAME

StarTrans Bus — Pre-Award BUY AMERICA CERTIFICATION

This certifies compliance with FTA Buy America Regulations set forth in 49 C.F.R. § 661.11 for each component that more than 70% of the subcomponents, by cost, are of U.S. origin/manufacture and is manufactured in the U.S. Manufacturer attests that the U.S. content of subcomponents, by cost is as indicated below.

COMPONENT NAME	MANUFACTURER NAME		% U.S. CONTENT	%FOREIGN CONTENT
CLASS C,F,I,L,O CII 22' 156"WB ON FORD TRANSIT 350	StarTrans Bus		72.12%	27.88%
SUBCOMPONENT NAME	**MANUFACTURER NAME**	**MFG LOCATION**	**% OF TOTAL**	
Chassis	Ford Motor Co.	U.S.	44.56%	
Exterior Mirrors	ROSCO	U.S.	0.21%	
A/C System	TransAir	U.S.	5.89%	
Floor Heater	ProAir	U.S.	0.36%	
Rear door	Challenger Door	U.S.	1.61%	
Camera DVR	Angel trax	U.S.	2.34%	
Electrical system	LGS	U.S.	0.76%	
Seating	Freedman	U.S.	5.65%	
Roof hatch	Transpec	U.S.	0.27%	
Wheelchair Lift	Braun	U.S.	5.23%	
Wheelchair Restraints	Q'Straint	U.S.	1.04%	
Pass. Entry door	A and M door	U.S.	0.33%	
Destination signs	Trans-Sign	U.S.	3.87%	

MAJOR ACTIVITIES UNDERTAKEN AT THE FINAL ASSEMBLY LOCATION

All purchasing of raw and assembled materials including the chassis, fabrication and welding of the frame, prime paint, installation of all wood, fabric, FRP, aluminum and/or other body panel and/or trim materials, installation of doors and windows, HVAC components and systems, electrical systems, installation of any required options such as wheel chair lifts, tie down kits, seats, radios and optional electronic items, if any, complete undercoat, exterior paint and/or graphics if ordered, full road test, rain booth test and all other final quality functions as needed to ensure compliance with the contract.

FINAL ASSEMBLY LOCATION: 2367 CENTURY DRIVE, GOSHEN, IN 46528

BODY V.I.N. OF UNITS DELIVERED UNDER POST DELIVERY BUY AMERICA:

TBD

FINAL ASSEMBLY % OF TOTAL COST NOT INCLUDED IN THE MATERIAL COSTS ABOVE: 3.91%

FINAL ASSEMBLY $$ NOT INCLUDED IN THE COSTS ABOVE $2,456.27

Mark Barczak
AUTHORIZED SIGNATURE

Government Bids
TITLE

7/23/2020
DATE

Mark Barczak
PRINT NAME

StarTrans Bus — Pre-Award BUY AMERICA CERTIFICATION

This certifies compliance with FTA Buy America Regulations set forth in 49 C.F.R. § 661.11 for each component that more than 70% of the subcomponents, by cost, are of U.S. origin/manufacture and is manufactured in the U.S. Manufacturer attests that the U.S. content of subcomponents, by cost is as indicated below.

COMPONENT NAME	MANUFACTURER NAME		% U.S. CONTENT	%FOREIGN CONTENT
CLASS D,G,J,M,P CII 22' 156"WB ON FORD TRANSIT 350	StarTrans Bus		72.38%	27.62%
SUBCOMPONENT NAME	**MANUFACTURER NAME**	**MFG LOCATION**	**% OF TOTAL**	
Chassis	Ford Motor Co.	U.S.	44.01%	
Exterior Mirrors	ROSCO	U.S.	0.21%	
A/C System	TransAir	U.S.	5.82%	
Floor Heater	ProAir	U.S.	0.36%	
Rear door	Challenger Door	U.S.	1.59%	
Camera DVR	Angel trax	U.S.	2.32%	
Electrical system	LGS	U.S.	0.75%	
Seating	Freedman	U.S.	6.20%	
Roof hatch	Transpec	U.S.	0.27%	
Wheelchair Lift	Braun	U.S.	5.17%	
Wheelchair Restraints	Q'Straint	U.S.	1.54%	
Pass. Entry door	A and M door	U.S.	0.33%	
Destination signs	Trans-Sign	U.S.	3.83%	

MAJOR ACTIVITIES UNDERTAKEN AT THE FINAL ASSEMBLY LOCATION

All purchasing of raw and assembled materials including the chassis, fabrication and welding of the frame, prime paint, installation of all wood, fabric, FRP, aluminum and/or other body panel and/or trim materials, installation of doors and windows, HVAC components and systems, electrical systems, installation of any required options such as wheel chair lifts, tie down kits, seats, radios and optional electronic items, if any, complete undercoat, exterior paint and/or graphics if ordered, full road test, rain booth test and all other final quality functions as needed to ensure compliance with the contract.

FINAL ASSEMBLY LOCATION: 2367 CENTURY DRIVE, GOSHEN, IN 46528

BODY V.I.N. OF UNITS DELIVERED UNDER POST DELIVERY BUY AMERICA:

TBD

FINAL ASSEMBLY % OF TOTAL COST NOT INCLUDED IN THE MATERIAL COSTS ABOVE: **3.87%**

FINAL ASSEMBLY $$ NOT INCLUDED IN THE COSTS ABOVE **$2,456.27**

Mark Barczak
AUTHORIZED SIGNATURE

Government Bids
TITLE

7/23/2020
DATE

Mark Barczak
PRINT NAME

BID FORM #2

DISADVANTAGED VEHICLELINESS ENTERPRISE VENDORS/ MANUFACTURERS CERTIFICATION

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

(Check appropriate statement)

☑ The Vendor, if a transit vehicle manufacturer, hereby certifies that it has complied with the requirements of 49 CFR Section 26.49 by submitting an annual DBE goal to the Federal Transit Administration (FTA). The goal has either been approved or not disapproved by FTA.

☐ The Vendor, if a non-manufacturing supplier, hereby certifies that the manufacturer of the transit vehicle to be supplied has complied with the above-referenced requirement of 49 CFR Section 26.49.

7/23/2020
Date

M. Banojak
Authorized Signature

Government Bid Sales
Title

StarTrans Bus Division of Forest River Inc.
Company Name

BID FORM #4

FEDERAL MOTOR VEHICLE
SAFETY STANDARDS CERTIFICATION

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

The vendor hereby certifies that it shall submit, as required by Title 49 of the CFR, Part 663 - Subpart D, it's self-certification information stating that the vehicle(s) will comply with the relevant Federal Motor Vehicle Safety Standards issued by the National Highway Traffic Safety Administration in Title 49 of the Code of Federal Regulations, Part 571.

7/23/2020
Date

Mark Barojas
Authorized Signature

Government Bid Sales
Title

StarTrans Bus Division of Forest River Inc.
Company Name

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735

Doc Description: 156" WB DRW Narrow Body Cutaway

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-06-30	2020-07-17 13:30:00	CRFQ 0805 PTR2000000003	1

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc.
5120 Wards Road
Evington, VA. 24550
1-800-533-1006

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X  **FEIN #** 540806-176 **DATE** 07/22/2020

All offers subject to all terms and conditions contained in this solicitation

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

C. Chad Seals - Commercial sales
(Name, Title)

C. Chad Seals - Commercial sales
(Printed Name and Title)

5120 Wards Road Evington, VA. 24550
(Address)

(P)(800) 533-1006 (F)(434) 821-4456
(Phone Number) / (Fax Number)

chad@sonnymerryman.com
(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Sonny Merryman Inc.
(Company)

C. Chad Seals - Commercial Sales
(Authorized Signature) (Representative Name, Title)

C. Chad Seals - Commercial Sales
(Printed Name and Title of Authorized Representative)

07/22/2020
(Date)

(P)(800) 533-1006 (F)(434) 821-4456
(Phone Number) (Fax Number)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.:

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

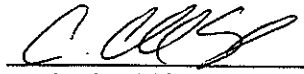
Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

☒ Addendum No. 1	☐ Addendum No. 6
☒ Addendum No. 2	☐ Addendum No. 7
☐ Addendum No. 3	☐ Addendum No. 8
☐ Addendum No. 4	☐ Addendum No. 9
☐ Addendum No. 5	☐ Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Sonny Merryman Inc.
Company


Authorized Signature

07/22/2020
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

BID FORM #1

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

Location(s) of the Technical Service Representative(s) and parts distribution center(s) closest or in the State of West Virginia.

Location(s) of the technical service representative(s).

Name: Brady Childress

Address: 5120 Wards Road

Evington, VA. 24550

Telephone: 1-800-533-1006 Ext. 8620

Name: _____

Address: _____

_____

Telephone: _____

Location(s) of parts distribution center(s).

Name: Derek Shelton

Address: 5120 Wards Road

Evington, VA. 24550

Telephone: 1-800-533-1006 Ext.8633

Name: _____

Address: _____

_____

Telephone: _____

BID FORM #2

DISADVANTAGED VEHICLEINESS ENTERPRISE VENDORS/ MANUFACTURERS CERTIFICATION

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

(Check appropriate statement)

☐ The Vendor, if a transit vehicle manufacturer, hereby certifies that it has complied with the requirements of 49 CFR Section 26.49 by submitting an annual DBE goal to the Federal Transit Administration (FTA). The goal has either been approved or not disapproved by FTA.

☒ The Vendor, if a non-manufacturing supplier, hereby certifies that the manufacturer of the transit vehicle to be supplied has complied with the above-referenced requirement of 49 CFR Section 26.49.

07/22/2020
Date


Authorized Signature

Commercial Sales
Title

Sonny Merryman Inc.
Company Name

BID FORM #3

BUY AMERICA CERTIFICATION
ROLLING STOCK
MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

Certificate of Compliance

The bidder or offeror hereby certifies that it will comply with the requirements of section 165(b) (3), of the Surface Transportation Assistance Act of 1982, as amended, and the applicable regulations of 49 CFR 661.11:

07/22/2020
Date


Authorized Signature

Sonny Merryman Inc
Company Name

C. Chad Seals
Name

Commercial Sales
Title

Certificate for Non-Compliance
The bidder or offeror hereby certifies that it cannot comply with the requirements of section 165(b) (3) of the Surface Transportation Assistance Act of 1982, as amended, but may qualify for an exception to the requirement consistent with section 165(b) (2) or (b) (4) of the Surface Transportation Assistance Act, as amended, and the applicable regulations in 49 CFR 661.7.

Date

Authorized Signature

Company Name

Name

Title

BID FORM #4

FEDERAL MOTOR VEHICLE SAFETY STANDARDS CERTIFICATION

MANDATORY BID FORM -- MUST BE SUBMITTED WITH BID

The vendor hereby certifies that it shall submit, as required by Title 49 of the CFR, Part 663 - Subpart D, it's self-certification information stating that the vehicle(s) will comply with the relevant Federal Motor Vehicle Safety Standards issued by the National Highway Traffic Safety Administration in Title 49 of the Code of Federal Regulations, Part 571.

07/22/2020
Date


Authorized Signature

Commercial Sales
Title

Sonny Merryman Inc
Company Name

BID FORM #5

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

CERTIFICATION OF PRIMARY PARTICIPANT REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

The Primary Participant (applicant for an FTA grant or cooperative agreement, or potential contractor for a major third-party contract),

Sonny Merryman Inc. (COMPANY NAME) certifies to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and

4. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

If the primary participant (applicant for an FTA grant, or cooperative agreement, or potential third-party contractor) is unable to certify to any of the statements in this certification, the participant shall attach an explanation to this certification.)

THE PRIMARY PARTICIPANT (APPLICANT FOR AN FTA GRANT OR COOPERATIVE AGREEMENT, OR POTENTIAL CONTRACTOR FOR A MAJOR THIRD-PARTY CONTRACT),

Sonny Merryman Inc., CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND UNDERSTANDS THAT THE PROVISIONS OF 31 U.S.C. SECTIONS 3801 ET SEQ. ARE APPLICABLE THERETO.

C. [illegible] – Commercial Sales

Signature and Title of Authorized Official

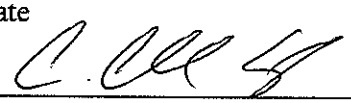
BID FORM #6

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

VENDOR'S CERTIFICATION OF UNDERSTANDING AND ACCEPTANCE

The Vendor hereby certifies that all Technical Specifications and Contract Terms and Conditions have been carefully reviewed, are fully understood and shall be adhered to in performance and completion of any contract resulting from this bid.

07/22/2020
Date


Authorized Signature

Commercial Sales
Title

Sonny Merryman Inc.
Company Name

SPECIFICATION COMPLIANCE

NOTE: Please check if what is offered is in exact compliance with specifications. **Any discrepancies must be listed as an attachment to the bid proposal. Exact dimensions and/or descriptions must be provided as a part of the Vendor's bid proposal when submitted.**

☒ Bid proposal submitted meets and/or exceeds all specification requirements.

☐ Bid proposal submitted contains deviations from specification requirements. Detailed descriptions of these deviations have been provided with this bid proposal.

BID FORM #7

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

CERTIFICATION OF RESTRICTIONS ON LOBBYING

The undersigned (Vendor, Contractor) certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid by or on behalf of the undersigned, to any person for influence or attempt to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress regarding the award of a Federal grant, loan (including a line of credit), cooperative agreement, loan guarantee, or loan insurance, or the extension, continuation, renewal, amendment, or modification of any Federal grant, loan (including a line of credit), cooperative agreement, loan guarantee, or loan insurance.

2. If any funds other than Federal appropriated funds have been or will be paid to any person to influence or attempt to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or any employee of a Member of Congress in connection with any application for a Federal grant, loan (including a line of credit), cooperative agreement, loan guarantee, or loan insurance, the undersigned assures that it will complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," Rev. 7-97; and

3. The undersigned understands that the language of this certification shall be included in the award documents for all sub awards at all tiers (including subcontracts, sub grants, sub agreements. and contracts under grants, loans (including a line of credit), cooperative agreements, loan guarantees, and loan insurance.

Undersigned understands that this certification is a material representation of fact upon which reliance is placed by the Federal government and that submission of this certification is a prerequisite for providing a Federal grant, loan (including a line of credit), cooperative agreement, loan guarantee, or loan insurance for a transaction covered by 31 U.S.C. 1352. The undersigned also understands that any person who fails to file a required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The (Vendor, Contractor) Sonny Merryman Inc., certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the (Vendor, Contractor understands and agrees that the provisions of 31 U.S.C. §§ 3801, et seq., apply to this certification and disclosure.

07/22/2020
Date

Authorized Signature

Commercial Sales
Title

REQUEST FOR QUOTATION
156" Wheelbase Dual Rear Wheel (DRW) Narrow Body Cutaway

BID FORM #8

CERTIFICATION OF COMPLIANCE WITH FTA'S BUS TESTING REQUIREMENTS

The undersigned (Vendor/Manufacturer) certifies that the vehicle offered in this procurement complies with 49 U.S.C. 5318, as amended by MAP-21, and FTA regulations, "Bus Testing," 49 CFR Part 665.

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

07/22/2020

Date

Authorized Signature

Commercial Sales

Title

Sonny Merryman Inc

Company Name

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Sonny Merryman Inc.

Authorized Signature: _____ Date: 07/22/2020

State of Virginia

County of Campbell, to-wit:

Taken, subscribed, and sworn to before me this 22nd day of July, 2020.

My Commission expires June 30, 2024.

AFFIX SEAL HERE

KATIE HOGAN MILLNER
NOTARY PUBLIC
REG # 7698923
COMMISSION EXPIRES 6/30/2024
COMMONWEALTH OF VIRGINIA

NOTARY PUBLIC _____

West Virginia Ethics Commission

Disclosure of Interested Parties to Contracts

(Required by *W. Va. Code* § 6D-1-2)

Name of Contracting Business Entity: Sonny Merryman Inc. **Address:** 5120 Wards Road Evington, VA 24550

Name of Authorized Agent: C. Chad Seals **Address:** Same as above

Contract Number: PTR2000000003 **Contract Description:** 156" WB DRW Narrow Body Cutaway

Governmental agency awarding contract: _____

☒ **Check here if this is a Supplemental Disclosure**

List the Names of Interested Parties to the contract which are known or reasonably anticipated by the contracting business entity for each category below *(attach additional pages if necessary)*:

1. **Subcontractors or other entities performing work or service under the Contract**
   ☐ Check here if none, otherwise list entity/individual names below.

2. **Any person or entity who owns 25% or more of contracting entity (not applicable to publicly traded entities)**
   ☐ Check here if none, otherwise list entity/individual names below.

3. **Any person or entity that facilitated, or negotiated the terms of, the applicable contract (excluding legal services related to the negotiation or drafting of the applicable contract)**
   ☐ Check here if none, otherwise list entity/individual names below.

Signature: C. Chad Seals Date Signed: 07/23/2020

KATIE HOGAN MILLNER NOTARY PUBLIC REG # 7698923 COMMISSION EXPIRES 6/30/2024 COMMONWEALTH OF VIRGINIA

Notary Verification

State of Virginia, County of Campbell

I, C. Chad Seals, the authorized agent of the contracting business entity listed above, being duly sworn, acknowledge that the Disclosure herein is being made under oath and under the penalty of perjury.

Taken, sworn to and subscribed before me this 22nd day of July, 2020

Katie Millner
Notary Public's Signature

To be completed by State Agency:

Date Received by State Agency: _____

Date submitted to Ethics Commission: _____

Governmental agency submitting Disclosure: _____

Revised June 8, 2018

FIRM'S NAME AND ADDRESS		PAYMENT REMITTANCE ADDRESS	
Name: Sonny Merryman Inc.		**Name:** Sonny Merryman Inc.	
Address: 5120 Wards Road		**Address:** 5120 Wards Road	
P.O. Box or Suite No.		**P.O. Box or Suite No.**	
City Evington		**City** Evington	
State Virginia	**Zip** 24550	**State** Virginia	**Zip** 24550

Contact Person: C. Chad Seals

Telephone No.	Fax No.	E-Mail Address:
1-800-533-1006	1-434-821-4456	chad@sonnymerryman.com

FEDERAL EMPLOYER I.D. NUMBER:	SOCIAL SECURITY NUMBER: (If Federal I.D. is not applicable)
54-0806176	
Payment Terms: Net/30	**Age of Firm:** 52 Years

Disadvantaged Business Enterprise:
( ) Yes (X) No
If yes, certified by which agency?

( ) Female ( ) Male
( ) Black ( ) Hispanic ( ) Asian American
( ) Indian/Alaskan Native ( ) Other
( ) Not Applicable

Annual Gross Receipts: ( ) less than $500,000 ( ) $500,000 to $1 million
( ) $1 million to $5 million (X) greater than $5 million

Contractor's License Type: West Virginia Business Registration

Contractor's License Number: 234-1838

License Expiration Date:

Signature of Contractor's Authorized Official	Name and Title of Contractor's Authorized Official
C. Chad Seals	C. Chad Seals - Commercial Sales

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735

Doc Description: Addendum 2 - 156" WB DRW Narrow Body Cutaway

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-07-14	2020-07-24 13:30:00	CRFQ 0805 PTR2000000003	3

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc
5120 Wards Road
Evington, VA. 24550
1-800-533-1006

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X FEIN # 540806-176 DATE 07/23/2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum 2 issued for the following reasons:

1. To extend the bid opening to Friday, July 24, 2020, at 1:30 p.m.

No other changes

INVOICE TO	SHIP TO
ACCOUNTS PAYABLE PUBLIC TRANSIT DIVISION OF BLDG 5 RM 650 1900 KANAWHA BLVD E CHARLESTON WV25305-0432 US	GENERAL MANAGER PUBLIC TRANSIT DIVISION OF KANAWHA VALLEY REGIONAL TRANSPORTATION AUTHORITY 1550 FOURTH AVE CHARLESTON WV 25324 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	156" WB DRW Narrow Body Cutaway	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
25101502	Startrans		Candidate II

Extended Description :
156" WB DRW Narrow Body Cutaway

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Question deadline 4:00 p.m.	2020-07-07

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735

Doc Description: Addendum 1 - 156" WB DRW Narrow Body Cutaway

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-07-08	2020-07-17 13:30:00	CRFQ 0805 PTR2000000003	2

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc.
5120 Wards Road
Evington, VA. 24550
1-800-533-1006

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X **FEIN #** 540806-176 **DATE** 07/23/2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum 1 issued for the following reasons:

1. To publish a copy of vendor questions with responses.

No other changes.

INVOICE TO	SHIP TO
ACCOUNTS PAYABLE PUBLIC TRANSIT DIVISION OF BLDG 5 RM 650 1900 KANAWHA BLVD E CHARLESTON WV25305-0432 US	GENERAL MANAGER PUBLIC TRANSIT DIVISION OF KANAWHA VALLEY REGIONAL TRANSPORTATION AUTHORITY 1550 FOURTH AVE CHARLESTON WV 25324 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	156" WB DRW Narrow Body Cutaway	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
25101502	Startrans		Candidate II

Extended Description :

156" WB DRW Narrow Body Cutaway

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Question deadline 4:00 p.m.	2020-07-07

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735
Doc Description: 156" WB DRW Narrow Body Cutaway
Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-06-30	2020-07-17 13:30:00	CRFQ 0805 PTR2000000003	1

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc.
5120 Wards Road
Evington, VA. 24550
1-800-533-1006

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X [signature] **FEIN #** 540806-176 **DATE** 07/23/2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

The West Virginia Purchasing Division for the Agency, The West Virginia Division of Public Transit is soliciting bids from qualified vendors to establish an "Open-End" contract for the purchase of 156" Wheelbase Dual Rear Wheel (DRW) Narrow Body Cutaway vehicles per the Specifications, Terms & Conditions and bid requirements as attached

INVOICE TO	SHIP TO
ACCOUNTS PAYABLE	GENERAL MANAGER
PUBLIC TRANSIT DIVISION OF	PUBLIC TRANSIT DIVISION OF
BLDG 5 RM 650	KANAWHA VALLEY REGIONAL TRANSPORTATION AUTHORITY
1900 KANAWHA BLVD E	1550 FOURTH AVE
CHARLESTON WV25305-0432	CHARLESTON WV 25324
US	US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	156" WB DRW Narrow Body Cutaway	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
25101502	Startrans		Candidate II

Extended Description :

156" WB DRW Narrow Body Cutaway

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Question deadline 4:00 p.m.	2020-07-07

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

U.S. Department
of Transportation
**Federal Transit
Administration**

1200 New Jersey Avenue SE
Washington, D.C. 20590

July 7, 2017

Larry Hall
Director of Engineering
Starcraft Bus, Division of Forest River, Inc.
2367 Century Drive
Goshen, IN 46528

Dear Mr. Hall,

You sent letters to FTA dated November 7, 2014 and November 13, 2014 and an email dated December 2, 2014 in which you requested assistance from the Federal Transit Administration (FTA) concerning the applicability of the Bus Testing Regulation (49 CFR Part 665) to Starcraft bus models being sold as Startrans bus models. In those letters, email and subsequent phone discussions you indicated that:

- Forest River Inc. has purchased the "Startrans" brand. As a result, Forest River intends to offer comparable Starcraft bus models branded as existing Startrans bus models and leverage the existing Startrans bus dealer network to deliver them to FTA grantees.

- The future Startrans bus models will be produced on the same production line as the comparable Starcraft bus models. All future StarTrans Bus models will be structurally the same as the Starcraft Bus model, but will cosmetically have the StarTrans Bus model body lines and badging.

- The remaining Startrans bus production runs to fulfill open contracts will be completed on the Startrans production lines. Once those are completed, all future Startrans bus models will be Starcraft products.

- Starcraft would like to use the existing Starcraft bus testing reports as evidence of satisfying the Bus Testing regulation for the future Startrans bus models built on the Starcraft production lines. The corresponding Starcraft bus model for each Startrans bus model is provided in the table below. The test report for the Starcraft Allstar is PTI-BT-0518. This report also covers the Starlite bus model which is a narrow body version of the Allstar. The test report for the Allstar XL is PTI-BT-0815.

Existing Startrans Bus Model	Corresponding Starcraft Bus Model
Senator II Chassis: Ford E-350/450 & GM 3500/4500	**Allstar** Chassis: Ford E-350/450 & GM 3500/4500
Senator II MFSAB Chassis: Ford E-350/450 & GM 3500/4500	**Allstar** Chassis: Ford E-350/450 & GM 3500/4500
Candidate II Chassis: Ford E-350/450	**Starlite** Chassis: Ford E-350/450
Senator II HD Chassis: Ford F-450/550	**Allstar XL** Chassis: Ford F-450/550

You asked FTA to determine if any testing would be required to offer the existing Starcraft bus models with the "Startrans" name as identified above. FTA reviewed your request and determined that the Starcraft Allstar, Starlite, and Allstar XL built on the Starcraft production line can be offered to FTA grantees as the Startrans Senator II, Senator II MFSAB, Candidate II, Senator II HD **without any additional testing.** You were advised that Starcraft should submit the latest comparable chassis test report that reflects the correct chassis, fuel type and fuel conversion supplier (if an alternative fuel conversion) and powertrain of the Startrans bus being offered to FTA grantees, in addition to submitting the applicable Starcraft test report (PTI-BT-0518 or PTI-BT-0815).

This revised letter is to confirm that **Starcraft Starlite Transit is the same as the StarTran's Candidate II Transit**. Similarly to your previous representation, both buses are built on the Ford Transit chassis on the same assembly line in the same manner and with the same materials. Bus Testing Report number LTI-BT-R1609 is applicable to both buses.

Existing Startrans Bus Model	Corresponding Starcraft Bus Model
Candidate II Chassis: Ford Transit	**Starlite** Chassis: Ford Transit

This determination is based on the changes outlined to FTA as stated above. Should you make any other changes to the bus models, additional testing may be required. If you require any further assistance with this or other matters concerning Bus Testing, I encourage you to consult the resources provided at www.transit.dot.gov/research-innovation/bus-testing. If you still have questions after checking this website, please feel free to contact me.

Sincerely,

Marcel Belanger
Bus Testing Program Manager
Office of Technology, TRI-20
marcel.belanger@dot.gov
202-366-0725

FEDERAL TRANSIT BUS TEST

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

Manufacturer: Starcraft Bus a Division of Forest River, Inc.
Model: Starlite Transit

Submitted for Testing in Service-Life Category 5 Year /150,000 Miles

SEPTEMBER 2016

Report Number: LTI-BT-R1609

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

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

FEDERAL TRANSIT BUS TEST

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

In accordance with CFR 49, Volume 7, Part 665

Manufacturer: Starcraft Bus a Division
of Forest River, Inc.
Manufacturer's address: 2367 Century Drive
Goshen, IN 46528

Model: Starlite Transit

Submitted for Testing in Service-Life Category
5 Year /150,000 Miles

Report Number: LTI-BT-R1609

ACCREDITED
Mechanical Testing Certificate 3172.01

Quality Authorization | Director, Bus Research and Testing Center (Title) | 9/23/16 (Date)

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EXECUTIVE SUMMARY

Starcraft Bus a Division of Forest River, Inc., submitted a model Starlite Transit, gasoline-powered 12 seat (including the driver) 23-foot bus, for a 5 yr/150,000 mile STURAA test. The odometer reading at the time of delivery was 32 miles. Testing started on May 31, 2016 and was completed on September 1, 2016. The Check-In section of the report provides a description of the bus and specifies its major components.

The primary part of the test program is the Structural Durability Test, which also provides the information for the Maintainability and Reliability results. The Structural Durability Test was started on April 11, 2016 and was completed on August 4, 2016.

The interior of the bus is configured with seating for 12 passengers including the driver plus 2 wheelchair positions. Note: this test bus is not designed to accommodate standing passengers, therefore GVW and SLW will be the same load. At 150 lbs per person and 600 lbs per wheelchair position, this load results in a measured gross vehicle weight of 10,290 lbs. The first segment of the Structural Durability Test, GVW, and the middle segment SLW were performed with the test bus loaded to 10,290 lbs. The final segment was performed at a curb weight of 7,590 lbs. Durability driving resulted in unscheduled maintenance and failures that involved a variety of subsystems. A description of failures, and a complete and detailed listing of scheduled and unscheduled maintenance is provided in the Maintainability section of this report.

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

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

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

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

and gradeability test data are provided in Section 4, Performance. The average time to obtain 50 mph was 13.66 seconds. The Stopping Distance phase of the Brake Test was completed with the following results; for the Uniform High Friction Test average stopping distances were 17.39' at 20 mph, 36.97' at 30 mph, 71.68' at 40 mph and 90.03' at 45 mph. The average stopping distance for the Uniform Low Friction Test was 22.41'. There was no deviation from the test lane during the performance of the Stopping Distance phase. During the Stability phase of Brake Testing the test bus experienced no deviation from the test lane during both approaches to the Split Friction Road surface. The Parking Brake phase was completed with the test bus maintaining the parked position for the full five minute period with no slip or roll observed in both the uphill and downhill positions.

The Shakedown Test produced a maximum final loaded deflection of 0.105 inches with a permanent set ranging between -0.002 to 0.005 inches under a distributed static load of 5,700 lbs. The Distortion Test was completed with all subsystems, doors and escape mechanisms operating properly. No water leakage was observed throughout the test. All subsystems operated properly.

The test bus submitted for testing was not equipped with any type of tow eyes or tow hooks, therefore the Static Tow Test was not performed. The Dynamic Towing Test was performed by means of a front-lift tow. The towing interface was accomplished using a hydraulic under-lift wrecker. The bus was towed without incident and no damage resulted from the test. The manufacturer does not recommend towing the bus from the rear, therefore, a rear test was not performed. The Jacking and Hoisting Tests were also performed without incident. The bus was found to be stable on the jack stands, and the minimum jacking clearance observed with a tire deflated was 6.1 inches.

A Fuel Economy Test was run on simulated central business district, arterial, and commuter courses. The results were 9.94 mpg, 10.03 mpg, and 17.72 mpg respectively; with an overall average of 11.40 mpg.

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

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

ABBREVIATIONS

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

TEST BUS CHECK-IN

I. OBJECTIVE

The objective of this task is to log in the test bus, assign a bus number, complete the vehicle data form, and perform a safety check.

II. TEST DESCRIPTION

The test consists of assigning a bus test number to the bus, cleaning the bus, completing the vehicle data form, obtaining any special information and tools from the manufacturer, determining a testing schedule, performing an initial safety check, and performing the manufacturer's recommended preventive maintenance. The bus manufacturer must certify that the bus meets all Federal regulations.

III. DISCUSSION

The check-in procedure is used to identify in detail the major components and configuration of the bus.

The test bus consists of a Starcraft Bus a Division of Forest River, Inc., model Starlite Transit. The bus has an O.E.M. driver's door and aftermarket passenger door rear of the front axle and a dedicated handicap entrance equipped with a BraunAbility model NCL917F1B3454HB-2 handicap lift rear of the rear axle. Power is provided by a gasoline-fueled, Ford Motor Co. model 3.7 L engine coupled to a Ford Motor Co. model 6-Speed Auto Select Shift with Overdrive transmission.

The measured curb weight is 3,020 lbs. for the front axle and 4,570 lbs. for the rear axle. These combined weights provide a total measured curb weight of 7,590 lbs. There are 12 seats including the driver and room for 2 wheelchair positions. Note; this test bus is not designed to accommodate standing passengers. Gross load is 150 lb. x 12 = 1,800 lbs. + 1,200 lbs. (2 wheelchair positions) = 3,000 lbs. At full capacity, the measured gross vehicle weight is 10,290 lbs

VEHICLE DATA FORM

Bus Number: 1609	Date: 03-31-16
Bus Manufacturer: Starcraft Bus a Division of Forest River, Inc.	Vehicle Identification Number (VIN): 1FDES8PM1GKA46308
Model Number: Starlite Transit	Chassis Mfr./Mod.#: Ford Motor Co./ Transit 350HD
Personnel: E.D. & S.R.	Starting Odometer Reading: 32

WEIGHT:

Individual Wheel Reactions:

Weights (lb)	Front Axle		Middle Axle		Rear Axle	
	Curb	Street	Curb	Street	Curb	Street
CW	1,490	1,530	N/A	N/A	2,400	2,170
SLW	1,270	1,780	N/A	N/A	3,580	3,660
GVW	1,270	1,780	N/A	N/A	3,580	3,660

Total Weight Details:

Weight (lb)	CW	SLW	GVW	GAWR
Front Axle	3,020	3,050	3,050	4,130
Middle Axle	N/A	N/A	N/A	N/A
Rear Axle	4,570	7,240	7,240	7,275
Total	7,590	10,290	10,290	GVWR: 10,360

Dimensions:

Length (ft/in)	23/5.75
Width (in)	87.0
Height (in)	109
Front Overhang (in)	40.75
Rear Overhang (in)	86.0
Wheel Base (in)	155
Wheel Track (in)	Front: 67.9
	Middle: N/A
	Rear: 66.2

Bus Number: 1609	Date: 03-31-16

CLEARANCES:

Lowest Point Outside Front Axle	Location: Splash Guard Clearance(in): 8.8
Lowest Point Outside Rear Axle	Location: Exhaust Clamp Clearance(in): 10.1
Lowest Point between Axles	Location: Stepwell Clearance(in): 8.0
Ground Clearance at the center (in)	9.8
Front Approach Angle (deg)	19.5
Rear Approach Angle (deg)	9.5
Ramp Clearance Angle (deg)	5.8
Aisle Width (in)	20.2
Inside Standing Height at Center Aisle (in)	77.2

BODY DETAILS:

Body Structural Type	Integral		
Frame Material	Steel		
Body Material	Aluminum		
Floor Material	Plywood		
Roof Material	Composite		
Windows Type	■ Fixed - Bottom	■ Movable - Top	
Window Mfg./Model No.	ICI / 16CFR 1201 II ANSI Z97.1-2004 UA		
Number of Doors	1 Front	1 Rear (W/C)	1 (Passenger)
Mfr. / Model No.	Ford/O.E.M.	Challenger Door MT CRWH-30	A&M Systems 213380A3G8
Dimension of Each Door (in)	Front: 27.3 x 59.5	Rear Pass: 78x29.9	Rear W/C: 69.2 x 44.3
Passenger Seat Type	☐ Cantilever	■ Pedestal	☐ Other (explain)
Driver Seat Type	☐ Air	■ Spring	☐ Other (explain)
Mfr. / Model No.	Ford / O.E.M.		
Number of Seats (including Driver)	12		

Bus Number: 1609	Date: 03-31-16

BODY DETAILS (Contd.)

Free Floor Space (ft^2)	15.7
Height of Each Step at Normal Position (in)	Front 1. 10.3 2. 9.0 3. 8.2 4. N/A
	Middle 1. N/A 2. N/A 3. N/A 4. N/A
	Rear 1. N/A 2. N/A 3. N/A 4. N/A
Step Elevation Change - Kneeling (in)	N/A

ENGINE

Type	☐ C.I.	☐ Alternate Fuel	
	■ S.I.	☐ Other (explain)	
Mfr. / Model No.	Ford Motor Co. / 3.7 Liter		
Location	■ Front	☐ Rear	☐ Other (explain)
Fuel Type	■ Gasoline	☐ CNG	☐ Methanol
	☐ Diesel	☐ LNG	☐ Other (explain)
Fuel Induction Type	■ Injected	☐ Carburetion	
Alternator (Generator) Mfr. / Model No.	Ford / O.E.M.		
Maximum Rated Output (Volts / Amps)	12 / 220		
Air Compressor Mfr. / Model No.	N/A		
Maximum Capacity (ft^3 / min)	N/A		
Starter Type	■ Electrical	☐ Pneumatic	☐ Other (explain)
Starter Mfr. / Model No.	Ford / O.E.M.		

Bus Number: 1609	Date: 03-31-16

TRANSMISSION

Transmission Type	☐ Manual	■ Automatic	☐ Load Sensing Adaptive
Mfr. / Model No.	Ford / 6 – Speed Auto Select Shift with Overdrive		
Control Type	■ Mechanical	☐ Electrical	☐ Other
Integral Retarder	☐ Yes	■ No	

SUSPENSION

Number of Axles	2		
Front Axle Type	■ Independent	☐ Beam Axle	
Mfr. / Model No.	Ford / O.E.M.		
Axle Ratio (if driven)	N/A		
Suspension Type	☐ Air	■ Spring	☐ Other (explain)
No. of Shock Absorbers	2		
Mfr. / Model No.	Ford / BK31-18045-BC		
Middle Axle Type	☐ Independent	☐ Beam Axle	
Mfr. / Model No.	N/A		
Axle Ratio (if driven)	N/A		
Suspension Type	☐ Air	☐ Spring	☐ Other (explain)
No. of Shock Absorbers	N/A		
Mfr. / Model No.	N/A		
Rear Axle Type	☐ Independent	■ Beam Axle	
Mfr. / Model No.	Ford / O.E.M.		
Axle Ratio (if driven)	4.10		
Suspension Type	☐ Air	■ Spring	☐ Other (explain)
No. of Shock Absorbers	2		
Mfr. / Model No.	Ford / FK41-18080-FA		

Bus Number: 1609	Date: 03-31-16

WHEELS & TIRES

Front	Wheel Mfr./ Model No.	Ford / 16 x 6
	Tire Mfr./ Model No.	Hankook Dyna Pro HT
Rear	Wheel Mfr./ Model No.	Ford / 16 x 6
	Tire Mfr./ Model No.	Hankook Dynapro HT

BRAKES

Front Axle Brakes Type	☐ Cam	■ Disc	☐ Other (explain)
Mfr. / Model No.	Ford / CK4Z-2001-A		
Middle Axle Brakes Type	☐ Cam	☐ Disc	☐ Other (explain)
Mfr. / Model No.	N/A		
Rear Axle Brakes Type	☐ Cam	■ Disc	☐ Other (explain)
Mfr. / Model No.	Ford / CK4Z-2200-A		

HVAC

Heating System Type	☐ Air	■ Water	☐ Other
Capacity (Btu/hr)	Not available.		
Mfr. / Model No.	Ford / O.E.M.		
Air Conditioner	■ Yes	☐ No	
Location	Front dash & rear ceiling		
Capacity (Btu/hr)	Dash - O.E.M. Rear ceiling – 45,000		
A/C Compressor Mfr. / Model No.	Dash – Not available. Rear ceiling – Trans/Air / TA 712 T1		

STEERING

Steering Gear Box Type	Hydraulic Power Rack & Pinion		
Mfr. / Model No.	Ford / O.E.M.		
Steering Wheel Diameter	14.7”		
Number of turns (lock to lock)	3.5		
Control Type	☐ Electric	■ Hydraulic	☐ Other (expain)

Bus Number: 1609	Date: 03-31-16

OTHERS

Wheel Chair Ramps	Location: N/A	Type: N/A
Wheel Chair Lifts	Location: Rear	Type: Lift
Mfr. / Model No.	BraunAbility / NCL917F1B3454HB-2	
Emergency Exit	Location: Door Windows	Number: 1 3

CAPACITIES

Fuel Tank Capacity (gallons)	25
Engine Crankcase Capacity (quarts)	6.0
Transmission Capacity (quarts)	13.1
Differential Capacity (quarts)	3.0
Cooling System Capacity (quarts)	16.4
Power Steering Fluid Capacity (quarts)	Not available.

VEHICLE DATA FORM

Bus Number: 1609	Date: 03-31-16

List all spare parts, tools and manuals delivered with the bus.

Part Number	Description	Qty.
ASH – 24599 / CK4Z – 18125J	Shocks	2
ASH – 24630 / BK3Z – 18124 - A	Shocks	2
CK4Z 2200 A	Brake Pads (Sets of 4)	2
CK4Z 2001 A	Brake Pads (Sets of 4)	2
FL 500S	Oil Filter / Motorcraft	1
FA 1916	Air Filter	1
CK4Z – 7A098 A	Transmission Filter Screen Assembly	1
CK4Z – 1125 B	Rotors	1

COMPONENT/SUBSYSTEM INSPECTION FORM

Bus Number: 1609	Date: 3/31/16

Subsystem	Checked	Initials	Comments
Air Conditioning Heating and Ventilation	✓	E.D.	N/A
Body and Sheet Metal	✓	E.D.	N/A
Frame	✓	E.D.	N/A
Steering	✓	E.D.	N/A
Suspension	✓	E.D.	N/A
Interior/Seating	✓	E.D.	N/A
Axles	✓	E.D.	N/A
Brakes	✓	E.D.	N/A
Tires/Wheels	✓	E.D.	N/A
Exhaust	✓	E.D.	N/A
Fuel System	✓	E.D.	N/A
Power Plant	✓	E.D.	N/A
Accessories	✓	E.D.	N/A
Lift System	✓	E.D.	N/A
Interior Fasteners	✓	E.D.	N/A
Batteries	✓	E.D.	N/A

CHECK - IN



STARTCRAFT BUS A DIVISION OF FOREST RIVER, INC., MODEL STARLITE TRANSIT



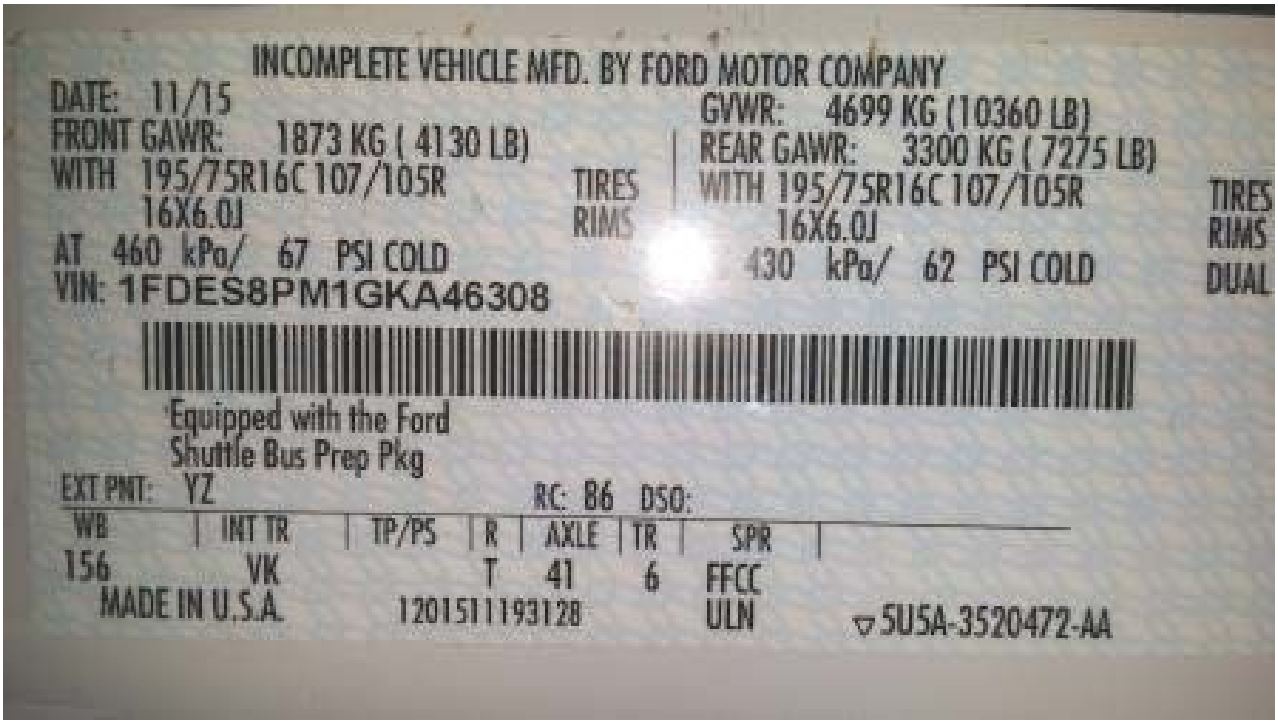
CHECK - IN CONT.



STARTCRAFT BUS A DIVISION OF FOREST RIVER, INC., MODEL STARLITE TRANSIT EQUIPPED WITH A BRAUNABILITY MODEL NCL917F1B3454HB-2 HANDICAP PLATFORM LIFT



CHECK - IN CONT.



VIN TAG



ENGINE COMPARTMENT

CHECK - IN CONT.



OPERATOR'S AREA



INTERIOR

1. MAINTAINABILITY

1.1 ACCESSIBILITY OF COMPONENTS AND SUBSYSTEMS

1.1-I. TEST OBJECTIVE

The objective of this test is to check the accessibility of components and subsystems.

1.1-II. TEST DESCRIPTION

Accessibility of components and subsystems is checked, and where accessibility is restricted the subsystem is noted along with the reason for the restriction.

1.1-III. DISCUSSION

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

ACCESSIBILITY DATA FORM

Bus Number: 1609	Date: 8-30-16

Component	Checked	Comments
ENGINE :		
Oil Dipstick	✓	None noted.
Oil Filler Hole	✓	None noted.
Oil Drain Plug	✓	None noted.
Oil Filter	✓	None noted.
Fuel Filter	✓	None noted.
Air Filter	✓	None noted.
Belts	✓	None noted.
Coolant Level	✓	None noted.
Coolant Filler Hole	✓	None noted.
Coolant Drain	✓	None noted.
Spark / Glow Plugs	N/A	None noted.
Alternator	✓	None noted.
Diagnostic Interface Connector	✓	None noted.
TRANSMISSION :		
Fluid Dip-Stick	N/A	None noted.
Filler Hole	✓	Not customer accessible.
Drain Plug	N/A	None noted.
SUSPENSION :		
Bushings	✓	None noted.
Shock Absorbers	✓	None noted.
Air Springs	N/A	None noted.
Leveling Valves	N/A	None noted.
Grease Fittings	N/A	None noted.

ACCESSIBILITY DATA FORM

Bus Number: 1609	Date: 8-30-16

Component	Checked	Comments
HVAC :		
A/C Compressor	✓	None noted.
Filters	✓	None noted.
Fans	✓	None noted.
ELECTRICAL SYSTEM :		
Fuses	✓	None noted.
Batteries	✓	None noted.
Voltage regulator	✓	Internal regulator.
Voltage Converters	N/A	None noted.
Lighting	✓	None noted.
MISCELLANEOUS :		
Brakes	✓	None noted.
Handicap Lifts/Ramps	✓	None noted.
Instruments	✓	None noted.
Axles	✓	None noted.
Exhaust	✓	None noted.
Fuel System	✓	None noted.
OTHERS :		

1.2 SERVICING, PREVENTIVE MAINTENANCE, AND REPAIR AND MAINTENANCE DURING TESTING

1.2-I. TEST OBJECTIVE

The objective of this test is to collect maintenance data about the servicing, preventive maintenance, and repair.

1.2.-II. TEST DESCRIPTION

The test will be conducted by operating the NBM and collecting the following data on work order forms and a driver log.

1. Unscheduled Maintenance
    a. Bus number
    b. Date
    c. Mileage
    d. Description of malfunction
    e. Location of malfunction (e.g., in service or undergoing inspection)
    f. Repair action and parts used
    g. Man-hours required

2. Scheduled Maintenance
    a. Bus number
    b. Date
    c. Mileage
    d. Engine running time (if available)
    e. Results of scheduled inspections
    f. Description of malfunction (if any)
    g. Repair action and parts used (if any)
    h. Man-hours required

The buses will be operated in accelerated durability service. While typical items are given below, the specific service schedule will be that specified by the manufacturer.

A. Service
    1. Fueling
    2. Consumable checks
    3. Interior cleaning

B. Preventive Maintenance
    4. Brake adjustments
    5. Lubrication
    6. 3,000 mi (or equivalent) inspection

7. Oil and filter change inspection
8. Major inspection
9. Tune-up

C. Periodic Repairs
1. Brake reline
2. Transmission change
3. Engine change
4. Windshield wiper motor change
5. Stoplight bulb change
6. Towing operations
7. Hoisting operations

1.2-III. DISCUSSION

Servicing and preventive maintenance were performed at manufacturer-specified intervals. The following Scheduled Maintenance Form lists the mileage, items serviced, the service interval, and amount of time required to perform the maintenance. Finally, the Unscheduled Maintenance List along with Unscheduled Maintenance-related photographs is included in Section 5.7, Structural Durability. This list supplies information related to failures that occurred during the durability portion of testing. The Unscheduled Maintenance List includes the date and mileage at which the malfunction occurred, a description of the malfunction and repair, and the time required to perform the repair.

(Page 1 of 1)
SCHEDULED MAINTENANCE
STARCRAFT #1609

DATE	TEST MILES	SERVICE	ACTIVITY	MAN HOURS	DOWN TIME
04-26-16	1,029	P.M./Inspection	Linkage, tie rods, universals/u-joints all lubed; all fluids checked.	4.00	4.00
05-04-16	1,389	P.M./Inspection	Linkage, tie rods, universals/u-joints all lubed; all fluids checked.	4.00	4.00
06-03-16	3,096	P.M./Inspection	Linkage, tie rods, universals/u-joints all lubed; all fluids checked.	4.00	4.00
06-14-16	4,292	P.M./Inspection	Linkage, tie rods, universals/u-joints all lubed; all fluids checked.	4.00	4.00
06-30-16	4,875	P.M./Inspection Fuel Economy Prep	Linkage, tie rods, universals/u-joints all lubed. Oil changed. Oil, fuel, and air filters changed. Transmission oil and filter changed.	8.00	8.00

1.3 REPLACEMENT AND/OR REPAIR OF SELECTED SUBSYSTEMS

1.3-I. TEST OBJECTIVE

The objective of this test is to establish the time required to replace and/or repair selected subsystems.

1.3-II. TEST DESCRIPTION

The test will involve components that may be expected to fail or require replacement during the service life of the bus. In addition, any component that fails during the NBM testing is added to this list. Components to be included are:

1. Transmission
2. Alternator
3. Starter
4. Batteries
5. Windshield wiper motor

1.3-III. DISCUSSION

During the test, several additional components were removed for repair or replacement. Following is a list of components and total repair/replacement time.

	MAN HOURS
Both rear sway bar links.	4.00
Exhaust tailpipe hanger.	1.00
Right side rear sway bar bolt.	1.00

At the end of the test, the remaining items on the list were removed and replaced. The transmission assembly took 10.00 man-hours (two men 5.00 hrs.) to remove and replace. The time required for repair/replacement of the four remaining components is given on the following Repair and/or Replacement Form.

REPLACEMENT AND/OR REPAIR FORM

Subsystem	Replacement Time
Transmission	10.00 man hours
Wiper Motor	0.50 man hours
Starter	0.50 man hours
Alternator	1.75 man hours
Batteries	1.00 man hours

1.3 REPLACEMENT AND/OR REPAIR OF SELECTED SUBSYSTEMS



TRANSMISSION REMOVAL AND REPLACEMENT (10.00 MAN HOURS)



WIPER MOTOR REMOVAL AND REPLACEMENT (0.50 MAN HOURS)

1.3 REPLACEMENT AND/OR REPAIR OF SELECTED SUBSYSTEMS CONT.



STARTER REMOVAL AND REPLACEMENT (0.50 MAN HOURS)



ALTERNATOR REMOVAL AND REPLACEMENT (1.75 MAN HOURS)

2. RELIABILITY - DOCUMENTATION OF BREAKDOWN AND REPAIR TIMES DURING TESTING

2-I. TEST OBJECTIVE

The objective of this test is to document unscheduled breakdowns, repairs, down time, and repair time that occur during testing.

2-II. TEST DESCRIPTION

Using the driver log and unscheduled work order forms, all significant breakdowns, repairs, man-hours to repair, and hours out of service are recorded on the Reliability Data Form.

CLASS OF FAILURES

Classes of failures are described below:

(a) Class 1: Physical Safety. A failure that could lead directly to passenger or driver injury and represents a severe crash situation.

(b) Class 2: Road Call. A failure resulting in an en route interruption of revenue service. Service is discontinued until the bus is replaced or repaired at the point of failure.

(c) Class 3: Bus Change. A failure that requires removal of the bus from service during its assignments. The bus is operable to a rendezvous point with a replacement bus.

(d) Class 4: Bad Order. A failure that does not require removal of the bus from service during its assignments but does degrade coach operation. The failure shall be reported by driver, inspector, or hostler.

2-III. DISCUSSION

A listing of breakdowns and unscheduled repairs is accumulated during the Structural Durability Test. The following Reliability Data Form lists all unscheduled repairs under classes as defined above. These classifications are somewhat subjective as the test is performed on a test track with careful inspections every two hours. However, even on the road, there is considerable latitude on deciding how to handle many failures.

The Unscheduled Repair List is also attached to provide a reference for the repairs that are included in the Reliability Data Forms.

The classification of repairs according to subsystem is intended to emphasize those systems which had persistent minor or more serious problems. There were no Class 1 or 2 failures. Of the five Class 3 failures, three involved the suspension system and two occurred with the body. These, and the one remaining Class 4 failure is available for review in the Unscheduled Maintenance List, located in Section 5.7 Structural Durability.

RELIABILITY DATA FORM

Bus Number: 1609	Date Completed: 8-4-16
Personnel: B.R.	

	Failure Type					
	Class 4 Bad order	Class 3 Bus Change	Class 2 Road Call	Class 1 Physical Safety		
Subsystem	Mileage	Mileage	Mileage	Mileage	Man hours	Down Time
Suspension		1,029			4.00	88.00
		3,096			1.00	1.00
		4,292			4.00	136.00
Body/Doors/Mirrors	1,029				1.00	1.00
		4,292			4.00	4.00
		2,138			1.00	1.00

3. SAFETY - A DOUBLE-LANE CHANGE (OBSTACLE AVOIDANCE)

3-I. TEST OBJECTIVE

The objective of this test is to determine handling and stability of the bus by measuring speed through a double lane change test.

3-II. TEST DESCRIPTION

The Safety Test is a vehicle handling and stability test. The bus will be operated at SLW on a smooth and level test track. The bus will be driven through a double lane change course at increasing speed until the test is considered unsafe or a speed of 45 mph is reached. The lane change course will be set up using pylons to mark off two 12 foot center to center lanes with two 100 foot lane change areas 100 feet apart. The bus will begin in one lane, change to the other lane in a 100 foot span, travel 100 feet, and return to the original lane in another 100 foot span. This procedure will be repeated, starting first in the right-hand and then in the left-hand lane.

3-III. DISCUSSION

The double-lane change was performed in both right-hand and left-hand directions. The bus was able to safely negotiate the test course in both the right-hand and left-hand directions up to the maximum test speed of 45 mph.

SAFETY DATA FORM

Bus Number: 1609	Date: 5-17-16
Personnel: T.S., T.G. & C.S.	

Temperature (°F): 64	Humidity (%): 51
Wind Direction: SW	Wind Speed (mph): 5
Barometric Pressure (in.Hg): 28.90	

SAFETY TEST: DOUBLE LANE CHANGE	
Maximum safe speed tested for double-lane change to left	45 mph
Maximum safe speed tested for double-lane change to right	45 mph
Comments of the position of the bus during the lane change:	
A safe profile was maintained through all portions of testing.	
Comments of the tire/ground contact patch:	
Tire/ground contact was maintained through all portions of testing.	



RIGHT - HAND APPROACH



LEFT - HAND APPROACH

4.0 PERFORMANCE

4.1 PERFORMANCE - AN ACCELERATION, GRADEABILITY, AND TOP SPEED TEST

4.1-I. TEST OBJECTIVE

The objective of this test is to determine the acceleration, gradeability, and top speed capabilities of the bus.

4.1-II. TEST DESCRIPTION

In this test, the bus will be operated at SLW on the skid pad at the PSBRTF. The bus will be accelerated at full throttle from a standstill to a maximum "geared" or "safe" speed as determined by the test driver. The vehicle speed is measured using a Correvit non-contacting speed sensor. The times to reach speed between ten mile per hour increments are measured and recorded using a stopwatch with a lap timer. The time to speed data will be recorded on the Performance Data Form and later used to generate a speed vs. time plot and gradeability calculations.

4.1-III. DISCUSSION

This test consists of three runs in both the clockwise and counterclockwise directions on the Test Track. Velocity versus time data is obtained for each run and results are averaged together to minimize any test variability which might be introduced by wind or other external factors. The test was performed up to a maximum speed of 50 mph. The fitted curve of velocity vs. time is attached, followed by the calculated gradeability results. The average time to obtain 50 mph was 13.66 seconds.

PERFORMANCE DATA FORM

Bus Number: 1609	Date: 5-17-16
Personnel: T.S., S.R., E.D. & C.S.	
Temperature (°F): 66	Humidity (%): 48
Wind Direction: W	Wind Speed (mph): 6
Barometric Pressure (in.Hg): 28.87	

		INITIALS:
Air Conditioning - OFF	✓Checked	T.G.
Ventilation fans - ON HIGH	✓Checked	T.G.
Heater pump motor - OFF	✓Checked	T.G.
Defroster - OFF	✓ Checked	T.G.
Exterior and interior lights - ON	✓ Checked	T.G.
Windows and doors - CLOSED	✓ Checked	T.G.

ACCELERATION, GRADEABILITY, TOP SPEED

Counter Clockwise Recorded Interval Times

Speed	Run 1	Run 2	Run 3
10 mph	2.01	2.01	1.82
20 mph	4.27	4.44	4.41
30 mph	6.19	6.60	6.50
40 mph	10.09	10.14	10.14
Top Test Speed(mph) 50	13.70	13.76	13.51

Clockwise Recorded Interval Times

Speed	Run 1	Run 2	Run 3
10 mph	1.82	1.84	1.84
20 mph	4.03	4.06	4.25
30 mph	6.44	6.82	6.01
40 mph	10.26	10.45	10.00
Top Test Speed(mph) 50	13.87	13.77	13.34

PERFORMANCE SUMMARY SHEET

BUS MANUFACTURER :Starcraft Bus BUS NUMBER :1609
BUS MODEL :Starlite Transit TEST DATE :05-17-16

TEST CONDITIONS :

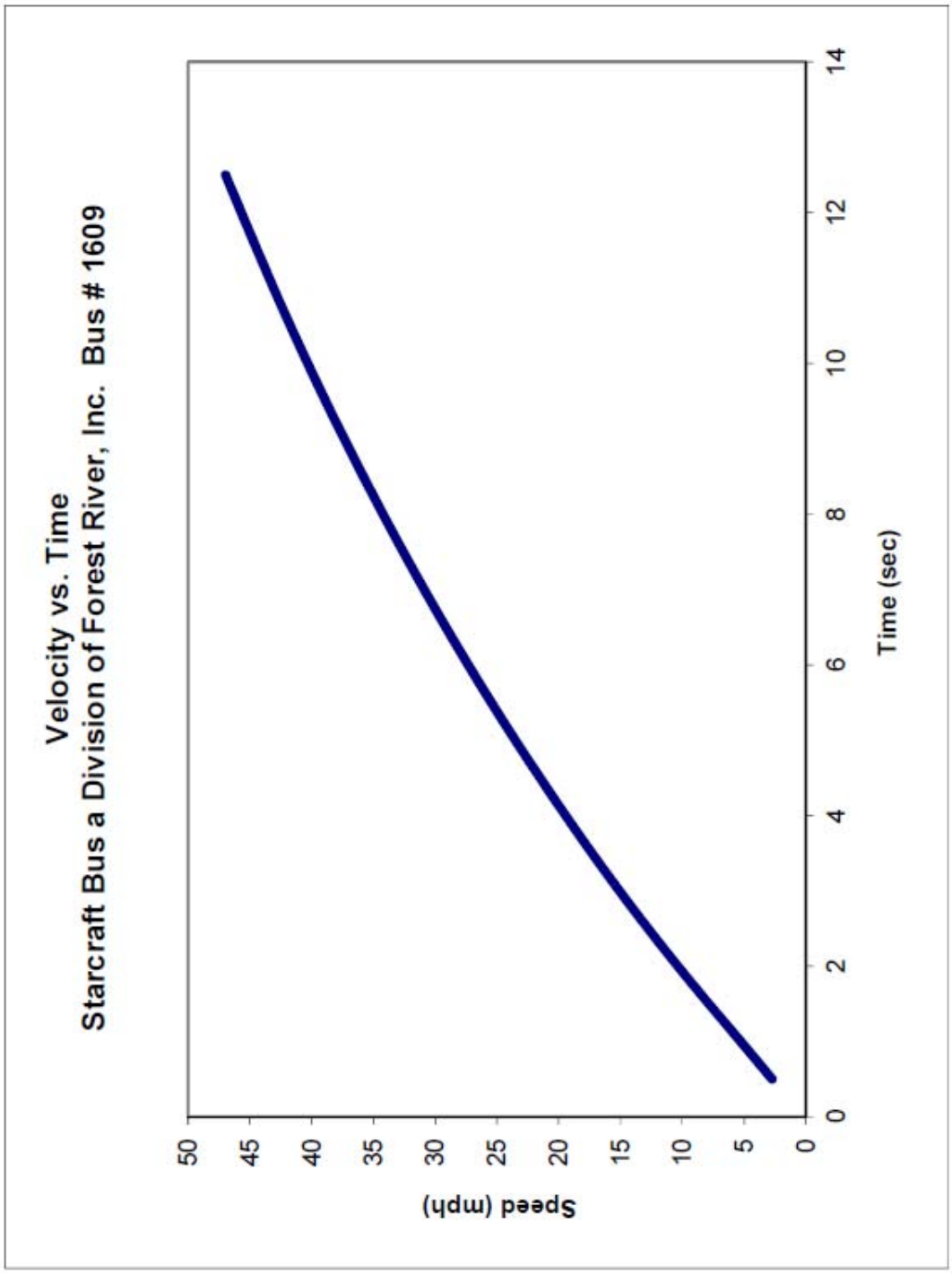
TEMPERATURE (DEG F)	: 66.0
WIND DIRECTION	: W
WIND SPEED (MPH)	: 6.0
HUMIDITY (%)	: 48
BAROMETRIC PRESSURE (IN. HG)	: 28.9

VEHICLE SPEED	AVERAGE TIME (SEC)		
(MPH)	CCW DIRECTION	CW DIRECTION	TOTAL
10.0	1.95	1.83	1.89
20.0	4.37	4.11	4.24
30.0	6.43	6.42	6.43
40.0	10.12	10.24	10.18
50.0	13.66	13.66	13.66

TEST SUMMARY :

VEHICLE SPEED (MPH)	TIME (SEC)	ACCELERATION (FT/SEC^2)	MAX. GRADE (%)
1.0	.18	8.1	25.9
5.0	.93	7.7	24.5
10.0	1.91	7.2	22.8
15.0	2.98	6.6	21.1
20.0	4.13	6.1	19.4
25.0	5.38	5.6	17.8
30.0	6.74	5.1	16.2
35.0	8.24	4.7	14.7
40.0	9.89	4.2	13.2
45.0	11.72	3.8	11.9
50.0	13.76	3.4	10.6

NOTE : Gradeability results were calculated from performance test data. Actual sustained gradeability performance for vehicles equipped with auto transmission may be lower than the values indicated here.


Velocity vs. Time
Starcraft Bus a Division of Forest River, Inc. Bus # 1609
Speed (mph)
0
5
10
15
20
25
30
35
40
45
50
Time (sec)
0
2
4
6
8
10
12
14

4.0 PERFORMANCE

4.2 Performance - Bus Braking

4.2 I. TEST OBJECTIVE

The objective of this test is to provide, for comparison purposes, braking performance data on transit buses produced by different manufacturers.

4.2 II. TEST DESCRIPTION

The testing will be conducted at the PTI Test Track skid pad area. Brake tests will be conducted after completion of the GVW portion of the vehicle durability test. At this point in testing the brakes have been subjected to a large number of braking snubs and will be considered well burnished. Testing will be performed when the bus is fully loaded at its GVW. All tires on each bus must be representative of the tires on the production model vehicle

The brake testing procedure comprises three phases:

1. Stopping distance tests

    i. Dry surface (high-friction, Skid Number within the range of 70-76)
    ii. Wet surface (low-friction, Skid Number within the range of 30-36)

2. Stability tests
3. Parking brake test

Stopping Distance Tests

The stopping distance phase will evaluate service brake stops. All stopping distance tests on dry surface will be performed in a straight line and at the speeds of 20, 30, 40 and 45 mph. All stopping distance tests on wet surface will be performed in straight line at speed of 20 mph.

The tests will be conducted as follows:

1. **Uniform High Friction Tests:** Four maximum deceleration straight-line brake applications each at 20, 30, 40 and 45 mph, to a full stop on a uniform high-friction surface in a 3.66-m (12-ft) wide lane.

2. **Uniform Low Friction Tests:** Four maximum deceleration straight-line brake applications from 20 mph on a uniform low friction surface in a 3.66-m (12-ft) wide lane.

When performing service brake stops for both cases, the test vehicle is accelerated on the bus test lane to the speed specified in the test procedure and this speed is maintained into the skid pad area. Upon entry of the appropriate lane of the skid pad area, the vehicle's service brake is applied to stop the vehicle as quickly as possible. The stopping distance is measured and recorded for both cases on the test

data form. Stopping distance results on dry and wet surfaces will be recorded and the average of the four measured stopping distances will be considered as the measured stopping distance. Any deviation from the test lane will be recorded.

Stability Tests

This test will be conducted in both directions on the test track. The test consists of four maximum deceleration, straight-line brake applications on a surface with split coefficients of friction (i.e., the wheels on one side run on high-friction SN 70-76 or more and the other side on low-friction [where the lower coefficient of friction should be less than half of the high one] at initial speed of 30 mph).

(l) The performance of the vehicle will be evaluated to determine if it is possible to keep the vehicle within a 3.66m (12 ft) wide lane, with the dividing line between the two surfaces in the lane's center. The steering wheel input angle required to keep the vehicle in the lane during the maneuver will be reported.

Parking Brake Test

The parking brake phase utilizes the brake slope, which has a 20% grade. The test vehicle, at its GVW, is driven onto the brake slope and stopped. With the transmission in neutral, the parking brake is applied and the service brake is released. The test vehicle is required to remain stationary for five minutes. The parking brake test is performed with the vehicle facing uphill and downhill.

4.2-III. DISCUSSION

The Stopping Distance phase of the Brake Test was completed with the following results; for the Uniform High Friction Test average stopping distances were 17.39' at 20 mph, 36.97' at 30 mph, 71.68' at 40 mph and 90.03' at 45 mph. The average stopping distance for the Uniform Low Friction Test was 22.41'. There was no deviation from the test lane during the performance of the Stopping Distance phase.

During the Stability phase of Brake Testing the test bus experienced no deviation from the test lane during both approaches to the Split Friction Road surface.

The Parking Brake phase was completed with the test bus maintaining the parked position for the full five minute period with no slip or roll observed in both the uphill and downhill positions.

Table 4.2-6. Braking Test Data Forms

Bus Number: 1609	Date: 04-15-16
Personnel: T.S., S.R., E.D. & C.S.	
Amb. Temperature (ºF): 60	Wind Speed (mph): 5
Wind Direction: S	Pavement Temp (°F) Start: 81 End: 95

TIRE INFLATION PRESSURE (psi):

Tire Type: Front: Hankook DynaPro HT 195 75R16C
Rear: Hankook DynaPro HT 195 75R16C

	Left Tire(s)		Right Tire(s)	
Front	67		67	
	Inner	Outer	Inner	Outer
Rear	N/A	N/A	N/A	N/A
Rear	N/A	62	N/A	62

AXLE LOADS (lb)

	Left	Right
Front	1,780	1,270
Rear	N/A	N/A
Rear	3,660	3,580

Table 4.2-7. Record of All Braking System Faults/Repairs.

Date	Fault/Repair	Description
4/15/16	None noted.	None noted.

Table 4.2-8.1. Stopping Distance Test Results Form

Stopping Distance (ft)					
Vehicle Direction	CW	CW	CCW	CCW	
Speed (mph)	**Stop 1**	**Stop 2**	**Stop 3**	**Stop 4**	**Average**
20 (dry)	18.70	14.71	16.88	19.27	17.39
30 (dry)	37.76	38.49	33.37	38.27	36.97
40 (dry)	71.91	73.64	68.64	72.53	71.68
45 (dry)	93.22	89.68	89.26	87.98	90.03
20 (wet)	20.63	24.84	21.40	22.80	22.41

Table 4.2-8.2. Stability Test Results Form

Stability Test Results (Split Friction Road surface)			
Vehicle Direction	Attempt	Did test bus stay in 12' lane? (yes/no)	Comments
Drivers side on high friction	1	Yes	None noted
	2	Yes	None noted
Drivers side on low friction	1	Yes	None noted
	2	Yes	None noted

Table 4.2-8.3. Parking Brake Test Form

PARKING BRAKE (Fully Loaded) – GRADE HOLDING						
Vehicle Direction	Attempt	Hold Time (min)	Slide (in)	Roll (in)	Did Hold	No Hold
Front up	1	5:00	0	0	X	
	2	N/A	N/A	N/A	N/A	N/A
	3	N/A	N/A	N/A	N/A	N/A
Front down	1	5:00	0	0	X	
	2	N/A	N/A	N/A	N/A	N/A
	3	N/A	N/A	N/A	N/A	N/A

4.2 Performance - Bus Braking



20% UPHILL GRADE



20% DOWNHILL GRADE

5.1 STRUCTURAL INTEGRITY

5.1 STRUCTURAL STRENGTH AND DISTORTION TESTS – STRUCTURAL SHAKEDOWN TEST

5.1-I. DISCUSSION

The objective of this test is to determine certain static characteristics (e.g., bus floor deflection, permanent structural deformation, etc.) under static loading conditions.

5.1-II. TEST DESCRIPTION

In this test, the bus will be isolated from the suspension by blocking the vehicle under the suspension points. The bus will then be loaded and unloaded up to a maximum of three times with a distributed load equal to 2.5 times gross load. Gross load is 150 lb for every designed passenger seating position, for the driver, and for each 1.5 sq ft of free floor space. For a distributed load equal to 2.5 times gross load, place a 375-lb load on each seat and on every 1.5 sq ft of free floor space. The first loading and unloading sequence will "settle" the structure. Bus deflection will be measured at several locations during the loading sequences.

5.1-III. DISCUSSION

This test was performed based on a maximum passenger capacity of 12 people including the driver plus 2 wheelchair positions. The resulting test load is 12 X 375 lb. = 4,500 lbs. + 1,200 lbs. (2 wheelchair positions) = 5,700 lbs. The load is distributed evenly over the passenger space. Deflection data before and after each loading and unloading sequence is provided on the Structural Shakedown Data Form.

The unloaded height after each test becomes the original height for the next test. Some initial settling is expected due to undercoat compression, etc. After each loading cycle, the deflection of each reference point is determined. The bus is then unloaded and the residual (permanent) deflection is recorded. On the final test, the maximum loaded deflection was 0.105 Inches at reference point 7. The maximum permanent deflection after the final loading sequence ranged from -0.002 Inches at reference point 6 to 0.005 inches at reference point 7.

STRUCTURAL SHAKEDOWN DATA FORM

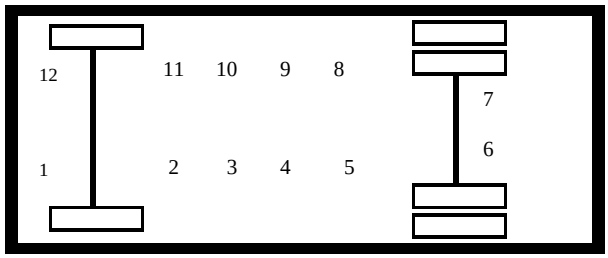
Bus Number: 1609	Date: 04-05-16
Personnel: S.R., E.D., E.L., T.G., P.D. & T.S.	Temperature (°F): 65
Loading Sequence: ■ 1 ☐ 2 ☐ 3 (check one) Test Load (lbs): 5,700 (12 passengers x 375 + 2 W/C @ 600 lbs. each)	

Indicate Approximate Location of Each Reference Point

Right

Front of Bus

Left



Top View

Reference Point No.	A (in) Original Height	B (in) Loaded Height	B-A (in) Loaded Deflection	C (in) Unloaded Height	C-A (in) Permanent Deflection
1	0	-.022	-.022	-.014	-.014
2	0	.071	.071	.010	.010
3	0	.095	.095	.015	.015
4	0	.109	.109	.018	.018
5	0	.112	.112	.019	.019
6	0	.139	.139	.041	.041
7	0	.099	.099	.061	.061
8	0	.069	.069	.013	.013
9	0	.060	.060	.010	.010
10	0	.047	.047	.010	.010
11	0	.028	.028	.006	.006
12	0	-.065	-.065	-.008	-.008

STRUCTURAL SHAKEDOWN DATA FORM

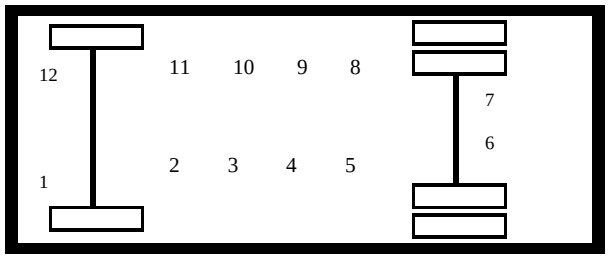
Bus Number: 1609	Date: 04-05-16
Personnel: S.R., E.D., E.L., P.D. & T.G.	Temperature (°F): 65
Loading Sequence: ☐ 1 ■ 2 ☐ 3 (check one) Test Load (lbs): 5,700 (12 passengers x 375 + 2 W/C @ 600 lbs. each)	

Indicate Approximate Location of Each Reference Point

Right

Front of Bus

Left



Top View

Reference Point No.	A (in) Original Height	B (in) Loaded Height	B-A (in) Loaded Deflection	C (in) Unloaded Height	C-A (in) Permanent Deflection
1	-.014	-.027	-.013	-.015	-.001
2	.010	.069	.059	.011	.001
3	.015	.095	.080	.018	.003
4	.018	.108	.090	.020	.002
5	.019	.111	.092	.021	.002
6	.041	.145	.104	.039	-.002
7	.061	.166	.105	.066	.005
8	.013	.071	.058	.016	.003
9	.010	.061	.051	.013	.003
10	.010	.049	.039	.012	.002
11	.006	.030	.024	.008	.002
12	-.008	-.064	-.056	-.008	.000

5.1 STRUCTURAL SHAKEDOWN TEST



DIAL INDICATORS IN POSITION



BUS LOADED TO 2.5 TIMES GVL
(5,700 LBS)

5.2 STRUCTURAL STRENGTH AND DISTORTION TESTS - STRUCTURAL DISTORTION

5.2-I. TEST OBJECTIVE

The objective of this test is to observe the operation of the bus subsystems when the bus is placed in a longitudinal twist simulating operation over a curb or through a pothole.

5.2-II. TEST DESCRIPTION

With the bus loaded to GVWR, each wheel of the bus will be raised (one at a time) to simulate operation over a curb and the following will be inspected:

1. Body
2. Windows
3. Doors
4. Roof vents
5. Special seating
6. Undercarriage
7. Engine
8. Service doors
9. Escape hatches
10. Steering mechanism

Each wheel will then be lowered (one at a time) to simulate operation through a pothole and the same items inspected.

5.2-III. DISCUSSION

The test sequence was repeated ten times. The first and last test is with all wheels level. The other eight tests are with each wheel 6 inches higher and 6 inches lower than the other three wheels.

All doors, windows, escape mechanisms, engine, steering and handicapped devices operated normally throughout the test. The undercarriage and body indicated no deficiencies. No water leakage was observed during the test. The results of this test are indicated on the following data forms.

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	■ before	□ after
Left front	□ 6 in higher	□ 6 in lower
Right front	□ 6 in higher	□ 6 in lower
Right rear	□ 6 in higher	□ 6 in lower
Left rear	□ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	■ 6 in higher	□ 6 in lower
Right front	□ 6 in higher	□ 6 in lower
Right rear	□ 6 in higher	□ 6 in lower
Left rear	□ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	□ 6 in higher	□ 6 in lower
Right front	■ 6 in higher	□ 6 in lower
Right rear	□ 6 in higher	□ 6 in lower
Left rear	□ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	□ 6 in higher	□ 6 in lower
Right front	□ 6 in higher	□ 6 in lower
Right rear	■ 6 in higher	□ 6 in lower
Left rear	□ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	□ 6 in higher	□ 6 in lower
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Right rear	□ 6 in higher	□ 6 in lower
Left rear	■ 6 in higher	□ 6 in lower
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Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
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Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	□ 6 in higher	■ 6 in lower
Right front	□ 6 in higher	□ 6 in lower
Right rear	□ 6 in higher	□ 6 in lower
Left rear	□ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	□ 6 in higher	□ 6 in lower
Right front	□ 6 in higher	■6 in lower
Right rear	□ 6 in higher	□ 6 in lower
Left rear	□ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	□ 6 in higher	□ 6 in lower
Right front	□ 6 in higher	□ 6 in lower
Right rear	□ 6 in higher	■ 6 in lower
Left rear	□ 6 in higher	□ 6 in lower
Right center	□ 6 in higher	□ 6 in lower
Left center	□ 6 in higher	□ 6 in lower

	Comments
Windows	No Deficiencies
Front Doors	No Deficiencies
Rear Doors	No Deficiencies
Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	□ after
Left front	□ 6 in higher	□ 6 in lower
Right front	□ 6 in higher	□ 6 in lower
Right rear	□ 6 in higher	□ 6 in lower
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	Comments
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Escape Mechanisms/ Roof Vents	No Deficiencies
Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

DISTORTION TEST INSPECTION FORM

(Note: Ten copies of this data sheet are required)

Bus Number: 1609	Date: 04-11-16
Personnel: T.S., E.D., S.R. & P.D.	Temperature(°F): 48

Wheel Position : (check one)		
All wheels level	□ before	■ after
Left front	□ 6 in higher	□ 6 in lower
Right front	□ 6 in higher	□ 6 in lower
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Engine	No Deficiencies
Handicapped Device/ Special Seating	No Deficiencies
Undercarriage	No Deficiencies
Service Doors	No Deficiencies
Body	No Deficiencies
Windows/ Body Leakage	No Deficiencies
Steering Mechanism	No Deficiencies

5.2 STRUCTURAL DISTORTION TEST



RIGHT FRONT WHEEL SIX INCHES HIGHER



LEFT REAR WHEEL SIX INCHES LOWER

5.3 STRUCTURAL STRENGTH AND DISTORTION TESTS - STATIC TOWING TEST

5.3-I. TEST OBJECTIVE

The objective of this test is to determine the characteristics of the bus towing mechanisms under static loading conditions.

5.3-II. TEST DESCRIPTION

Utilizing a load-distributing yoke, a hydraulic cylinder is used to apply a static tension load equal to 1.2 times the bus curb weight. The load will be applied to both the front and rear, if applicable, towing fixtures at an angle of 20 degrees with the longitudinal axis of the bus, first to one side then the other in the horizontal plane, and then upward and downward in the vertical plane. Any permanent deformation or damage to the tow eyes or adjoining structure will be recorded.

5.3-III. DISCUSSION

The test bus submitted for testing was not equipped with any type of tow eyes or tow hooks, therefore the Static Tow Test was not performed.

5.4 STRUCTURAL STRENGTH AND DISTORTION TESTS - DYNAMIC TOWING TEST

5.4-I. TEST OBJECTIVE

The objective of this test is to verify the integrity of the towing fixtures and determine the feasibility of towing the bus under manufacturer specified procedures.

5.4-II. TEST DESCRIPTION

This test requires the bus be towed at curb weight using the specified equipment and instructions provided by the manufacturer and a heavy-duty wrecker. The bus will be towed for 5 miles at a speed of 20 mph for each recommended towing configuration. After releasing the bus from the wrecker, the bus will be visually inspected for any structural damage or permanent deformation. All doors, windows and passenger escape mechanisms will be inspected for proper operation.

5.4-III. DISCUSSION

The bus was towed using a heavy-duty wrecker. The towing interface was accomplished by incorporating a hydraulic under lift. A front lift tow was performed. Rear towing is not recommended. No problems, deformation, or damage was noted during testing.

DYNAMIC TOWING TEST DATA FORM

Bus Number: 1609	Date: 7-28-16
Personnel: T.S. & E.D.	

Temperature (°F): 79	
Wind Direction: SSW	Wind Speed (mph): 1

Inspect tow equipment-bus interface.
Comments: A safe and adequate connection was made between the tow equipment and the bus.
Inspect tow equipment-wrecker interface.
Comments: A safe and adequate connection was made between the tow equipment and the wrecker.
Towing Comments: A front lift tow was performed incorporating a hydraulic under lift wrecker.
Description and location of any structural damage: None noted.
General Comments: No problems with the towing interface or towing procedures were encountered.

5.4 DYNAMIC TOWING TEST



TOWING INTERFACE



TEST BUS IN TOW

5.5 STRUCTURAL STRENGTH AND DISTORTION TESTS – JACKING TEST

5.5-I. TEST OBJECTIVE

The objective of this test is to inspect for damage due to the deflated tire, and determine the feasibility of jacking the bus with a portable hydraulic jack to a height sufficient to replace a deflated tire.

5.5-II. TEST DESCRIPTION

With the bus at curb weight, the tire(s) at one corner of the bus are replaced with deflated tire(s) of the appropriate type. A portable hydraulic floor jack is then positioned in a manner and location specified by the manufacturer and used to raise the bus to a height sufficient to provide 3-in clearance between the floor and an inflated tire. The deflated tire(s) are replaced with the original tire(s) and the jack is lowered. Any structural damage or permanent deformation is recorded on the test data sheet. This procedure is repeated for each corner of the bus.

5.5-III. DISCUSSION

The jack used for this test has a minimum height of 8.75 inches. During the deflated portion of the test, the jacking point clearances ranged from 6.1 inches to 13.9 inches. No deformation or damage was observed during testing. A complete listing of jacking point clearances is provided in the Jacking Test Data Form.

JACKING CLEARANCE SUMMARY

Condition	Frame Point Clearance
Front axle – one tire flat	6.1”
Rear axle – one tire flat	10.4”
Rear axle – two tires flat	8.9”

JACKING TEST DATA FORM

Bus Number: 1609	Date: 04-01-16
Personnel: E.D. & S.R.	Temperature (°F): 61

Record any permanent deformation or damage to bus as well as any difficulty encountered during jacking procedure.

Deflated Tire	Jacking Pad Clearance Body/Frame (in)	Jacking Pad Clearance Axle/Suspension (in)	Comments
Right front	8.2“ I 6.1“ D	10.2“ I 7.4“ D	Body & Axle
Left front	11.7“ I 9.1“ D	9.9“ I 7.3“ D	Body & Axle
Right rear—outside	11.9“ I 11.5“ D	14.2“ I 13.9“ D	Body & Suspension
Right rear—both	11.9“ I 9.6“ D	14.2“ I 12.4“ D	Body & Suspension
Left rear—outside	10.7“ I 10.4“ D	13.7“ I 13.5“ D	Body & Suspension
Left rear—both	10.7“ I 8.9“ D	13.7“ I 12.1“ D	Body & Suspension
Right middle or tag—outside	N/A	N/A	N/A
Right middle or tag—both	N/A	N/A	N/A
Left middle or tag—outside	N/A	N/A	N/A
Left middle or tag—both	N/A	N/A	N/A

Additional comments of any deformation or difficulty during jacking:

None noted.

5.6 STRUCTURAL STRENGTH AND DISTORTION TESTS - HOISTING TEST

5.6-I. TEST OBJECTIVE

The objective of this test is to determine possible damage or deformation caused by the jack/stands.

5.6-II. TEST DESCRIPTION

With the bus at curb weight, the front end of the bus is raised to a height sufficient to allow manufacturer-specified placement of jack stands under the axles or jacking pads independent of the hoist system. The bus will be checked for stability on the jack stands and for any damage to the jacking pads or bulkheads. The procedure is repeated for the tag axle and rear end of the bus. The procedure is then repeated for the front, tag axle and rear simultaneously.

5.6-III. DISCUSSION

The test was conducted using four posts of a six-post electric lift and standard 19 inch jack stands. The bus was hoisted from the front wheel, rear wheel, and then the front and rear wheels simultaneously and placed on jack stands.

The bus easily accommodated the placement of the vehicle lifts and jack stands and the procedure was performed without any instability noted.

HOISTING TEST DATA FORM

Bus Number: 1609	Date: 04-04-16
Personnel: E.D., S.R. & E.L.	Temperature (°F): 62

Comments of any structural damage to the jacking pads or axles while both the front wheels are supported by the jack stands:
None noted
Comments of any structural damage to the jacking pads or axles while both the rear wheels are supported by the jack stands:
None noted
Comments of any structural damage to the jacking pads or axles while both the tag axle wheels are supported by the jack stands:
N/A
Comments of any structural damage to the jacking pads or axles while both the front and rear wheels are supported by the jack stands:
None noted
Comments of any problems or interference placing wheel hoists under wheels:
None noted

5.7 STRUCTURAL DURABILITY TEST

5.7-I. TEST OBJECTIVE

The objective of this test is to perform an accelerated durability test that approximates up to 25 percent of the service life of the vehicle.

5.7-II. TEST DESCRIPTION

The test vehicle is driven a total of 5,050 miles; approximately 3,750 miles on the PSBRTF Durability Test Track and approximately 1,300 miscellaneous other miles. The test will be conducted with the bus operated under three different loading conditions. The first segment will consist of approximately 2,125 miles with the bus operated at GVW. The second segment will consist of approximately 1,300 miles with the bus operated at SLW. The remainder of the test, approximately 2,125 miles, will be conducted with the bus loaded to CW. If GVW exceeds the axle design weights, then the load will be adjusted to the axle design weights and the change will be recorded. All subsystems are run during these tests in their normal operating modes. All recommended manufacturers servicing is to be followed and noted on the vehicle maintainability log. Servicing items accelerated by the durability tests will be compressed by 10:1; all others will be done on a 1:1 mi/mi basis. Unscheduled breakdowns and repairs are recorded on the same log as are any unusual occurrences as noted by the driver. Once a week the test vehicle shall be washed down and thoroughly inspected for any signs of failure.

5.7-III. DISCUSSION

The Structural Durability Test was started on April 11, 2016 and was conducted until August 4, 2016. The first 2,125 miles were performed at a GVW of 10,290 lbs. and completed on May 10, 2016. This test bus is not designed to accommodate standing passengers; therefore, GVW and SLW are the same 10,290 lbs. The 1,300 mile SLW segment was performed at the same 10,290 lbs and completed on May 31, 2016. The final 2,125 mile segment was performed at a CW of 7,590 lbs and completed on August 4, 2016.

The following mileage summary presents the accumulation of miles during the Structural Durability Test. The driving schedule is included, showing the operating duty cycle. A detailed plan view of the Test Track Facility and Durability Test Track are attached for reference. Also, a durability element profile detail shows all the measurements of the different conditions. Finally, photographs illustrating some of the failures that were encountered during the Structural Durability Test are included.

Starcraft Bus #1609

MILEAGE DRIVEN/RECORDED FROM DRIVER'S LOGS

DATE	TOTAL DURABILITY TRACK	TOTAL OTHER MILES	TOTAL
04/11/16 TO 04/17/16	318.00	87.00	405.00
04/18/16 TO 04/24/16	523.00	22.00	545.00
04/25/16 TO 05/01/16	138.00	101.00	239.00
05/02/16 TO 05/08/16	456.00	116.00	572.00
05/09/16 TO 05/15/16	570.00	26.00	596.00
05/16/16 TO 05/22/16	82.00	70.00	152.00
05/26/16 TO 05/29/16	38.00	367.00	405.00
05/30/16 TO 06/05/16	244.00	39.00	283.00
06/06/16 TO 06/12/16	622.00	126.00	748.00
06/13/16 TO 06/19/16	287.00	60.00	347.00
06/20/16 TO 06/26/16	472.00	66.00	538.00
06/27/16 TO 07/03/16	0.00	88.00	88.00
07/04/16 TO 07/10/16	0.00	15.00	15.00
07/11/16 TO 07/17/16	0.00	0.00	0.00

Starcraft Bus #1609

MILEAGE DRIVEN/RECORDED FROM DRIVER'S LOGS

DATE	TOTAL DURABILITY TRACK	TOTAL OTHER MILES	TOTAL
07/18/16 TO 07/24/16	0.00	0.00	0.00
07/25/16 TO 07/31/16	0.00	0.00	0.00
08/01/16 TO 08/07/16	0.00	117.00	117.00
TOTAL	3750.00	1300.00	5050.00

Table 4. Driving Schedule for Bus Operation on the Durability Test Track.

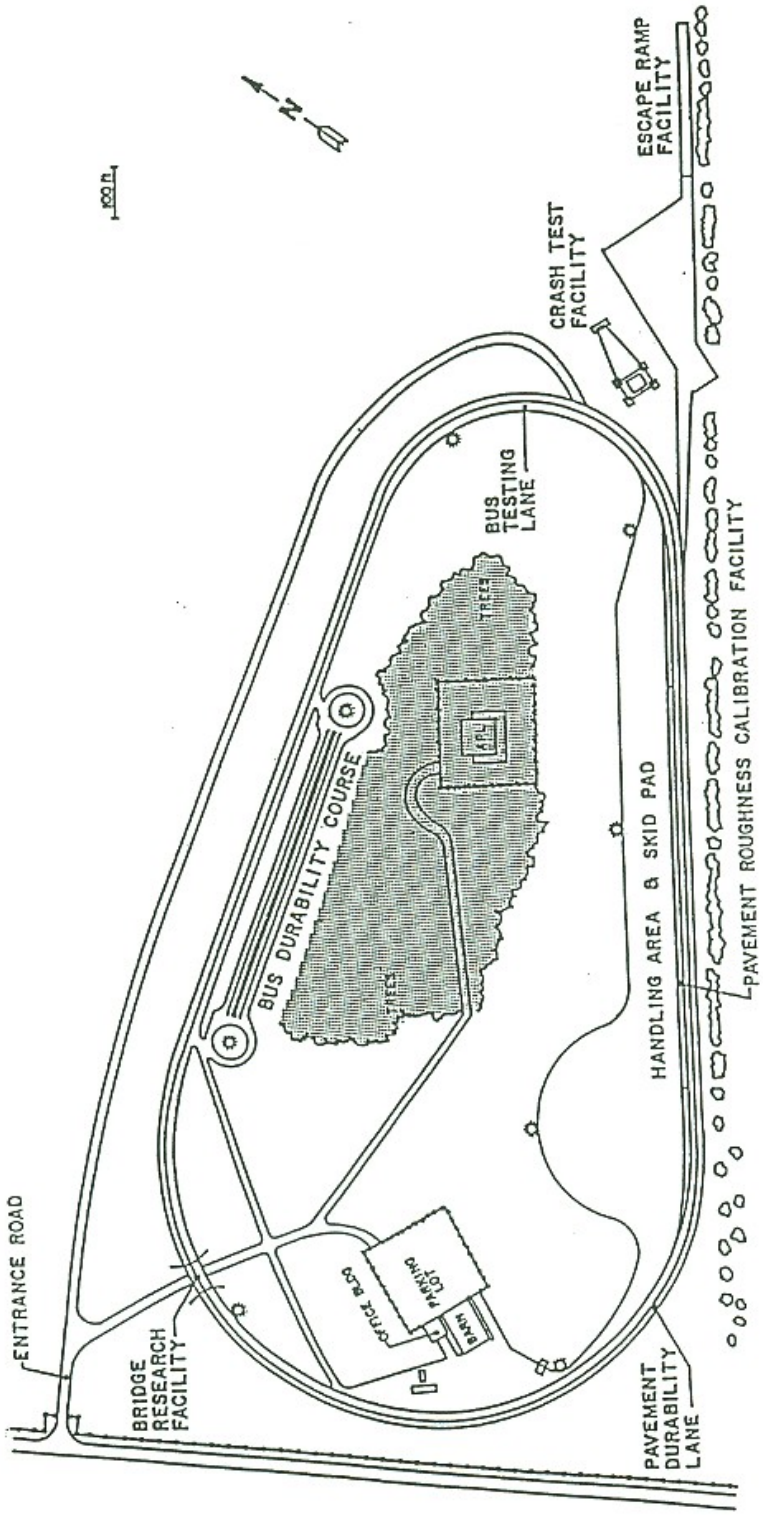
STANDARD OPERATING SCHEDULE

Monday through Friday

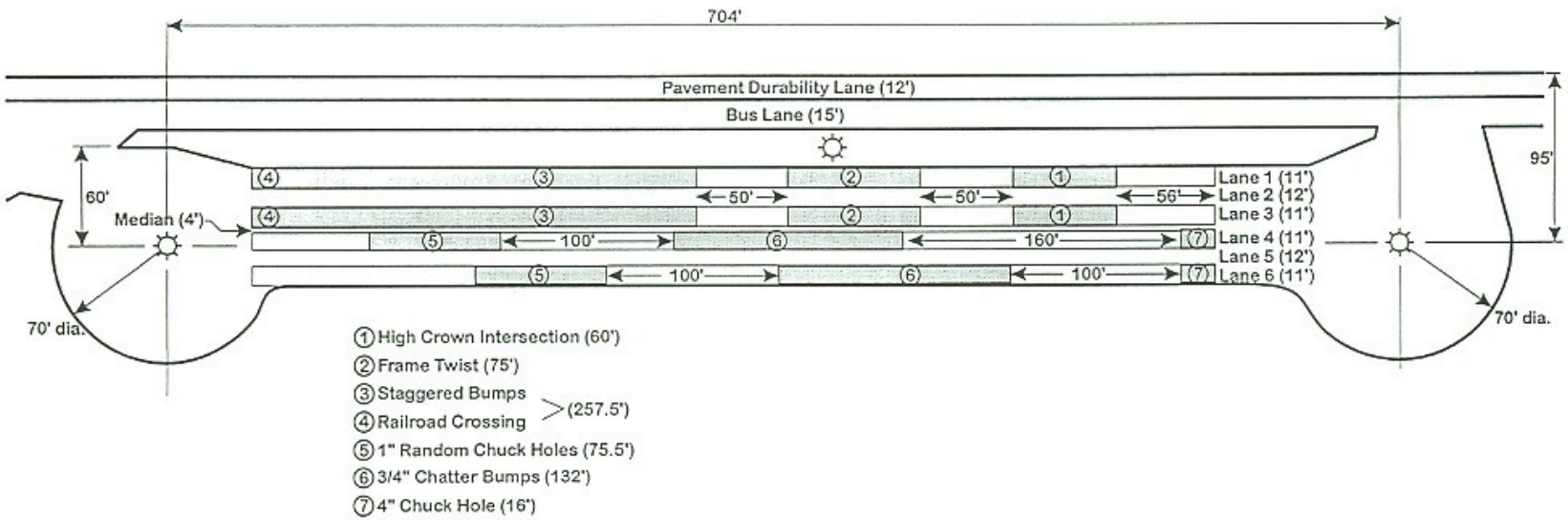
	HOUR	ACTION
Shift 1	midnight	D
	1:40 am	C
	1:50 am	B
	2:00 am	D
	3:35 am	C
	3:45 am	B
	4:05 am	D
	5:40 am	C
	5:50 am	B
	6:00 am	D
	7:40 am	C
	7:50 am	F
Shift 2	8:00 am	D
	9:40 am	C
	9:50 am	B
	10:00 am	D
	11:35 am	C
	11:45 am	B
	12:05 pm	D
	1:40 pm	C
	1:50 pm	B
	2:00 pm	D
	3:40 pm	C
	3:50 pm	F
Shift 3	4:00 pm	D
	5:40 pm	C
	5:50 pm	B
	6:00 pm	D
	7:40 pm	C
	7:50 pm	B
	8:05 pm	D
	9:40 pm	C
	9:50 pm	B
	10:00 pm	D
	11:40 pm	C
	11:50 pm	F

B---Break
C----Cycle all systems five times, visual inspection, driver's log entries
D----Drive bus as specified by procedure
F----Fuel bus, complete driver's log shift entries

"PLAN VIEW OF PENN STATE BUS TESTING AND RESEARCH FACILITY"



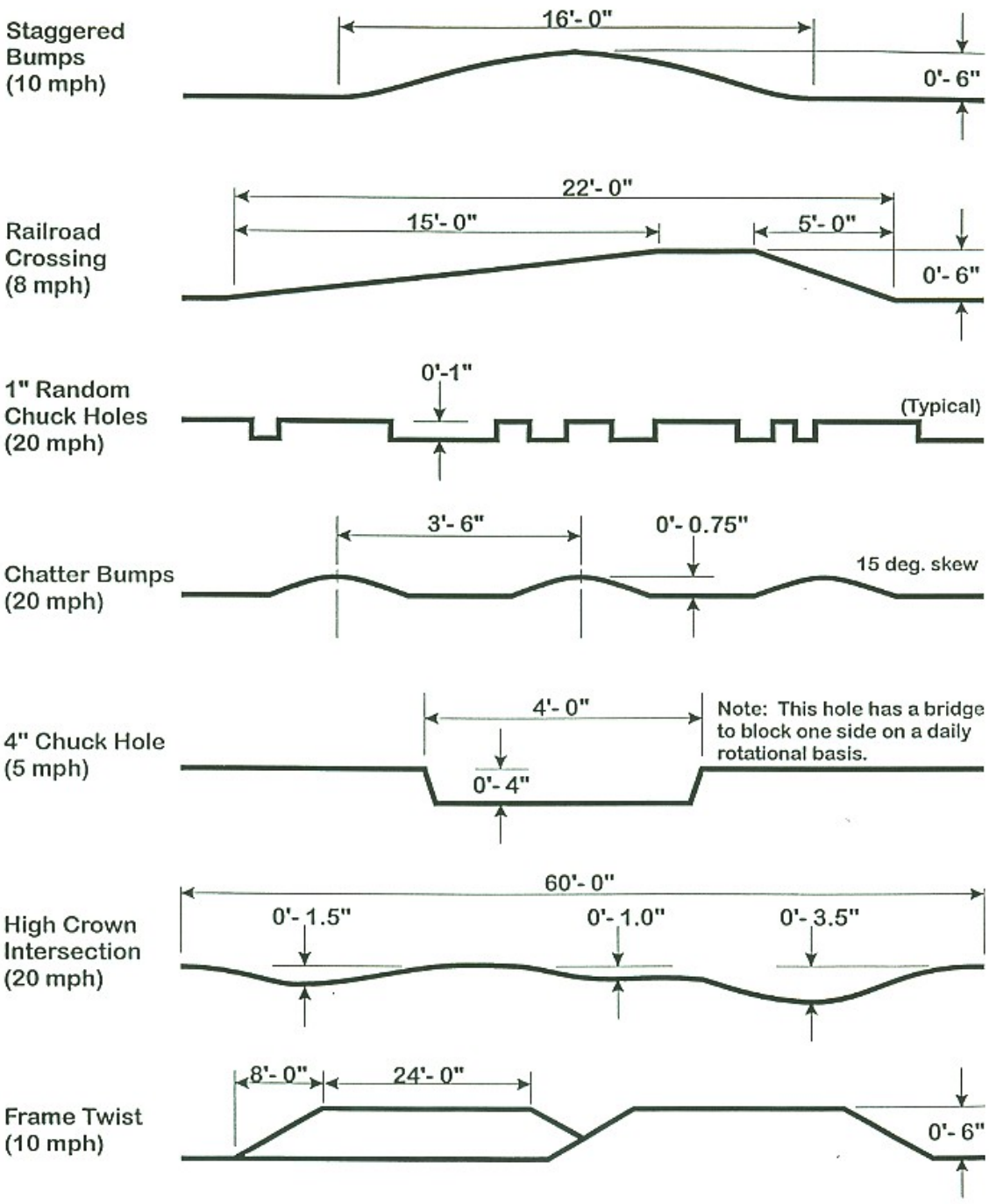
BUS TESTING AND RESEARCH TEST TRACK
UNIVERSITY PARK, PA



Plan View

Vehicle Durability Test Track

The Pennsylvania Transportation Institute
Penn State



Durability Element Profiles

The Pennsylvania Transportation Institute
Penn State

(Page 1 of 1)
UNSCHEDULED MAINTENANCE
STARCRAFT #1609

DATE	TEST MILES	SERVICE	ACTIVITY	MAN HOURS	DOWN TIME
04-25-16	1,029	The right side, outside rear view mirror fasteners are locse.	Fasteners tightened.	1.00	1.00
04-29-16	1,029	The right rear, lower bolt is broken on the sway bar link. Parts ordered.	Both rear sway bar links replaced.	4.00	88.00
05-11-16	2,138	The exhaust tailpipe hanger is broken.	Exhaust tailpipe hanger replaced.	1.00	1.00
06-03-16	3,096	The right side sway bar bolt is broken on the rear sway bar.	Broken bolt replaced.	1.00	1.00
06-14-16	4,292	The rear bumper mounting brackets are broken.	Mounting brackets welded/repaired.	4.00	4.00
06-22-16	4,292	The rear sway bar link mounting holes are egged out. Parts ordered.	Rear sway bar and links replaced.	4.00	136.00



BROKEN RIGHT REAR SWAY BAR BOLT
(1,029 TEST MILES)



BROKEN RIGHT REAR SWAY BAR BOLT
(3,096 TEST MILES)

UNSCHEDULED MAINTENANCE CONT.



BROKEN REAR BUMPER BRACKET
(4,292 TEST MILES)



REAR SWAY BAR MOUNTING HOLES EGGED OUT
(4,292 TEST MILES)

6. FUEL ECONOMY TEST - A FUEL CONSUMPTION TEST USING AN APPROPRIATE OPERATING CYCLE

6-I. TEST OBJECTIVE

The objective of this test is to provide accurate comparable fuel consumption data on transit buses produced by different manufacturers. This fuel economy test bears no relation to the calculations done by the Environmental Protection Agency (EPA) to determine levels for the Corporate Average Fuel Economy Program. EPA's calculations are based on tests conducted under laboratory conditions intended to simulate city and highway driving. This fuel economy test, as designated here, is a measurement of the fuel expended by a vehicle traveling a specified test loop under specified operating conditions. The results of this test will not represent actual mileage but will provide data that can be used by recipients to compare buses tested by this procedure.

6-II. TEST DESCRIPTION

This test requires operation of the bus over a course based on the Transit Coach Operating Duty Cycle (ADB Cycle) at seated load weight using a procedure based on the Fuel Economy Measurement Test (Engineering Type) For Trucks and Buses: SAE 1376 July 82. The procedure has been modified by elimination of the control vehicle and by modifications as described below. The inherent uncertainty and expense of utilizing a control vehicle over the operating life of the facility is impractical.

The fuel economy test will be performed as soon as possible (weather permitting) after the completion of the GVW portion of the structural durability test. It will be conducted on the bus test lane at the Penn State Test Facility. Signs are erected at carefully measured points which delineate the test course. A test run will comprise 3 CBD phases, 2 Arterial phases, and 1 Commuter phase. An electronic fuel measuring system will indicate the amount of fuel consumed during each phase of the test. The test runs will be repeated until there are at least two runs in both the clockwise and counterclockwise directions in which the fuel consumed for each run is within ± 4 percent of the average total fuel used over the 4 runs. A 20-minute idle consumption test is performed just prior to and immediately after the driven portion of the fuel economy test. The amount of fuel consumed while operating at normal/low idle is recorded on the Fuel Economy Data Form. This set of four valid runs along with idle consumption data comprise a valid test.

The test procedure is the ADB cycle with the following four modifications:

1. The ADB cycle is structured as a set number of miles in a fixed time in the following order: CBD, Arterial, CBD, Arterial, CBD, and Commuter. A separate idle fuel consumption measurement is performed at the beginning and end of the fuel economy test. This phase sequence permits the reporting of fuel consumption for each of these phases separately, making the data more useful to bus manufacturers and transit properties.

2. The operating profile for testing purposes shall consist of simulated transit type service at seated load weight. The three test phases (figure 6-1) are: a central business district (CBD) phase of 2 miles with 7 stops per mile and a top speed of 20 mph; an arterial phase of 2 miles with 2 stops per mile and a top speed of 40 mph; and a commuter phase of 4 miles with 1 stop and a maximum speed of 40 mph. At each designated stop the bus will remain stationary for seven seconds. During this time, the passenger doors shall be opened and closed.

3. The individual ADB phases remain unaltered with the exception that 1 mile has been changed to 1 lap on the Penn State Test Track. One lap is equal to 5,042 feet. This change is accommodated by adjusting the cruise distance and time.

4. The acceleration profile, for practical purposes and to achieve better repeatability, has been changed to "full throttle acceleration to cruise speed".

Several changes were made to the Fuel Economy Measurement Test (Engineering Type) For Trucks and Buses: SAE 1376 July 82:

1. Sections 1.1, and 1.2 only apply to diesel, gasoline, methanol, and any other fuel in the liquid state (excluding cryogenic fuels).

1.1 SAE 1376 July 82 requires the use of at least a 16-gal fuel tank. Such a fuel tank when full would weigh approximately 160 lb. It is judged that a 12-gal tank weighing approximately 120 lb will be sufficient for this test and much easier for the technician and test personnel to handle.

1.2 SAE 1376 July 82 mentions the use of a mechanical scale or a flowmeter system. This test procedure uses a load cell readout combination that provides an accuracy of 0.5 percent in weight and permits on-board weighing of the gravimetric tanks at the end of each phase. This modification permits the determination of a fuel economy value for each phase as well as the overall cycle.

2. Section 2.1 applies to compressed natural gas (CNG), liquefied natural gas (LNG), cryogenic fuels, and other fuels in the vapor state.

2.1 A laminar type flowmeter will be used to determine the fuel consumption. The pressure and temperature across the flow element will be monitored by the flow computer. The flow computer will use this data to calculate the gas flow rate. The flow computer will also display the flow rate (scfm) as well as the total fuel used (scf). The total fuel used (scf) for each phase will be recorded on the Fuel Economy Data Form.

3. Use both Sections 1 and 2 for dual fuel systems.

FUEL ECONOMY CALCULATION PROCEDURE

A. For diesel, gasoline, methanol and fuels in the liquid state.

The reported fuel economy is based on the following: measured test quantities--distance traveled (miles) and fuel consumed (pounds); standard reference values--density of water at 60EF (8.3373 lbs/gal) and volumetric heating value of standard fuel; and test fuel specific gravity (unitless) and volumetric heating value (BTU/gal). These combine to give a fuel economy in miles per gallon (mpg) which is corrected to a standard gallon of fuel referenced to water at 60EF. This eliminates fluctuations in fuel economy due to fluctuations in fuel quality. This calculation has been programmed into a computer and the data processing is performed automatically.

The fuel economy correction consists of three steps:

1.) Divide the number of miles of the phase by the number of pounds of fuel consumed

phase	miles per phase	total miles per run
CBD	1.9097	5.7291
ART	1.9097	3.8193
COM	3.8193	3.8193

$FEo_{mi/lb}$ = Observed fuel economy = $\frac{\text{miles}}{\text{lb of fuel}}$

2.) Convert the observed fuel economy to miles per gallon [mpg] by multiplying by the specific gravity of the test fuel Gs (referred to water) at 60°F and multiply by the density of water at 60°F

$$\mathbf{FEo_{mpg}} = \mathbf{FEc_{mi/lb}} \times Gs \times Gw$$

where **Gs** = Specific gravity of test fuel at 60°F (referred to water)
Gw = 8.3373 lb/gal

3.) Correct to a standard gallon of fuel by dividing by the volumetric heating value of the test fuel (H) and multiplying by the volumetric heating value of standard reference fuel (Q). Both heating values must have the same units.

$$\mathbf{FEc} = \mathbf{FEo_{mpg}} \times \frac{Q}{H}$$

where

H = Volumetric heating value of test fuel [BTU/gal]
Q = Volumetric heating value of standard reference fuel

Combining steps 1-3 yields

$$\Rightarrow \quad FEc = \frac{\text{miles}}{\text{lbs}} \times (Gs \times Gw) \times \frac{Q}{H}$$

4.) Covert the fuel economy from mpg to an energy equivalent of miles per BTU. Since the number would be extremely small in magnitude, the energy equivalent will be represented as miles/BTUx10^6.

Eq = Energy equivalent of converting mpg to mile/BTUx10^6.

$$Eq = ((mpg)/(H))x10^6$$

B. CNG, LNG, cryogenic and other fuels in the vapor state.

The reported fuel economy is based on the following: measured test quantities--distance traveled (miles) and fuel consumed (scf); density of test fuel, and volumetric heating value (BTU/lb) of test fuel at standard conditions (P=14.73 psia and T=60°F). These combine to give a fuel economy in miles per lb. The energy equivalent (mile/BTUx10^6) will also be provided so that the results can be compared to buses that use other fuels.

1.) Divide the number of miles of the phase by the number of standard cubic feet (scf) of fuel consumed.

phase	miles per phase	total miles per run
CBD	1.9097	5.7291
ART	1.9097	3.8193
COM	3.8193	3.8193

$$\mathbf{FEo_{mi/scf}} = \text{Observed fuel economy} = \frac{\text{miles}}{\text{scf of fuel}}$$

2.) Convert the observed fuel economy to miles per lb by dividing FEo by the density of the test fuel at standard conditions (Lb/ft^3).

Note: The density of test fuel must be determined at standard conditions as described above. If the density is not defined at the above standard conditions, then a correction will be needed before the fuel economy can be calculated.

$$\mathbf{FEo_{mi/lb}} = FEo / Gm$$

where Gm = Density of test fuel at standard conditions

3.) Convert the observed fuel economy (FEomi/lb) to an energy equivalent of (miles/BTUx10^6) by dividing the observed fuel economy (FEomi/lb) by the heating value of the test fuel at standard conditions.

$$Eq = ((FEomi/lb)/H)x10^6$$

where

Eq = Energy equivalent of miles/lb to mile/BTUx10^6
H = Volumetric heating value of test fuel at standard conditions

6-III. DISCUSSION

This is a comparative test of fuel economy using gasoline fuel with a heating value of 19,303.0 btu/lb. The driving cycle consists of Central Business District (CBD), Arterial (ART), and Commuter (COM) phases as described in 6-II. The fuel consumption for each driving cycle and for idle is measured separately. The results are corrected to a reference fuel with a volumetric heating value of 126,700.0 btu/gal.

An extensive pretest maintenance check is made including the replacement of all lubrication fluids. The details of the pretest maintenance are given in the first three Pretest Maintenance Forms. The fourth sheet shows the Pretest Inspection. The next four Fuel Economy Forms provide the data from the four test runs. Finally, the summary sheet provides the average fuel consumption. The overall average is based on total fuel and total mileage for each phase. The overall average fuel consumption values were; CBD – 9.94 mpg, ART – 10.03 mpg, and COM – 17.72 mpg. Average fuel consumption at idle was 0.31 gph.

FUEL ECONOMY PRE-TEST MAINTENANCE FORM

Bus Number: 1609	Date: 06-29-16	SLW (lbs): 10,290
Personnel: T.S., P.D., S.R. & E.D.		

FUEL SYSTEM	OK
Install fuel measurement system	✓
Replace fuel filter	✓
Check for fuel leaks	✓
Specify fuel type (refer to fuel analysis)	Gasoline
Remarks: None noted	
BRAKES/TIRES	OK
Inspect hoses	✓
Inspect brakes	✓
Relube wheel bearings	✓
Check tire inflation pressures (mfg. specs.)	✓
Check tire wear (less than 50%)	✓
Remarks: None noted	
COOLING SYSTEM	OK
Check hoses and connections	✓
Check system for coolant leaks	✓
Remarks: None noted	

FUEL ECONOMY PRE-TEST MAINTENANCE FORM

Bus Number: 1609	Date: 06-29-16
Personnel: T.S., P.D., S.R. & E.D.	

ELECTRICAL SYSTEMS	OK
Check battery	✓
Inspect wiring	✓
Inspect terminals	✓
Check lighting	✓
Remarks: None noted	

DRIVE SYSTEM	OK
Drain transmission fluid	✓
Replace filter/gasket	✓
Check hoses and connections	✓
Replace transmission fluid	✓
Check for fluid leaks	✓
Remarks: None Noted	

LUBRICATION	OK
Drain crankcase oil	✓
Replace filters	✓
Replace crankcase oil	✓
Check for oil leaks	✓
Check oil level	✓
Lube all chassis grease fittings	✓
Lube universal joints	✓
Replace differential lube including axles	N/A
Remarks: None noted	

FUEL ECONOMY PRE-TEST MAINTENANCE FORM

Bus Number: 1609	Date: 06-29-16
Personnel: T.S., P.D., S.R. & E.D.	

EXHAUST/EMISSION SYSTEM	OK
Check for exhaust leaks	✓
Remarks: None noted	
ENGINE	OK
Replace air filter	✓
Inspect air compressor and air system	N/A
Inspect vacuum system, if applicable	N/A
Check and adjust all drive belts	✓
Check cold start assist, if applicable	N/A
Remarks: None noted	
STEERING SYSTEM	OK
Check power steering hoses and connectors	✓
Service fluid level	✓
Check power steering operation	✓
Remarks: None noted	
	OK
Ballast bus to seated load weight	✓
TEST DRIVE	OK
Check brake operation	✓
Check transmission operation	✓
Remarks: None noted	

FUEL ECONOMY PRE-TEST INSPECTION FORM

Bus Number: 1609	Date: 06-30-16
Personnel: S.R. & T.S.	

PRE WARM-UP	If OK, Initial
Fuel Economy Pre-Test Maintenance Form is complete	S.R.
Cold tire pressure (psi): Front 67 Middle N/A Rear 62	S.R./M.H.
Engine oil level	S.R./M.H.
Engine coolant level	S.R./M.H.
Interior and exterior lights on, evaporator fan on	S.R./M.H.
Fuel economy instrumentation installed and working properly.	S.R.
Fuel line -- no leaks or kinks	S.R.
Speed measuring system installed on bus. Speed indicator installed in front of bus and accessible to TECH and Driver.	S.R.
Bus is loaded to SLW	S.R.
WARM-UP	**If OK, Initial**
Bus driven for at least one hour warm-up	S.R./M.H.
No extensive or black smoke from exhaust	S.R./M.H.
POST WARM-UP	**If OK, Initial**
Warm tire pressure (psi): Front 80 Middle N/A Rear 75	S.R.
Environmental conditions Average wind speed <12 mph and maximum gusts <15 mph Ambient temperature between 30°F(-1C°) and 90°F(32°C) Track surface is dry Track is free of extraneous material and clear of interfering traffic	S.R.

FUEL ECONOMY DATA FORM (Liquid Fuels)

Bus Number: 1609	Manufacturer: Starcraft	Date: 6-30-16
Run Number: 1	Personnel: S.R., T.S. & M.H.	
Test Direction: □CW or ■CCW	Temperature (°F): 68	Humidity (%): 53
SLW (lbs): 10,290	Wind Speed (mph) & Direction: 5 S	Barometric Pressure (in.Hg): 30.10

Cycle Type	Time (min:sec)		Cycle Time (min:sec)	Fuel Temperature (°C)	Flow Meter Reading (gals)		Fuel Used (gals)
	Start	Finish		Start	Start	Finish	
CBD #1	0	8:46	8:46	26.9	0	.198	.198
ART #1	0	4:04	4:04	26.8	0	.197	.197
CBD #2	0	8:39	8:39	27.5	0	.199	.199
ART #2	0	4:00	4:00	27.0	0	.197	.197
CBD #3	0	8:32	8:32	26.5	0	.199	.199
COMMUTER	0	5:59	5:59	25.4	0	.227	.227
						Total Fuel =	1.217 gals

20 minute idle : Total Fuel Used = .106 gals

Heating Value = 19,303 BTU/LB

Comments: None noted

FUEL ECONOMY DATA FORM (Liquid Fuels)

Bus Number: 1609	Manufacturer: Starcraft	Date: 6-30-16
Run Number: 2	Personnel: S.R., T.S. & M.H.	
Test Direction: ■CW or □CCW	Temperature (°F): 72	Humidity (%): 53
SLW (lbs): 10,290	Wind Speed (mph) & Direction: 6 N	Barometric Pressure (in.Hg): 30.10

Cycle Type	Time (min:sec)		Cycle Time (min:sec)	Fuel Temperature (°C)	Flow Meter Reading (gals)		Fuel Used (gals)
	Start	Finish		Start	Start	Finish	
CBD #1	0	8:42	8:42	27.8	0	.199	.199
ART #1	0	4:01	4:01	27.9	0	.201	.201
CBD #2	0	8:39	8:39	29.9	0	.202	.202
ART #2	0	4:02	4:02	30.2	0	.201	.201
CBD #3	0	8:35	8:35	30.9	0	.202	.202
COMMUTER	0	6:01	6:01	32.0	0	.229	.229
							Total Fuel = 1.234 gals

20 minute idle : Total Fuel Used = N/A gals

Heating Value = 19,303 BTU/LB

Comments: None noted

FUEL ECONOMY DATA FORM (Liquid Fuels)

Bus Number: 1609	Manufacturer: Starcraft	Date: 6-30-16
Run Number: 3	Personnel: S.R., T.S. & M.H.	
Test Direction: □CW or ■CCW	Temperature (°F): 77	Humidity (%): 43
SLW (lbs): 10,290	Wind Speed (mph) & Direction: 4 N	Barometric Pressure (in.Hg): 30.10

Cycle Type	Time (min:sec)		Cycle Time (min:sec)	Fuel Temperature (°C)	Flow Meter Reading (gals)		Fuel Used (gals)
	Start	Finish		Start	Start	Finish	
CBD #1	0	8:34	8:34	32.7	0	.203	.203
ART #1	0	4:02	4:02	28.2	0	.203	.203
CBD #2	0	8:33	8:33	29.3	0	.205	.205
ART #2	0	4:02	4:02	28.6	0	.201	.201
CBD #3	0	8:34	8:34	30.4	0	.204	.204
COMMUTER	0	5:59	5:59	28.4	0	.234	.234
						Total Fuel =	1.250 gals

20 minute idle : Total Fuel Used = N/A gals

Heating Value = 19,303 BTU/LB

Comments: None noted

FUEL ECONOMY DATA FORM (Liquid Fuels)

Page 4 of 4

Bus Number: 1609	Manufacturer: Starcraft	Date: 6-30-16
Run Number: 4	Personnel: S.R., T.S. & M.H.	
Test Direction: ■CW or □CCW	Temperature (°F): 80	Humidity (%): 42
SLW (lbs): 10,290	Wind Speed (mph) & Direction: Calm	Barometric Pressure (in.Hg): 30.10

Cycle Type	Time (min:sec)		Cycle Time (min:sec)	Fuel Temperature (°C)	Flow Meter Reading (gals)		Fuel Used (gals)
	Start	Finish		Start	Start	Finish	
CBD #1	0	8:42	8:42	31.5	0	.206	.206
ART #1	0	4:00	4:00	32.9	0	.202	.202
CBD #2	0	8:33	8:33	32.9	0	.202	.202
ART #2	0	4:00	4:00	33.0	0	.197	.197
CBD #3	0	8:41	8:41	33.8	0	.201	.201
COMMUTER	0	6:02	6:02	33.3	0	.216	.216
							Total Fuel = 1.224 gals

20 minute idle : Total Fuel Used = .109 gals

Heating Value = 19,303 BTU/LB

Comments: None noted

FUEL ECONOMY SUMMARY SHEET

BUS MANUFACTURER: Starcraft BUS NUMBER: 1609
BUS MODEL : Starlite Transit TEST DATE : 06/30/16

FUEL TYPE : GASOLINE
SP. GRAVITY : .7382
HEATING VALUE : 19303.00 BTU/Lb
FUEL TEMPERATURE : 86.00 deg F
Standard Conditions: 60 deg F and 14.7 psi
Density of Water : 8.3373 lb/gallon at 60 deg F

CYCLE	TOTAL FUEL USED(GAL)	TOTAL MILES	FUEL ECONOMY MPG(Measured)	FUEL ECONOMY MPG (Corrected)
Run #1, CCW				
CBD	.596	5.73	9.614	10.09
ART	.394	3.82	9.695	10.18
COM	.227	3.82	16.828	17.67
TOTAL	1.217	13.37	10.986	11.53
Run #2, CW				
CBD	.603	5.73	9.502	9.98
ART	.402	3.82	9.502	9.98
COM	.229	3.82	16.681	17.51
TOTAL	1.234	13.37	10.835	11.37
Run #3, CCW				
CBD	.612	5.73	9.363	9.83
ART	.404	3.82	9.455	9.93
COM	.234	3.82	16.325	17.14
TOTAL	1.250	13.37	10.696	11.23
Run #4, CW				
CBD	.609	5.73	9.409	9.88
ART	.399	3.82	9.574	10.05
COM	.216	3.82	17.685	18.57
TOTAL	1.224	13.37	10.923	11.47

IDLE CONSUMPTION (MEASURED)

First 20 Minutes Data: .11GAL Last 20 Minutes Data: .11GAL
Average Idle Consumption : .32GAL/Hr

RUN CONSISTENCY: % Difference from overall average of total fuel used

Run 1: 1.2 Run 2: -.2 Run 3: -1.5 Run 4: .6

SUMMARY (CORRECTED VALUES)

Average Idle Consumption : .31 G/Hr
Average CBD Phase Consumption : 9.94 MPG
Average Arterial Phase Consumption: 10.03 MPG
Average Commuter Phase Consumption: 17.72 MPG
Overall Average Fuel Consumption : 11.40 MPG
Overall Average Fuel Consumption : 95.97 Miles/ Million BTU

7. NOISE

7.1 INTERIOR NOISE AND VIBRATION TESTS

7.1-I. TEST OBJECTIVE

The objective of these tests is to measure and record interior noise levels and check for audible vibration under various operating conditions.

7.1-II. TEST DESCRIPTION

During this series of tests, the interior noise level will be measured at several locations with the bus operating under the following three conditions:

1. With the bus stationary, a white noise generating system shall provide a uniform sound pressure level equal to 80 dB(A) on the left, exterior side of the bus. The engine and all accessories will be switched off and all openings including doors and windows will be closed. This test will be performed at the Test Track Facility.

2. The bus accelerating at full throttle from a standing start to 35 mph on a level pavement. All openings will be closed and all accessories will be operating during the test. This test will be performed on the track at the Test Track Facility.

3. The bus will be operated at various speeds from 0 to 55 mph with and without the air conditioning and accessories on. Any audible vibration or rattles will be noted. This test will be performed on the test segment between the Test Track and the Bus Testing Center.

All tests will be performed in an area free from extraneous sound-making sources or reflecting surfaces. The ambient sound level as well as the surrounding weather conditions will be recorded in the test data.

7.1-III. DISCUSSION

This test is performed in three parts. The first part exposes the exterior of the vehicle to 80.0 dB(A) on the left side of the bus and the noise transmitted to the interior is measured. The overall average of the six measurements was 45.9 dB(A); ranging from 46.5 dB(A) at the front passenger seats and middle speaker to 45.1 dB(A) at the rear passenger seats. The interior ambient noise level for this test was < 30.0 dB(A).

The second test measures interior noise during acceleration from 0 to 35 mph. This noise level ranged from 78.6 dB(A) at the rear passenger seats to 84.5 dB(A) at the driver's seat. The overall average was 81.5 dB(A). The interior ambient noise level for this test was < 30.0 dB(A).

The third part of the test is to listen for resonant vibrations, rattles, and other noise sources while operating over the road. No vibrations or rattles were noted.

INTERIOR NOISE TEST DATA FORM
Test Condition 1: 80 dB(A) Stationary White Noise

Bus Number: 1609	Date: 7-26-16
Personnel: T.S., S.R. & E.D.	
Temperature (°F): 78	Humidity (%): 71
Wind Speed (mph): 4	Wind Direction: SSW
Barometric Pressure (in.Hg): 30.10	
Initial Sound Level Meter Calibration: 93.7 dB(A)	
Interior Ambient Noise Level dB(A): < 30.0	Exterior Ambient Noise Level dB(A): 37.3
Microphone Height During Testing (in): 47.5	
Initial Reading at Bus: 80.7 dB(A)	Final Reading at Bus: 80.6 dB(A)

Reading Location	Measured Sound Level dB(A)
Driver's Seat	46.0
Front Passenger Seats	46.5
In Line with Front Speaker	46.0
In Line with Middle Speaker	46.5
In Line with Rear Speaker	45.5
Rear Passenger Seats	45.1

Final Sound Level Meter Calibration: 93.8 dB(A)

Comments: None noted.

INTERIOR NOISE TEST DATA FORM
Test Condition 2: 0 to 35 mph Acceleration Test

Bus Number: 1609	Date: 05-17-16
Personnel: T.S., T.G. & C.S.	
Temperature (°F): 66	Humidity (%): 48
Wind Speed (mph): 6	Wind Direction: SSW
Barometric Pressure (in.Hg): 28.89	
Initial Sound Level Meter Calibration: 93.8 dB(A)	
Interior Ambient Noise Level dB(A): < 30	Exterior Ambient Noise Level dB(A): 41.5
Microphone Height During Testing (in): 47	

Reading Location	Measured Sound Level dB(A)
Driver's Seat	84.5
Front Passenger Seats	81.0
Middle Passenger Seats	82.0
Rear Passenger Seats	78.6

Final Sound Level Meter Calibration: 93.7 dB(A)

Comments: None noted

INTERIOR NOISE TEST DATA FORM
Test Condition 3: Audible Vibration Test

Bus Number: 1609	Date: 05-17-16
Personnel: T.G., T.S. & C.S.	
Temperature (°F): 69	

Describe the following possible sources of noise and give the relative location on the bus.

Source of Noise	Location	Description of Noise
Engine and Accessories	None	N/A
Windows and Doors	None	N/A
Seats and Wheel Chair lifts	None	N/A
Other	None	N/A

Comment on any other vibration or noise source which may have occurred
that is not described above: None
Comments: None

7.1 INTERIOR NOISE TEST



TEST BUS SET-UP FOR 80 dB(A)
INTERIOR NOISE TEST

7.2 EXTERIOR NOISE TESTS

7.2-I. TEST OBJECTIVE

The objective of this test is to record exterior noise levels when a bus is operated under various conditions.

7.2-II. TEST DESCRIPTION

In the exterior noise tests, the bus will be operated at a SLW in three different conditions using a smooth, straight and level roadway:

1. Accelerating at full throttle from a constant speed at or below 35 mph and just prior to transmission up shift.
2. Accelerating at full throttle from standstill.
3. Stationary, with the engine at low idle, high idle, and wide open throttle.

In addition, the buses will be tested with and without the air conditioning and all accessories operating. The exterior noise levels will be recorded.

The test site is at the PSBRTF and the test procedures will be in accordance with SAE Standards SAE J366b, Exterior Sound Level for Heavy Trucks and Buses. The test site is an open space free of large reflecting surfaces. A noise meter placed at a specified location outside the bus will measure the noise level.

During the test, special attention should be paid to:

1. The test site characteristics regarding parked vehicles, signboards, buildings, or other sound-reflecting surfaces
2. Proper usage of all test equipment including set-up and calibration
3. The ambient sound level

7.2-III. DISCUSSION

The Exterior Noise Test determines the noise level generated by the vehicle under different driving conditions and at stationary low and high idle, with and without air conditioning and accessories operating. The test site is a large, level, bituminous paved area with no reflecting surfaces nearby.

With an exterior ambient noise level of 41.4 dB(A), the average test result obtained while accelerating from a constant speed was 74.8 dB(A) on the right side and 76.0 dB(A) on the left side.

When accelerating from a standstill with an exterior ambient noise level of 44.1 dB(A), the average of the results obtained were 70.7 dB(A) on the right side and 74.2 dB(A) on the left side.

With the vehicle stationary and the engine, accessories, and air conditioning on, the measurements averaged 55.7 dB(A) at low idle and 66.3 dB(A) at wide open throttle. With the accessories and air conditioning off, the readings averaged 14.0 dB(A) lower at low idle and 0.9 dB(A) lower at wide open throttle. The exterior ambient noise level measured during this test was 33.7 dB(A). Note: This test bus is not equipped with a high idle mode.

EXTERIOR NOISE TEST DATA FORM
Accelerating from Constant Speed

Bus Number: 1609	Date: 05-17-16
Personnel: T.G., T.S. & C.S.	
Temperature (°F): 69	Humidity (%): 48
Wind Speed (mph): 2	Wind Direction: Variable
Barometric Pressure (in.Hg): 28.87	

Verify that microphone height is 4 feet, wind speed is less than 12 mph and ambient temperature is between 30°F and 90°F: ■

Initial Sound Level Meter Calibration: 93.8 dB(A)

Exterior Ambient Noise Level: 41.4 dB(A)

Accelerating from Constant Speed Curb (Right) Side		Accelerating from Constant Speed Street (Left) Side	
Run #	Measured Noise Level dB(A)	Run #	Measured Noise Level dB(A)
1	75.1	1	75.3
2	74.5	2	74.3
3	73.5	3	75.5
4	74.0	4	75.2
5	74.2	5	76.4
6	N/A	6	N/A
7	N/A	7	N/A
8	N/A	8	N/A
9	N/A	9	N/A
10	N/A	10	N/A
Average of two highest actual noise levels = 74.8 dB(A)		Average of two highest actual noise levels = 76.0 dB(A)	

Final Sound Level Meter Calibration Check: 93.7 dB(A)

Comments: None noted

EXTERIOR NOISE TEST DATA FORM
Accelerating from Standstill

Bus Number: 1609	Date: 05-17-16
Personnel: T.G., T.S. & C.S.	
Temperature (°F): 66	Humidity (%): 48
Wind Speed (mph): 3	Wind Direction: Variable
Barometric Pressure (in.Hg): 28.87	

Verify that microphone height is 4 feet, wind speed is less than 12 mph and ambient temperature is between 30°F and 90°F: ■

Initial Sound Level Meter Calibration: 93.8 dB(A)

Exterior Ambient Noise Level: 44.1 dB(A)

Accelerating from Standstill Curb (Right) Side		Accelerating from Standstill Street (Left) Side	
Run #	Measured Noise Level dB(A)	Run #	Measured Noise Level dB(A)
1	70.6	1	74.0
2	70.5	2	72.4
3	70.1	3	74.3
4	70.7	4	73.6
5	70.8	5	72.8
6	N/A	6	N/A
7	N/A	7	N/A
8	N/A	8	N/A
9	N/A	9	N/A
10	N/A	10	N/A
Average of two highest actual noise levels = 70.7 dB(A)		Average of two highest actual noise levels = 74.2 dB(A)	

Final Sound Level Meter Calibration Check: 93.7 dB(A)

Comments: None noted

EXTERIOR NOISE TEST DATA FORM
Stationary

Bus Number: 1609	Date: 05-17-16
Personnel: T.G., T.S. & C.S.	
Temperature (°F): 69	Humidity (%): 48
Wind Speed (mph): 5	Wind Direction: Variable
Barometric Pressure (in.Hg): 28.86	
Initial Sound Level Meter Calibration: 93.8 dB(A)	
Exterior Ambient Noise Level: 33.7 dB(A)	

Accessories and Air Conditioning ON

Throttle Position	Engine RPM	Curb (Right) Side dB(A)	Street (Left) Side dB(A)
		Measured	Measured
Low Idle	650	51.8	59.5
High Idle	N/A	N/A	N/A
Wide Open Throttle	4,000	65.4	67.2

Accessories and Air Conditioning OFF

Throttle Position	Engine RPM	Curb (Right) Side dB(A)	Street (Left) Side dB(A)
		Measured	Measured
Low Idle	650	41.4	42.0
High Idle	N/A	N/A	N/A
Wide Open Throttle	4,000	65.2	65.5

Final Sound Level Meter Calibration Check: 93.7 dB(A)

Comments: None noted

7.2 EXTERIOR NOISE TESTS



TEST BUS UNDERGOING
EXTERIOR NOISE TESTS



8. EMISSIONS TEST – DYNAMOMETER-BASED EMISSIONS TEST USING TRANSIT DRIVING CYCLES

8-I. TEST OBJECTIVE

The objective of this test is to provide comparable emissions data on transit buses produced by different manufacturers. This chassis-based emissions test bears no relation to engine certification testing performed for compliance with the Environmental Protection Agency (EPA) regulation. EPA's certification tests are performed using an engine dynamometer operating under the Federal Test Protocol. This emissions test is a measurement of the gaseous engine emissions CO, CO2, NOx, HC and particulates (diesel vehicles) produced by a vehicle operating on a large-roll chassis dynamometer. The test is performed for three differed driving cycles intended to simulate a range of transit operating environments. The cycles consist of Manhattan Cycle, the Orange County Bus driving cycle, and the Urban Dynamometer Driving Cycle (UDDS). The test is performed under laboratory conditions in compliance with EPA 1065 and SAE J2711. The results of this test may not represent actual in-service vehicle emissions but will provide data that can be used by recipients to compare buses tested under different operating conditions.

8-II. TEST DESCRIPTION

This test is performed in the emissions bay of the LTI Vehicle Testing Laboratory. The Laboratory is equipped with a Schenk Pegasus 300 HP, large-roll (72 inch diameter) chassis dynamometer suitable for heavy-vehicle emissions testing. The dynamometer is located in the end test bay and is adjacent to the control room and emissions analysis area. The emissions laboratory provides capability for testing heavy-duty diesel and alternative-fueled buses for a variety of tailpipe emissions including particulate matter, oxides of nitrogen, carbon monoxide, carbon dioxide, and hydrocarbons. It is equipped with a Horiba full-scale CVS dilution tunnel and emissions sampling system. The system includes Horiba Mexa 7400 Series gas analyzers and a Horiba HF47 Particulate Sampling System. Test operation is automated using Horiba CDTCS software. The computer controlled dynamometer is capable of simulating over-the-road operation for a variety of vehicles and driving cycles.

The emissions test will be performed as soon as permissible after the completion of the GVW portion of the structural durability test. The driving cycles are the Manhattan cycle, a low average speed, highly transient urban cycle (Figure 1), the Orange County Bus Cycle which consists of urban and highway driving segments (Figure 2), and the EPA UDDS Cycle (Figure 3). An emissions test will comprise of two runs for the three different driving cycles, and the average value will be reported. Test results reported will include the average

grams per mile value for each of the gaseous emissions for gasoline buses, for all the three driving cycles. In addition, the particulate matter emissions are included for diesel buses, and non-methane hydrocarbon emissions (NMHC) are included for CNG buses. Testing is performed in accordance with EPA CFR49, Part 1065 and SAE J2711 as practically determined by the FTA Emissions Testing Protocol developed by West Virginia University and Penn State University.

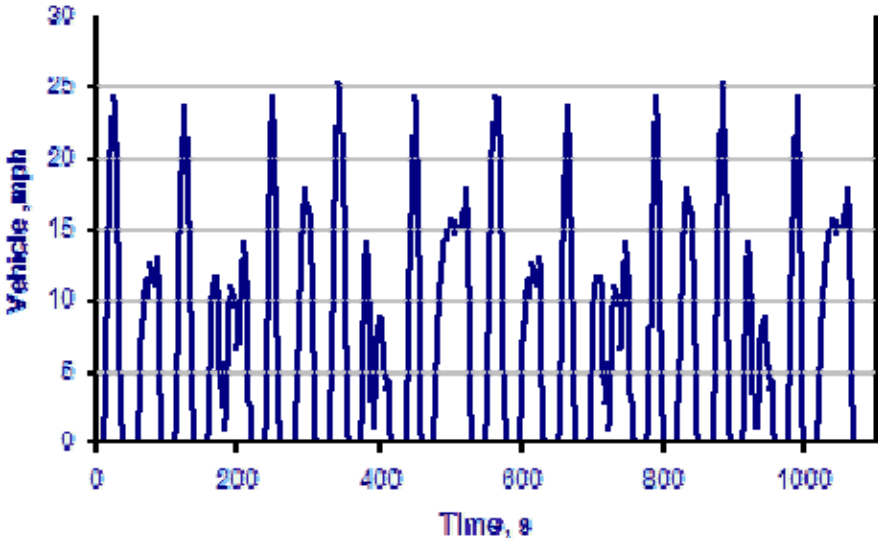


***Figure 1**. Manhattan Driving Cycle (duration 1089 sec, Maximum speed 25.4mph, average speed 6.8mph)*

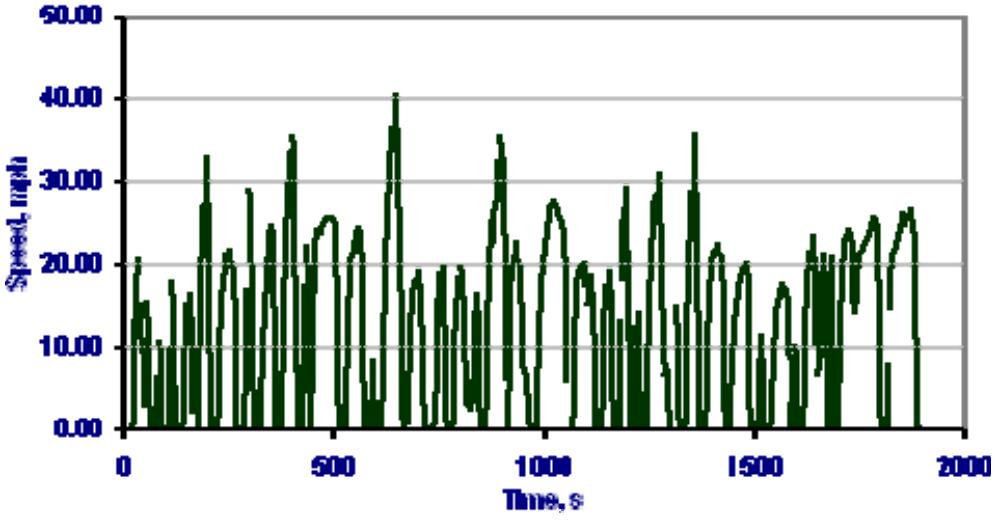


***Figure 2**. Orange County Bus Cycle (Duration 1909 Sec, Maximum Speed 41mph, Average Speed 12mph)*

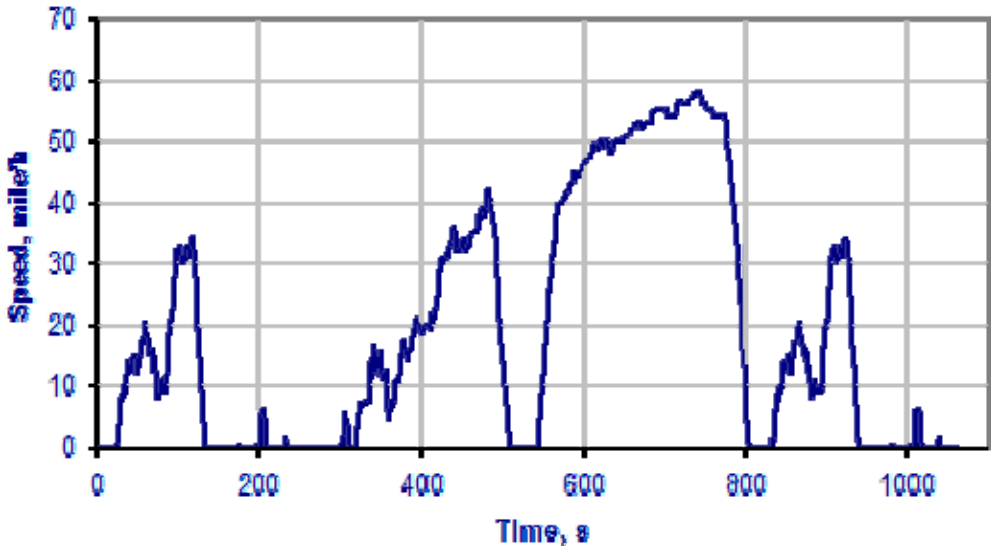


***Figure 3**. HD-UDDS Cycle (duration 1060seconds, Maximum Speed 58mph, Average Speed 18.86mph)*

8-III. TEST ARTICLE

The test article is a Starcraft Bus a Division of Forest River, Inc., model Starlite Transit bus equipped with a gasoline fueled Ford Motor Co. 3.7 L engine. The bus was tested on August 18, 2016.

8-IV. TEST EQUIPMENT

Testing is performed in the LTI Vehicle Testing Laboratory emissions testing bay. The test bay is equipped with a Schenk Pegasus 72-inch, large-roll chassis dynamometer. The dynamometer is electronically controlled to account for vehicle road-load characteristics and for simulating the inertia characteristics of the vehicle. Power to the roller is supplied and absorbed through an electronically controlled 3-phase ac motor. Absorbed power is dumped back onto the electrical grid.

Vehicle exhaust is collected by a Horiba CVS, full-flow dilution tunnel. The system has separate tunnels for diesel and gasoline/natural gas fueled vehicles. In the case of diesel vehicles, particulate emissions are measured gravimetrically using 47mm Teflon filters. These filters are housed in a Horiba HF47 particulate sampler, per EPA 1065 test procedures... Heated gaseous emissions of hydrocarbons and NOx are sampled by Horiba heated oven analyzers. Gaseous

emissions for CO, CO2 and cold NOx are measured using a Horiba Mexa 7400 series gas analyzer. System operation, including the operation of the chassis dynamometer, and all calculations are controlled by a Dell workstation running Horiba CDCTS test control software. Particulate Filters are weighed in a glove box using a Sartorius microbalance accurate to 1 microgram.

8-V. TEST PREPARATION AND PROCEDURES

All vehicles are prepared for emissions testing in accordance with the Fuel Economy Pre-Test Maintenance Form. (In the event that fuel economy test was performed immediately prior to emissions testing this step does not have to be repeated) This is done to ensure that the bus is tested in optimum operating condition. The manufacturer-specified preventive maintenance shall be performed before this test. The ABS system and when applicable, the regenerative braking system are disabled for operation on the chassis dynamometer. Any manufacturer-recommended changes to the pre-test maintenance procedure must be noted on the revision sheet. The Fuel Economy Pre-Test Inspection Form will also be completed before performing. Both the Fuel Economy Pre-Test Maintenance Form and the Fuel Economy Pre-Test Inspection Form are found on the following pages.

Prior to performing the emissions test, each bus is evaluated to determine its road-load characteristics using coast-down techniques in accordance with SAE J1263. This data is used to program the chassis dynamometer to accurately simulate over-the-road operation of the bus.

Warm-up consists of driving the bus for 20 minutes at approximately 40 mph on the chassis dynamometer. The test driver follows the prescribed driving cycle watching the speed trace and instructions on the Horiba Drivers-Aid monitor which is placed in front of the windshield. The CDCTS computer monitors driver performance and reports any errors that could potentially invalidate the test.

All buses are tested at half seated load weight. The base line emissions data are obtained at the following conditions:

1. Air conditioning off
2. Evaporator fan or ventilation fan on
3. One Half Seated load weight
4. Appropriate test fuel with energy content (BTU/LB) noted in CDTCS software
5. Exterior and interior lights on
6. Heater Pump Motor off
7. Defroster off
8. Windows and Doors closed

The test tanks or the bus fuel tank(s) will be filled prior to the fuel economy test with the appropriate grade of test fuel.

8-VI DISCUSSION

The following Table 1 provides the emissions testing results on a grams per mile basis for each of the exhaust constituents measured and for each driving cycle performed.

TABLE 1 Emissions Test Results

Test Completed at Half SLW: 9,100 LBS.			
Driving Cycle	**Manhattan**	**Orange County Bus**	**UDDS**
CO_2, gm/mi	1,230	875	821
CO, gm/mi	1.2	0.15	0.57
THC, gm/mi	0.18	0.04	0.04
NMHC, gm/mi	0.13	0.02	0.03
NO_x, gm/mi	0.03	0.01	0.01
Particulates. gm/mi	NA	NA	NA
Fuel consumption mpg	7.00	9.86	10.50

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
SONNY MERRYMAN, INC
5120 WARDS RD
EVINGTON, VA 24550-2224

BUSINESS REGISTRATION ACCOUNT NUMBER: **2340-1838**

This certificate is issued on: **02/22/2017**

This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code

The person or organization identified on this certificate is registered to conduct business in the State of West Virginia at the location above.

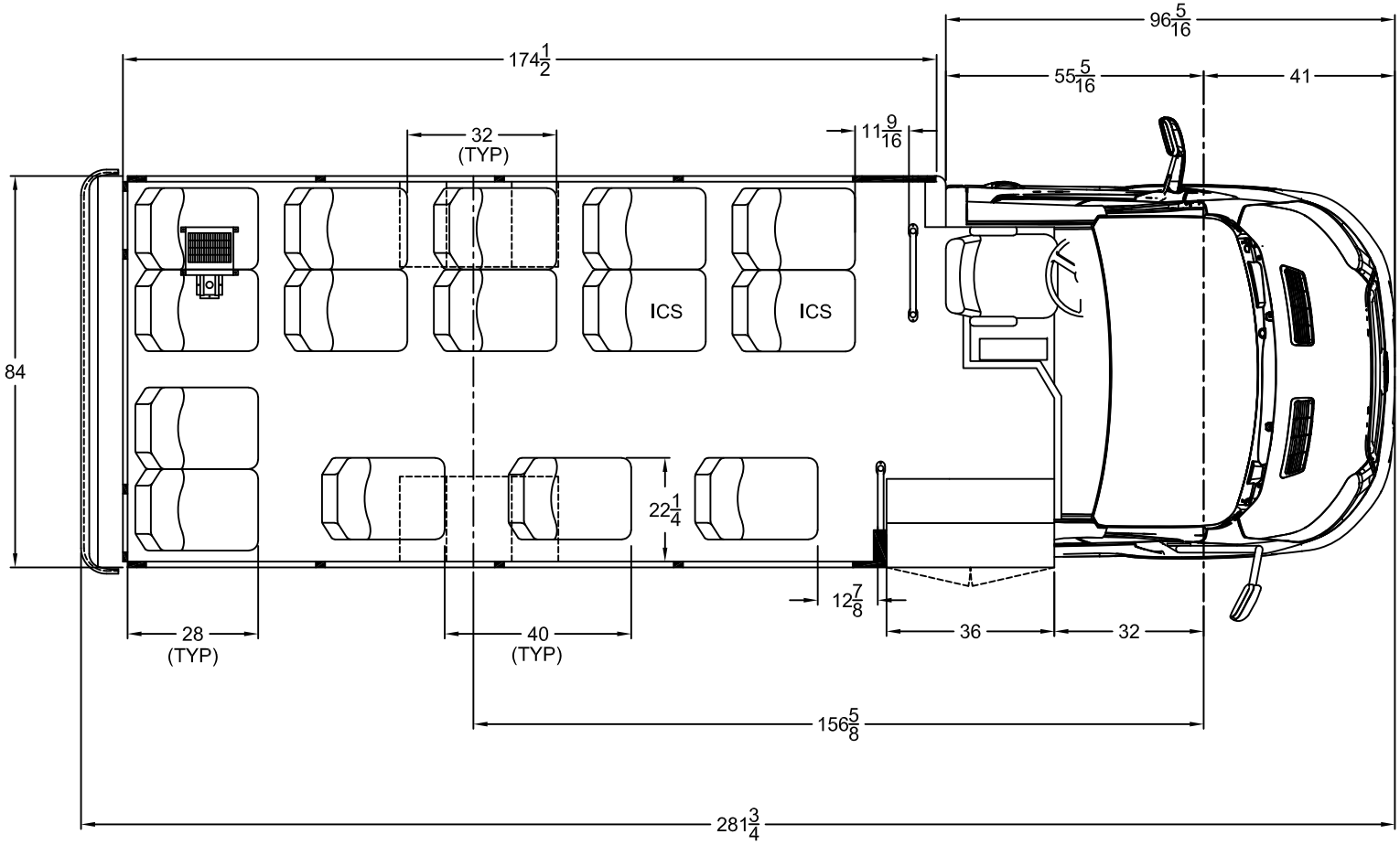
This certificate is not transferrable and must be displayed at the location for which issued

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them. CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

atL006 v.4
L1600165056



Floor Plan for
Class A

NOTE: SHOWN WITH MID HI FREEDMAN SEATS
CANDIDATE TRANSIT 10,360 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 EQUIPMENT MAY BE SHOWN.
THE SALES ORDER PLACED DICTATES ACTUAL OPTION CONTENT.

DEALER APPROVAL

☐ APPROVED

CUSTOMER SIGNATURE

SCALE
IN INCHES

0 12 24 36 48

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

TOLERANCE UNLESS OTHERWISE SPECIFIED

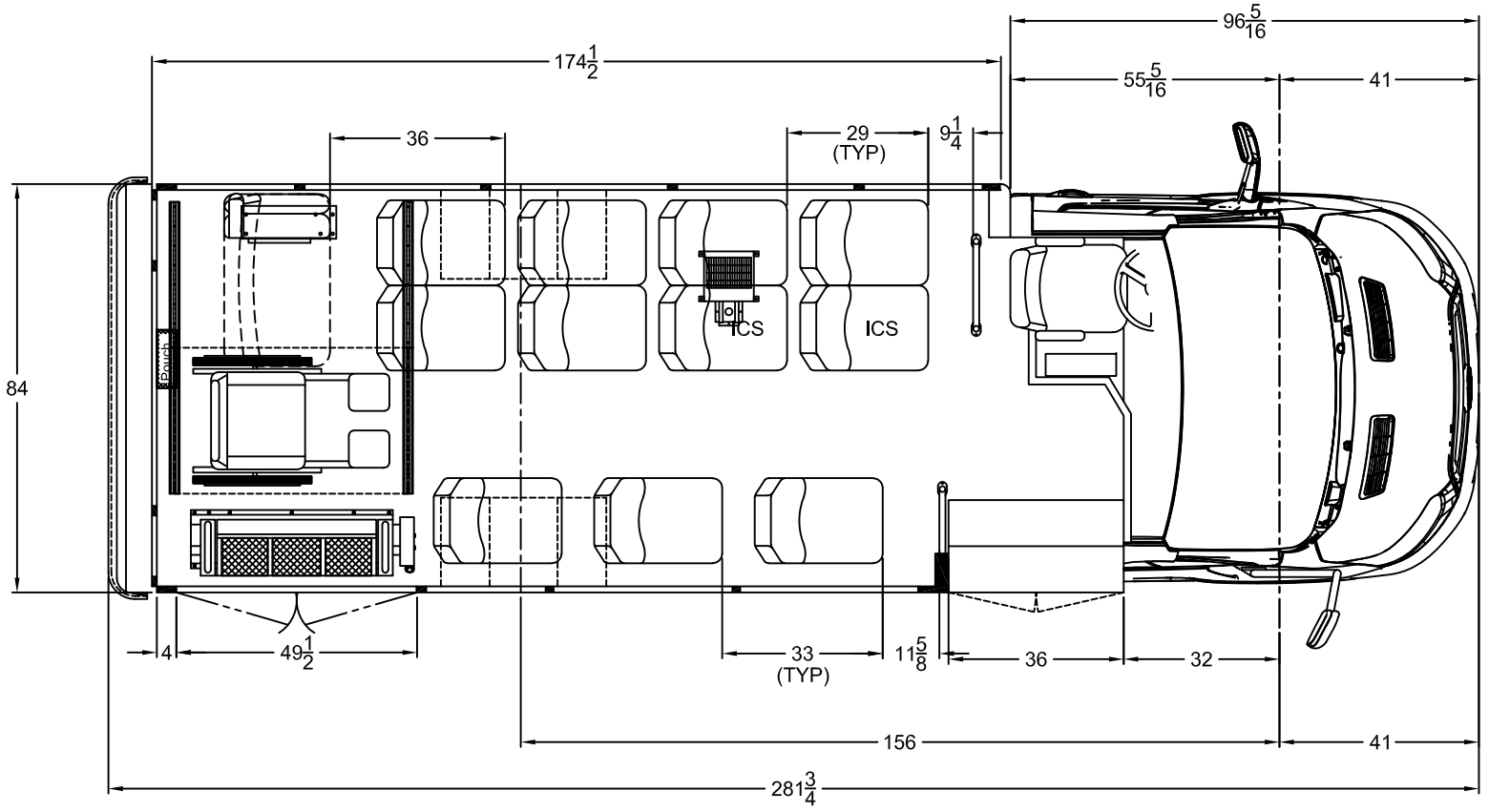
WOOD	OTHER
± 1/8"	± 1/16"
± 1°	± 1/2°

STARTRANS a division of Forest River, Inc.

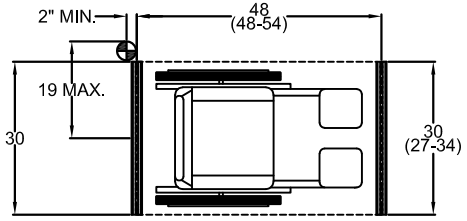
DATE: 06/07/16
NAME: TAS

TITLE: 15 PASS 156 WB MODEL 22 CANDIDATE TRANSIT

DWG. No. 15 PASS 156 174-3 USA



Floor Plan for
Classes
B,E,H,K,N



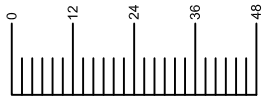
NOTE: SHOWN WITH MID HI FREEDMAN SEATS
CANDIDATE TRANSIT 10,360 GVWR
THIS FLOOR PLAN IS FOR ILLUSTRATION PURPOSES ONLY.
A WEIGHT ANALYSIS HAS NOT YET BEEN PERFORMED.
FINAL APPROVAL WITH A WEIGHT ANALYSIS IS REQUIRED UPON RECEIPT OF A COMPLETED ORDER WITH ALL OPTIONS SHOWN.
OPTIONAL EQUIPMENT MAY BE SHOWN.
THE SALES ORDER PLACED DICTATES ACTUAL OPTION CONTENT.

DEALER APPROVAL

☐ APPROVED

CUSTOMER SIGNATURE

SCALE
IN INCHES



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

TOLERANCE UNLESS OTHERWISE SPECIFIED

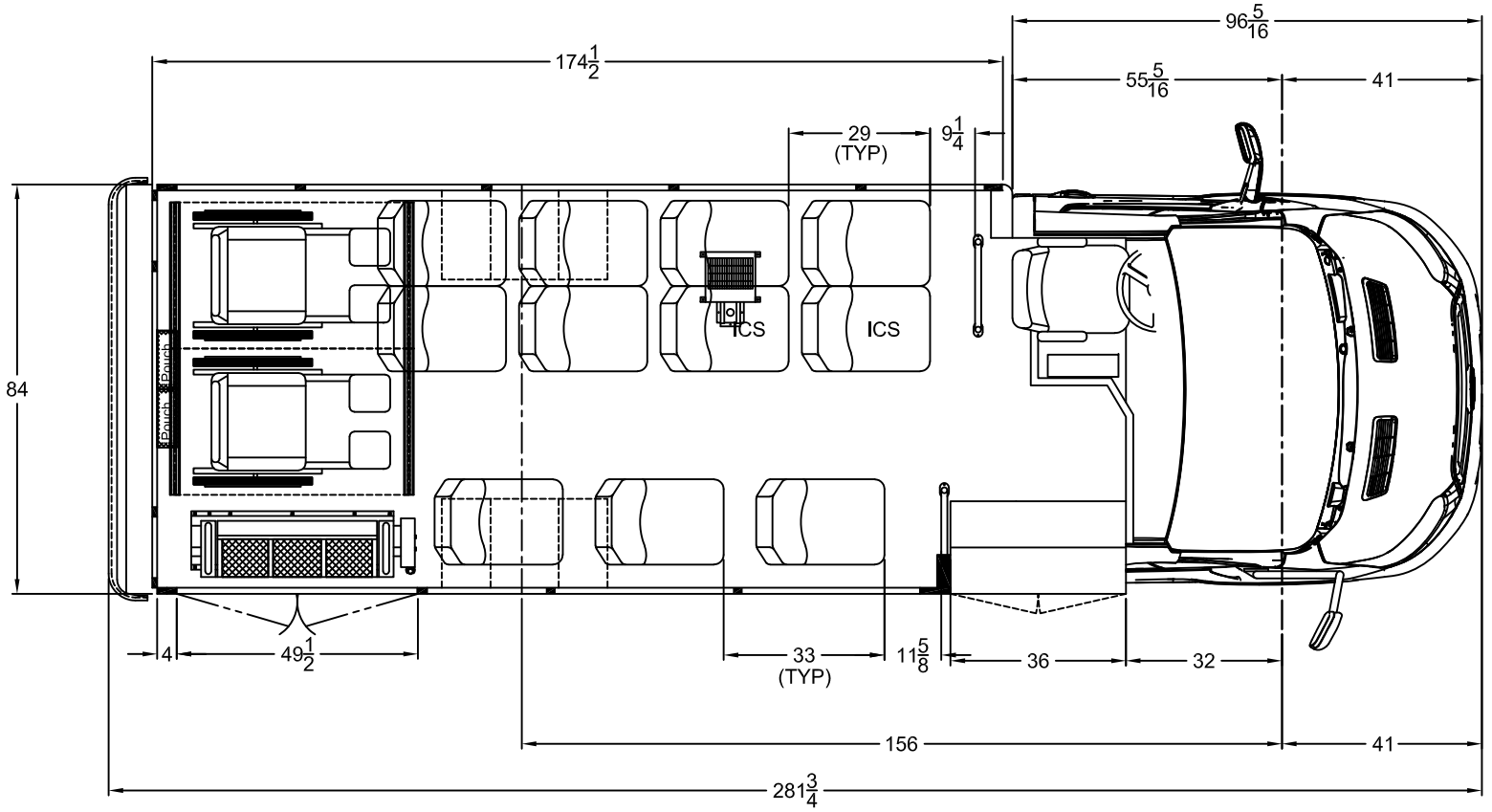
WOOD	OTHER
± 1/8"	± 1/16"
± 1°	± 1/2°

STARTRANS a division of Forest River, Inc.

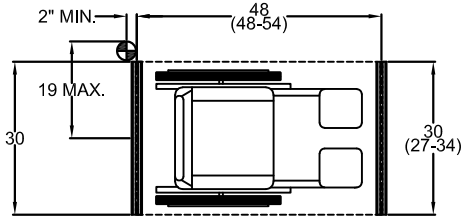
DATE: 11/12/18 TITLE: 11 2 WC 156 WB MODEL 22 TRANSIT

NAME: TAS

DWG. No. 11 2 WC 1 DBL FOLD 156 WB 174 BDY-2 USA



Floor Plan for
Classes
C,F,I,L,O



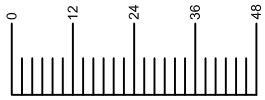
NOTE: SHOWN WITH MID HI FREEDMAN SEATS
CANDIDATE TRANSIT 10,360 GVWR
THIS FLOOR PLAN IS FOR ILLUSTRATION PURPOSES ONLY.
A WEIGHT ANALYSIS HAS NOT YET BEEN PERFORMED.
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OPTIONAL EQUIPMENT MAY BE SHOWN.
THE SALES ORDER PLACED DICTATES ACTUAL OPTION CONTENT.

DEALER APPROVAL

☐ APPROVED

CUSTOMER SIGNATURE

SCALE
IN INCHES



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

TOLERANCE UNLESS OTHERWISE SPECIFIED

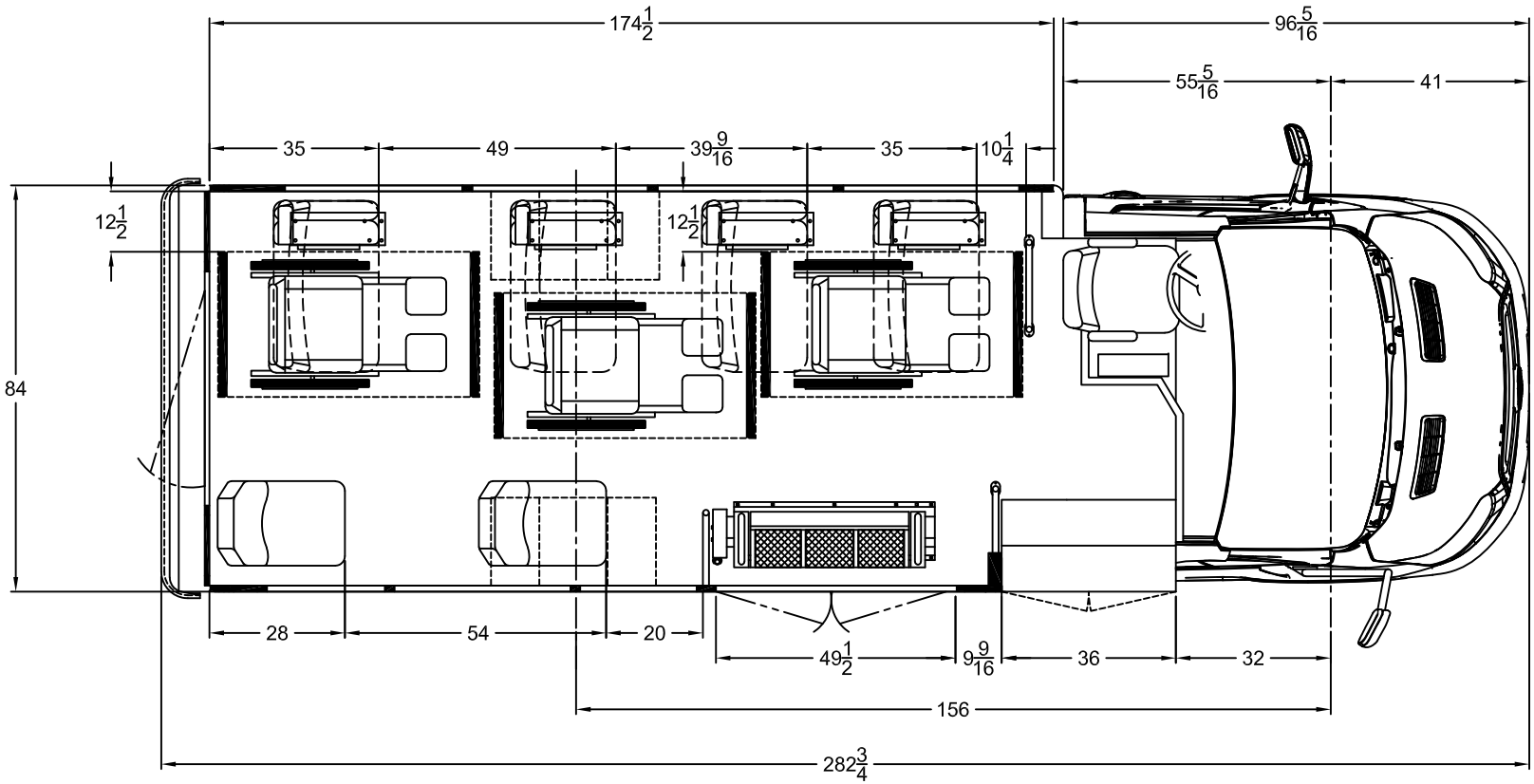
WOOD	OTHER
± 1/8"	± 1/16"
± 1°	± 1/2°

STARTRANS a division of Forest River, Inc.

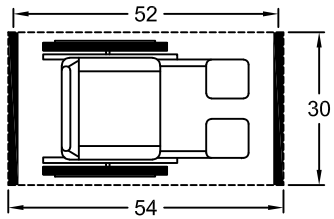
DATE: 11/12/18 TITLE: 11 2 WC 156 WB MODEL 22 TRANSIT

NAME: TAS

DWG. No. 11 2 WC 156 WB 174 BDY USA



Floor Plan for
Classes
D,G,J,M & P



NOTE: SHOWN WITH MID HI FREEDMAN SEATS
CANDIDATE TRANSIT 10,360 GVWR
THIS FLOOR PLAN IS FOR ILLUSTRATION PURPOSES ONLY.
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FINAL APPROVAL WITH A WEIGHT ANALYSIS IS REQUIRED UPON RECEIPT OF A COMPLETED ORDER WITH ALL OPTIONS SHOWN.
OPTIONAL EQUIPMENT MAY BE SHOWN.
THE SALES ORDER PLACED DICTATES ACTUAL OPTION CONTENT.

DEALER APPROVAL

☐ APPROVED

CUSTOMER SIGNATURE

SCALE
IN INCHES

0 12 24 36 48

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

TOLERANCE UNLESS OTHERWISE SPECIFIED

WOOD	OTHER
± 1/8"	± 1/16"
± 1°	± 1/2°

STARTRANS a division of Forest River, Inc.

DATE: 07/21/20 TITLE: 2 3 WC 156 WB TRANSIT CANDIDATE TRANSIT

NAME: TAS

DWG. No. 2 3 WC 4 DB FOLDS 156 174 USA

WEIGHT ANALYSIS

7/21/2020 15 PASS 156 174-3 EST USA

	INPUT AREAS=						FUEL LOAD ADJ. DATA (F.L.A.)				
	VEHICLE DESCRIPTION:		CHASSIS	UNIT #	MODEL:	FUEL TYPE:	FUEL CAP.	FUEL WGT PER GAL.			
	15 PASS 156 174-3 EST USA					GAS	25	6.1			
	WHEELBASE	PER IN. VALUE CALC.		AXLE WEIGHTS			FUEL AMT.	WGT OF FUEL	FUEL ADJ. AMT.		
	156	0.64		LEFT FRONT	RIGHT FRONT		0.25	152.5	-38.13		
AXLE CAPACITIES			3163	1723	1440		FUEL TANK CENTER		DEALER		
FRONT	REAR	TOTAL		LEFT REAR	RIGHT REAR		78				
4130	7275	10360	4023	2002	2021						
LEFT (ROADSIDE)						**RIGHT (CURBSIDE)**					
	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	
DRIVER	48	215	30.77%	148.85	66.15	95.5	-32	61.22%	-12.41	-19.59	MID HI SINGLE
MID HI DBL	87.5	-55	56.09%	-24.15	-30.85	135.5	-32	86.86%	-4.21	-27.79	MID HI SINGLE
MID HI DBL	119.5	-55	76.60%	-12.87	-42.13	175.5	-32	112.50%	4.00	-36.00	MID HI SINGLE
MID HI DBL	151.5	-55	97.12%	-1.59	-53.41	215.5	-32	138.14%	12.21	-44.21	MID HI SINGLE
MID HI DBL	183.5	-55	117.63%	9.70	-64.70			0.00%	0.00	0.00	
MID HI DBL	215.5	-55	138.14%	20.98	-75.98	96	182	61.54%	70.00	112.00	MID HI SINGLE
			0.00%	0.00	0.00	136	182	87.18%	23.33	158.67	MID HI SINGLE
MID HI DBL	88	355	56.41%	154.74	200.26	176	182	112.82%	-23.33	205.33	MID HI SINGLE
MID HI DBL	120	355	76.92%	81.92	273.08	216	355	138.46%	-136.54	491.54	MID HI DBL
MID HI DBL	152	355	97.44%	9.10	345.90			0.00%	0.00	0.00	
MID HI DBL	184	355	117.95%	-63.72	418.72			0.00%	0.00	0.00	
MID HI DBL	216	355	138.46%	-136.54	491.54			0.00%	0.00	0.00	
			0.00%	0.00	0.00	156	0	100.00%	0.00	0.00	MOR RYDE
MOR RYDE	156	0	100.00%	0.00	0.00	140	32	89.74%	3.28	28.72	5/8" MARINE
5/8" MARINE	140	32	89.74%	3.28	28.72			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
	TOTAL PASSENGER LOAD			189.71	1557.29				-63.67	868.67	2552.00
	AXLE WEIGHTS			1723.00	2002.00				1440.00	2021.00	7186.00

				FRONT	REAR	LEFT/RIGHT TOTALS	LEFT/RIGHT %'S				
			LEFT	1941.30	3587.89	5529.19	0.561				
			RIGHT	1404.93	2918.26	4323.19	0.439				
			FRT / REAR TOTALS	3346.23	6506.15	9852.38					
			AXLE CAPACITIES	4130	7275	10360					
			AVAILABLE CAPACITIES	**783.77**	**768.85**	**507.63**					

94376B
MID HI, BIKE RACK

Front Curbside
Maximum Capacity 2065
1404.93

Rear Curbside
Maximum Capacity 3637.5
2918.26

Combined Front
3346.23
4130 Maximum Capacity

Combined Rear
6506.15
7275 Maximum Capacity

1941.30
Maximum Capacity 2065
Front Roadside

3587.89
Maximum Capacity 3637.5
Rear Roadside

WEIGHT ANALYSIS

7/21/2020 11 1 WC 1 DBL FOLD 156 WB 174 BDY EST USA

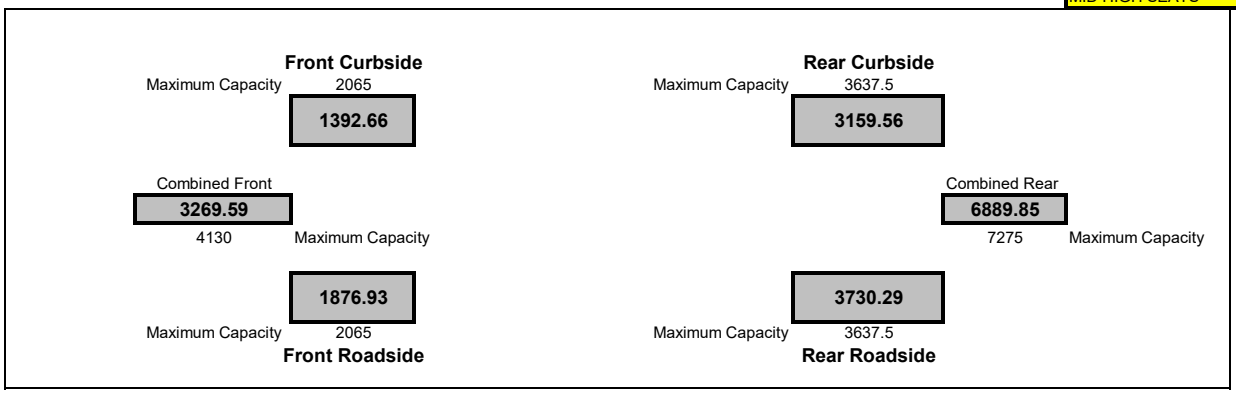
	INPUT AREAS=						FUEL LOAD ADJ. DATA (F.L.A.)				
	VEHICLE DESCRIPTION:		CHASSIS	UNIT #	MODEL:	FUEL TYPE:	FUEL CAP.	FUEL WGT PER GAL.			
	11 1 WC 1 DBL FOLD 156 WB 174 BDY		TRANSIT		TRANSIT	GAS	25	6.1			
	WHEELBASE	PER IN. VALUE CALC.		AXLE WEIGHTS			FUEL AMT.	WGT OF FUEL	FUEL ADJ. AMT.		
	156	0.64		LEFT FRONT	RIGHT FRONT		0.13	152.5	-19.06		
AXLE CAPACITIES			2904	1598	1306		FUEL TANK CENTER		DEALER		
FRONT	REAR	TOTAL		LEFT REAR	RIGHT REAR		78				
4130	7275	10360	4650	2109	2541						

LEFT (ROADSIDE)						RIGHT (CURBSIDE)					
	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	
DRIVER	44	150	28.21%	107.69	42.31	94	-32	60.26%	-12.72	-19.28	MID HI SINGLE
MID HI DB	122	-55	78.21%	-11.99	-43.01	127	-32	81.41%	-5.95	-26.05	MID HI SINGLE
MID HI DB	162	-55	103.85%	2.12	-57.12	160	-32	102.56%	0.82	-32.82	MID HI SINGLE
SGL FLIP	227	-32	145.51%	14.56	-46.56	227	-32	145.51%	14.56	-46.56	SINGLE FLIP
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00	94	182	60.26%	72.33	109.67	MID HI SINGLE
MID HI DB	85	355	54.49%	161.57	193.43	127	182	81.41%	33.83	148.17	MID HI SINGLE
MID HI DB	114	355	73.08%	95.58	259.42	160	182	102.56%	-4.67	186.67	MID HI SINGLE
MID HI DB	143	355	91.67%	29.58	325.42	194	200	124.36%	-48.72	248.72	W/C
MID HI DB	172	355	110.26%	-36.41	391.41			0.00%	0.00	0.00	
DBL FOLD	205	385	131.41%	-120.93	505.93	156	28	100.00%	0.00	28.00	5/8 MARINE
			0.00%	0.00	0.00	156	0	100.00%	0.00	0.00	MORYDE
5/8 MARINE	156	28	100.00%	0.00	28.00	235	-7.5	150.64%	3.80	-11.30	ROMEO RIM BUMOER
MORYDE	156	0	100.00%	0.00	0.00			0.00%	0.00	0.00	
ROMEO RIM BUMPER	235	-7.5	150.64%	3.80	-11.30			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
	TOTAL PASSENGER LOAD			245.57	1587.93				53.30	585.20	2472.00
	AXLE WEIGHTS			1598.00	2109.00				1306.00	2541.00	7554.00

				FRONT	REAR	LEFT/RIGHT TOTALS	LEFT/RIGHT %'S				
			LEFT	1876.93	3730.29	5607.22	0.552				
			RIGHT	1392.66	3159.56	4552.22	0.448				
		FRT / REAR TOTALS		3269.59	6889.85	10159.44					
		AXLE CAPACITIES		4130	7275	10360					
		AVAILABLE CAPACITIES		**860.41**	**385.15**	**200.56**					

47685B

MID HIGH SEATS



WEIGHT ANALYSIS

7/21/2020 11 2 WC 156 WB 174 BDY EST USA

	INPUT AREAS=						FUEL LOAD ADJ. DATA (F.L.A.)				
	VEHICLE DESCRIPTION:		CHASSIS	UNIT #	MODEL:	FUEL TYPE:	FUEL CAP.	FUEL WGT PER GAL.			
	11 2 WC 156 WB 174 BDY EST USA		TRANSIT		TRANSIT	GAS	25	6.1			
	WHEELBASE	PER IN. VALUE CALC.		AXLE WEIGHTS			FUEL AMT.	WGT OF FUEL	FUEL ADJ. AMT.		
	156	0.64		LEFT FRONT	RIGHT FRONT		0.13	152.5	-19.06		
AXLE CAPACITIES			2904	1598	1306		FUEL TANK CENTER		DEALER		
FRONT	REAR	TOTAL		LEFT REAR	RIGHT REAR		78				
4130	7275	10360	4650	2109	2541						

LEFT (ROADSIDE)						RIGHT (CURBSIDE)					
	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	
DRIVER	44	150	28.21%	107.69	42.31	94	-32	60.26%	-12.72	-19.28	MID HI SINGLE
MID HI DB	122	-55	78.21%	-11.99	-43.01	127	-32	81.41%	-5.95	-26.05	MID HI SINGLE
MID HI DB	162	-55	103.85%	2.12	-57.12	160	-32	102.56%	0.82	-32.82	MID HI SINGLE
SGL FLIP	227	-32	145.51%	14.56	-46.56	227	-32	145.51%	14.56	-46.56	SINGLE FLIP
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00	94	182	60.26%	72.33	109.67	MID HI SINGLE
MID HI DB	85	355	54.49%	161.57	193.43	127	182	81.41%	33.83	148.17	MID HI SINGLE
MID HI DB	114	355	73.08%	95.58	259.42	160	182	102.56%	-4.67	186.67	MID HI SINGLE
MID HI DB	143	355	91.67%	29.58	325.42	194	200	124.36%	-48.72	248.72	W/C
MID HI DB	172	355	110.26%	-36.41	391.41			0.00%	0.00	0.00	
W/C	194	200	124.36%	-48.72	248.72	156	28	100.00%	0.00	28.00	5/8 MARINE
			0.00%	0.00	0.00	156	0	100.00%	0.00	0.00	MORYDE
5/8 MARINE	156	28	100.00%	0.00	28.00	235	-7.5	150.64%	3.80	-11.30	ROMEO RIM BUMOER
MORYDE	156	0	100.00%	0.00	0.00			0.00%	0.00	0.00	
ROMEO RIM BUMPER	235	-7.5	150.64%	3.80	-11.30			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
	TOTAL PASSENGER LOAD			317.79	1330.71				53.30	585.20	2287.00
	AXLE WEIGHTS			1598.00	2109.00				1306.00	2541.00	7554.00

			FRONT	REAR	LEFT/RIGHT TOTALS	LEFT/RIGHT %'S
		LEFT	1949.14	3473.07	5422.22	0.544
		RIGHT	1392.66	3159.56	4552.22	0.456
		FRT / REAR TOTALS	3341.80	6632.64	9974.44	
		AXLE CAPACITIES	4130	7275	10360	
		AVAILABLE CAPACITIES	**788.20**	**642.36**	**385.56**	

47685B
MID HIGH SEATS

Front Curbside
Maximum Capacity 2065
1392.66

Rear Curbside
Maximum Capacity 3637.5
3159.56

Combined Front
3341.80
4130 Maximum Capacity

Combined Rear
6632.64
7275 Maximum Capacity

1949.14
Maximum Capacity 2065
Front Roadside

3473.07
Maximum Capacity 3637.5
Rear Roadside

WEIGHT ANALYSIS

7/21/2020 2 3 WC 4 DB FOLDS 156 174 EST USA

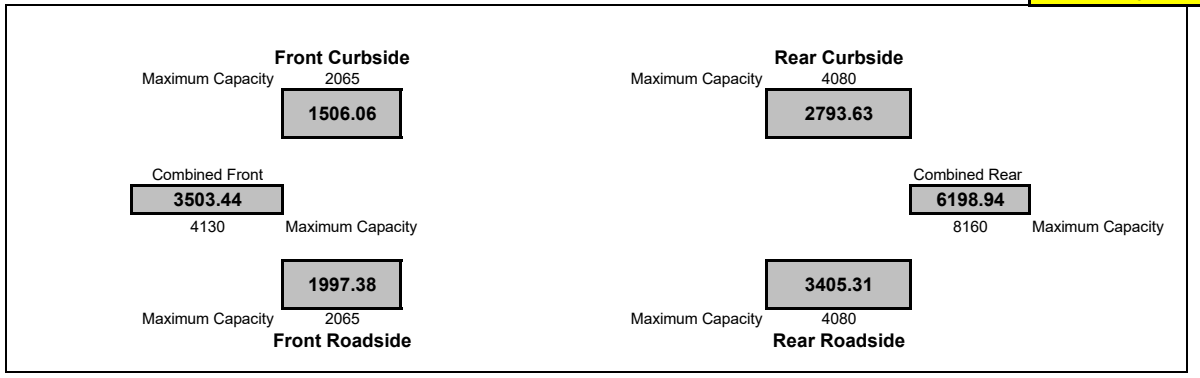
	INPUT AREAS=						FUEL LOAD ADJ. DATA (F.L.A.)				
	VEHICLE DESCRIPTION:		CHASSIS	UNIT #	MODEL:	FUEL TYPE:	FUEL CAP.	FUEL WGT PER GAL.			
	2 3 WC 4 DB FOLDS 156 174 EST US		TRANSIT			GAS	25	6.1			
	WHEELBASE	PER IN. VALUE CALC.		AXLE WEIGHTS			FUEL AMT.	WGT OF FUEL	FUEL ADJ. AMT.		
	156	0.64		LEFT FRONT	RIGHT FRONT		0.25	152.5	-38.13		
AXLE CAPACITIES			3196	1671	1525		FUEL TANK CENTER		DEALER		
FRONT	REAR	TOTAL		LEFT REAR	RIGHT REAR		78				
4130	7275	10360	4612	2117	2495						

LEFT (ROADSIDE)						RIGHT (CURBSIDE)					
	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	DISTANCE (IN.)	WEIGHT (LBS.)	% REAR AXLE	FRONT	REAR	
DRIVER	44	150	28.21%	107.69	42.31	151	-32	96.79%	-1.03	-30.97	MID HI SINGLE
MID HI DBL	184	-55	117.95%	9.87	-64.87	184	-32	117.95%	5.74	-37.74	MID HI SINGLE
MID HI DBL	216	-55	138.46%	21.15	-76.15	216	-55	138.46%	21.15	-76.15	MID HI DBL
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00	162	182	103.85%	-7.00	189.00	MID HI SINGLE
DBL FOLD	81	385	51.92%	185.10	199.90	216	182	138.46%	-70.00	252.00	MID HI SINGLE
DBL FOLD	117	385	75.00%	96.25	288.75			0.00%	0.00	0.00	DB FOLD
DBL FOLD	158	385	101.28%	-4.94	389.94	142	40	91.03%	3.59	36.41	GAL BELLY METAL
DBL FOLD	205	385	131.41%	-120.93	505.93			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
GAL BELLY METAL	142	40	91.03%	3.59	36.41			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
Morryde	156	-62.5	100.00%	0.00	-62.50	156	-62.5	100.00%	0.00	-62.50	Morryde
5/8" PLYWOOD	140	0	89.74%	0.00	0.00	140	0	89.74%	0.00	0.00	5/8" PLYWOOD
3/4" PLYWOOD	140	0	89.74%	0.00	0.00	140	0	89.74%	0.00	0.00	3/4" PLYWOOD
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
			0.00%	0.00	0.00			0.00%	0.00	0.00	
TOTAL PASSENGER LOAD				297.79	1259.71				-47.54	270.04	1780.00
AXLE WEIGHTS				1671.00	2117.00				1525.00	2495.00	7808.00

	FRONT	REAR	LEFT/RIGHT TOTALS	LEFT/RIGHT %'S
LEFT	1997.38	3405.31	5402.69	0.557
RIGHT	1506.06	2793.63	4299.69	0.443
FRT / REAR TOTALS	3503.44	6198.94	9702.38	
AXLE CAPACITIES	4130	7275	10360	
AVAILABLE CAPACITIES	**626.56**	**1076.06**	**657.63**	

AS BUILT 3647CT

MID HI DBL MORRYDE 5/8 MARINE



Sonny Merryman INC.

July 22 , 2020

State of West Virginia
Attn; Linda B Harper
2019 Washington ST E
Charleston, WV. 25305

Ms. Harper:

Sonny Merryman, Inc. is pleased to offer the following proposal in response to CRFQ 0805 PTR2000000003 156" WB DRW Narrow Body Cutaway Buses. We are offering the Startrans Candidate II built on a Ford Transit chassis. The vehicle offered meets the specifications outlined except for the following:

1) We are providing an upgrade to the chassis GVWR to 11,000 GVWR
2) On Classes C,F,I & L a double fold-a-way seat is not available due to space limitations in the securement area.

Sonny Merryman Inc. agrees to be bound by the proposal without modifications, unless mutually agreed to upon further negotiations between State of West Virginia. This proposal is valid for (150) calendar days. We acknowledge and meet all warranty requirements outlined in this bid.

At time of this bid submittal Startrans is awaiting a determination from the FTA in regard to the required Altoona testing (Partial or Full) that will be required for the new engine in the Ford Transit Cutaways. Regardless of the testing required it will be completed prior to delivery.

Startrans is a well-established supplier in the industry manufacturing quality American made products. Sonny Merryman, Inc. a Virginia incorporated business and has provided quality sales and service to institutions and Governmental agencies since 1967. We look forward to a successful partnership on this procurement.

Principal point of contact:
C. Chad Seals
Commercial Sales
P.O. Box 495
Rustburg, VA. 24588
1-800-533-1006 Ext. 8606
(F) 1-434-821-4456
chad@sonnymerryman.com

Thank you for this opportunity and please call if you have questions.

Sincerely,

C. Chad Seals
Sonny Merryman, Inc.

July 22 , 2020

State of West Virginia
Attn; Linda B Harper
2019 Washington ST E
Charleston, WV. 25305

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chad@sonnymerryman.com

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Sincerely,

C. Chad Seals
Sonny Merryman, Inc.

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Request for Quotation
36 — Vehicles

Proc Folder: 735735
Doc Description: 156" WB DRW Narrow Body Cutaway
Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2020-06-30	2020-07-17 13:30:00	CRFQ 0805 PTR2000000003	1

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Name, Address and Telephone Number:

Sonny Merryman Inc.
5120 Wards Road
Evington, VA. 24550
1-800-533-1006

FOR INFORMATION CONTACT THE BUYER

Linda B Harper
(304) 558-0468
linda.b.harper@wv.gov

Signature X **FEIN #** 540806-176 **DATE** 07/22/2020

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

The West Virginia Purchasing Division for the Agency, The West Virginia Division of Public Transit is soliciting bids from qualified vendors to establish an "Open-End" contract for the purchase of 156" Wheelbase Dual Rear Wheel (DRW) Narrow Body Cutaway vehicles per the Specifications, Terms & Conditions and bid requirements as attached

INVOICE TO	SHIP TO
ACCOUNTS PAYABLE PUBLIC TRANSIT DIVISION OF BLDG 5 RM 650 1900 KANAWHA BLVD E CHARLESTON WV25305-0432 US	GENERAL MANAGER PUBLIC TRANSIT DIVISION OF KANAWHA VALLEY REGIONAL TRANSPORTATION AUTHORITY 1550 FOURTH AVE CHARLESTON WV 25324 US

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	156" WB DRW Narrow Body Cutaway	0.00000	EA		

Comm Code	Manufacturer	Specification	Model #
25101502	Startrans		Candidate II

Extended Description :
156" WB DRW Narrow Body Cutaway

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Question deadline 4:00 p.m.	2020-07-07

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

INSTRUCTIONS TO VENDORS SUBMITTING BIDS

1. REVIEW DOCUMENTS THOROUGHLY: The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.

2. MANDATORY TERMS: The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.

3. PREBID MEETING: The item identified below shall apply to this Solicitation.

☑ A pre-bid meeting will not be held prior to bid opening

☐ A **MANDATORY PRE-BID** meeting will be held at the following place and time:

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing.

Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting

are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

4. VENDOR QUESTION DEADLINE: Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below in order to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are nonbinding.

Submitted e-mails should have solicitation number in the subject line.

Question Submission Deadline: Tuesday, July 7, 2020, 4:00 p.m.

Submit Questions to: Linda Harper
2019 Washington Street, East
Charleston, WV 25305
Fax: (304) 558-4115 (Vendors should not use this fax number for bid submission)
Email: Linda.B.Harper@wv.gov

5. VERBAL COMMUNICATION: Any verbal communication between the Vendor and any State personnel is not binding, including verbal communication at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.

6. BID SUBMISSION: All bids must be submitted electronically through wvOASIS or signed and delivered by the Vendor to the Purchasing Division at the address listed below on or before the date and time of the bid opening. Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason. The Purchasing Division will not accept bids, modification of bids, or addendum acknowledgment forms via e-mail. Acceptable delivery methods include electronic submission via wvOASIS, hand delivery, delivery by courier, or facsimile.

The bid delivery address is:
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

A bid that is not submitted electronically through wvOASIS should contain the information listed below on the face of the envelope or the bid may be rejected by the Purchasing Division.:

SEALED BID: 156" WB DRW Narrow Body Cutaway
BUYER: Linda Harper
SOLICITATION NO.: CRFQ PTR2000000003
BID OPENING DATE: Friday, July 17, 2020
BID OPENING TIME: 1:30 p.m.
FAX NUMBER: 304-558-3970

The Purchasing Division may prohibit the submission of bids electronically through wvOASIS at its sole discretion. Such a prohibition will be contained and communicated in the wvOASIS system resulting in the Vendor's inability to submit bids through wvOASIS. Submission of a response to an Expression or Interest or Request for Proposal is not permitted in wvOASIS.

For Request For Proposal ("RFP") Responses Only: In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal plus N/A convenience copies of each to the Purchasing Division at the address shown above. Additionally, the Vendor should identify the bid type as either a technical or cost proposal on the face of each bid envelope submitted in response to a request for proposal as follows:

BID TYPE: (This only applies to CRFP)
☐ Technical
☐ Cost

7. BID OPENING: Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when confirmation of delivery is provided by wvOASIS (in the case of electronic submission) or when the bid is time stamped by the official Purchasing Division time clock (in the case of hand delivery).

Bid Opening Date and Time: Friday, July 17, 2020, 1:30 p.m.

Bid Opening Location: Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

8. ADDENDUM ACKNOWLEDGEMENT: Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

9. BID FORMATTING: Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

10. ALTERNATE MODEL OR BRAND: Unless the box below is checked, any model, brand, or specification listed in this Solicitation establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the

equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.

☐ This Solicitation is based upon a standardized commodity established under W. Va. Code § 5A-3-61. Vendors are expected to bid the standardized commodity identified. Failure to bid the standardized commodity will result in your firm's bid being rejected.

11. EXCEPTIONS AND CLARIFICATIONS: The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.

12. COMMUNICATION LIMITATIONS: In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.

13. REGISTRATION: Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the $125 fee, if applicable.

14. UNIT PRICE: Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.

15. PREFERENCE: Vendor Preference may be requested in purchases of motor vehicles or construction and maintenance equipment and machinery used in highway and other infrastructure projects. Any request for preference must be submitted in writing with the bid, must specifically identify the preference requested with reference to the applicable subsection of West Virginia Code § 5A-3-37, and must include with the bid any information necessary to evaluate and confirm the applicability of the requested preference. A request form to help facilitate the request can be found at:
http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf.

15A. RECIPROCAL PREFERENCE: The State of West Virginia applies a reciprocal preference to all solicitations for commodities and printing in accordance with W. Va. Code § 5A-3-37(b). In effect, non-resident vendors receiving a preference in their home states, will see that same preference granted to West Virginia resident vendors bidding against them in West Virginia. Any request for reciprocal preference must include with the bid any information necessary to evaluate and confirm the applicability of the preference. A request form to help facilitate the request can be found at: http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf.

16. SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES: For any solicitations publicly advertised for bid, in accordance with West Virginia Code §5A-3-37(a)(7) and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women-owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or

minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. Va. CSR § 148-22-9 prior to contract award to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority owned business shall be applied in accordance with W. Va. CSR § 148-22-9.

17. WAIVER OF MINOR IRREGULARITIES: The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.

18. ELECTRONIC FILE ACCESS RESTRICTIONS: Vendor must ensure that its submission in wvOASIS can be accessed and viewed by the Purchasing Division staff immediately upon bid opening. The Purchasing Division will consider any file that cannot be immediately accessed and viewed at the time of the bid opening (such as, encrypted files, password protected files, or incompatible files) to be blank or incomplete as context requires, and are therefore unacceptable. A vendor will not be permitted to unencrypt files, remove password protections, or resubmit documents after bid opening to make a file viewable if those documents are required with the bid. A Vendor may be required to provide document passwords or remove access restrictions to allow the Purchasing Division to print or electronically save documents provided that those documents are viewable by the Purchasing Division prior to obtaining the password or removing the access restriction.

19. NON-RESPONSIBLE: The Purchasing Division Director reserves the right to reject the bid of any vendor as Non-Responsible in accordance with W. Va. Code of State Rules § 148-1-5.3, when the Director determines that the vendor submitting the bid does not have the capability to fully perform, or lacks the integrity and reliability to assure good-faith performance."

20. ACCEPTANCE/REJECTION: The State may accept or reject any bid in whole, or in part in accordance with W. Va. Code of State Rules § 148-1-4.5. and § 148-1-6.4.b."

21. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

22. INTERESTED PARTY DISCLOSURE: West Virginia Code § 6D-1-2 requires that the vendor submit to the Purchasing Division a disclosure of interested parties to the contract for all contracts with an actual or estimated value of at least $1 Million. That disclosure must occur on the form prescribed and approved by the WV Ethics Commission prior to contract award. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

23. WITH THE BID REQUIREMENTS: In instances where these specifications require documentation or other information with the bid, and a vendor fails to provide it with the bid, the Director of the Purchasing Division reserves the right to request those items after bid opening and prior to contract award pursuant to the authority to waive minor irregularities in bids or specifications under W. Va. CSR § 148-1-4.6. This authority does not apply to instances where state law mandates receipt with the bid.

GENERAL TERMS AND CONDITIONS:

1. CONTRACTUAL AGREEMENT: Issuance of a Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

2. DEFINITIONS: As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.

2.1. "Agency" or **"Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

2.2. "Bid" or **"Proposal"** means the vendors submitted response to this solicitation.

2.3. "Contract" means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.

2.4. "Director" means the Director of the West Virginia Department of Administration, Purchasing Division.

2.5. "Purchasing Division" means the West Virginia Department of Administration, Purchasing Division.

2.6. "Award Document" means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.

2.7. "Solicitation" means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

2.8. "State" means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

2.9. "Vendor" or **"Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

3. CONTRACT TERM; RENEWAL; EXTENSION: The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

☑ **Term Contract**

Initial Contract Term: Initial Contract Term: This Contract becomes effective on Upon Award and extends for a period of ONE (1) year(s).

Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to THREE (3) successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of months available in all renewal years combined. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

☐ **Alternate Renewal Term** – This contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

Delivery Order Limitations: In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

☐ **Fixed Period Contract:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within _____ days.

☐ **Fixed Period Contract with Renewals:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within _____ days. Upon completion of the work covered by the preceding sentence, the vendor agrees that maintenance, monitoring, or warranty services will be provided for _____ year(s) thereafter.

☐ **One Time Purchase:** The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

☐ **Other:** See attached.

4. NOTICE TO PROCEED: Vendor shall begin performance of this Contract immediately upon receiving notice to proceed unless otherwise instructed by the Agency. Unless otherwise specified, the fully executed Award Document will be considered notice to proceed.

5. QUANTITIES: The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

☑ **Open End Contract:** Quantities listed in this Solicitation are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

☐ **Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.

☐ **Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

☐ **One Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

6. EMERGENCY PURCHASES: The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute of breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One Time Purchase contract.

7. REQUIRED DOCUMENTS: All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.

☐ **BID BOND (Construction Only):** Pursuant to the requirements contained in W. Va. Code § 5-22-1(c), All Vendors submitting a bid on a construction project shall furnish a valid bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.

☐ **PERFORMANCE BOND:** The apparent successful Vendor shall provide a performance bond in the amount of 100% of the contract. The performance bond must be received by the Purchasing Division prior to Contract award.

☐ **LABOR/MATERIAL PAYMENT BOND:** The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be delivered to the Purchasing Division prior to Contract award.

In lieu of the Bid Bond, Performance Bond, and Labor/Material Payment Bond, the Vendor may provide certified checks, cashier's checks, or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of a bond must be of the same amount and delivered on the same schedule as the bond it replaces. A letter of credit submitted in lieu of a performance and labor/material payment bond will only be allowed for projects under $100,000. Personal or business checks are not acceptable. Notwithstanding the foregoing, West Virginia Code § 5-22-1 (d) mandates that a vendor provide a performance and labor/material payment bond for construction projects. Accordingly, substitutions for the performance and labor/material payment bonds for construction projects is not permitted.

☐ **MAINTENANCE BOND:** The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system. The maintenance bond must be issued and delivered to the Purchasing Division prior to Contract award.

☐ **LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State's sole discretion.

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The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.

8. INSURANCE: The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below and must include the State as an additional insured on each policy prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in insurers. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether or not that insurance requirement is listed in this section.

Vendor must maintain:

☑ **Commercial General Liability Insurance** in at least an amount of: $1,000,000.00 per occurrence.

☑ **Automobile Liability Insurance** in at least an amount of: $1,000,000.00 per occurrence.

☐ **Professional/Malpractice/Errors and Omission Insurance** in at least an amount of: _____ per occurrence. Notwithstanding the forgoing, Vendor's are not required to list the State as an additional insured for this type of policy.

☐ **Commercial Crime and Third Party Fidelity Insurance** in an amount of: _____ per occurrence.

☐ **Cyber Liability Insurance** in an amount of: _____ per occurrence.

☐ **Builders Risk Insurance** in an amount equal to 100% of the amount of the Contract.

☐ **Pollution Insurance** in an amount of: _____ per occurrence.

☐ **Aircraft Liability** in an amount of: _____ per occurrence.

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Notwithstanding anything contained in this section to the contrary, the Director of the Purchasing Division reserves the right to waive the requirement that the State be named as an additional insured on one or more of the Vendor's insurance policies if the Director finds that doing so is in the State's best interest.

9. WORKERS' COMPENSATION INSURANCE: The apparent successful Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

10. [Reserved]

11. LIQUIDATED DAMAGES: This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy. Vendor shall pay liquidated damages in the amount specified below or as described in the specifications:

☐ _____ for _____

☑ Liquidated Damages Contained in the Specifications

12. ACCEPTANCE: Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

13. PRICING: The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.

14. PAYMENT IN ARREARS: Payment in advance is prohibited under this Contract. Payment may only be made after the delivery and acceptance of goods or services. The Vendor shall submit invoices, in arrears.

15. PAYMENT METHODS: Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)

16. TAXES: The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

17. ADDITIONAL FEES: Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

18. FUNDING: This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available.

19. CANCELLATION: The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.

20. TIME: Time is of the essence with regard to all matters of time and performance in this Contract.

21. APPLICABLE LAW: This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code or West Virginia Code of State Rules is void and of no effect.

22. COMPLIANCE WITH LAWS: Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.

> **SUBCONTRACTOR COMPLIANCE:** Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

23. ARBITRATION: Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

24. MODIFICATIONS: This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.

25. WAIVER: The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.

26. SUBSEQUENT FORMS: The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

27. ASSIGNMENT: Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.

28. WARRANTY: The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.

29. STATE EMPLOYEES: State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.

30. PRIVACY, SECURITY, AND CONFIDENTIALITY: The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in http://www.state.wv.us/admin/purchase/privacy/default.html.

31. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

32. LICENSING: In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

33. ANTITRUST: In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

34. VENDOR CERTIFICATIONS: By signing its bid or entering into this Contract, Vendor certifies (1) that its bid or offer was made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity submitting a bid or offer for the same material, supplies, equipment or services; (2) that its bid or offer is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this Solicitation in its entirety; understands the requirements, terms and conditions, and other information contained herein.

Vendor's signature on its bid or offer also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency. The individual signing this bid or offer on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or offer or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his or her knowledge, the Vendor has properly registered with any State agency that may require registration.

35. VENDOR RELATIONSHIP: The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

36. INDEMNIFICATION: The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

37. PURCHASING AFFIDAVIT: In accordance with West Virginia Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State, Vendors are required to sign, notarize, and submit the Purchasing Affidavit to the Purchasing Division affirming under oath that it is not in default on any monetary obligation owed to the state or a political subdivision of the state.

38. ADDITIONAL AGENCY AND LOCAL GOVERNMENT USE: This Contract may be utilized by other agencies, spending units, and political subdivisions of the State of West Virginia; county, municipal, and other local government bodies; and school districts ("Other Government Entities"), provided that both the Other Government Entity and the Vendor agree. Any extension of this Contract to the aforementioned Other Government Entities must be on the same prices, terms, and conditions as those offered and agreed to in this Contract, provided that such extension is in compliance with the applicable laws, rules, and ordinances of the Other Government Entity. A refusal to extend this Contract to the Other Government Entities shall not impact or influence the award of this Contract in any manner.

39. CONFLICT OF INTEREST: Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

40. REPORTS: Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

☑ Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

☐ Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at purchasing.requisitions@wv.gov.

41. BACKGROUND CHECK: In accordance with W. Va. Code § 15-2D-3, the Director of the Division of Protective Services shall require any service provider whose employees are regularly employed on the grounds or in the buildings of the Capitol complex or who have access to sensitive or critical information to submit to a fingerprint-based state and federal background inquiry through the state repository. The service provider is responsible for any costs associated with the fingerprint-based state and federal background inquiry.

After the contract for such services has been approved, but before any such employees are permitted to be on the grounds or in the buildings of the Capitol complex or have access to sensitive or critical information, the service provider shall submit a list of all persons who will be physically present and working at the Capitol complex to the Director of the Division of Protective Services for purposes of verifying compliance with this provision. The State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check.

Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

42. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.

b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:

c. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars ($2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or

d. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

43. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars ($50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a

"substantial labor surplus area", as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

44. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE: W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least $1 million, the vendor must submit to the Agency a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-award interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

45. PROHIBITION AGAINST USED OR REFURBISHED: Unless expressly permitted in the solicitation published by the State, Vendor must provide new, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Name, Title)

C. Chad Seals - Commercial sales
(Printed Name and Title)

5120 Wards Road Evington, VA. 24550
(Address)

(P)(800) 533-1006 (F)(434) 821-4456
(Phone Number) / (Fax Number)

chad@sonnymerryman.com
(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Sonny Merryman Inc.
(Company)

(Authorized Signature) (Representative Name, Title)

C. Chad Seals - Commercial Sales
(Printed Name and Title of Authorized Representative)

07/22/2020
(Date)

(P)(800) 533-1006 (F)(434) 821-4456
(Phone Number) (Fax Number)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.:

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

- [X] Addendum No. 1
- [X] Addendum No. 2
- [ ] Addendum No. 3
- [ ] Addendum No. 4
- [ ] Addendum No. 5
- [ ] Addendum No. 6
- [ ] Addendum No. 7
- [ ] Addendum No. 8
- [ ] Addendum No. 9
- [ ] Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Sonny Merryman Inc.
Company

Authorized Signature

07/22/2020
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

SPECIFICATIONS

1. **PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of the Division of Public Transit and any other agency that desires to utilize this contract to establish an open-ended contract for 156" Wheelbase Dual Rear Wheel (DRW) Narrow Body Cutaway vehicles fixed seats with air conditioning and wheelchair securements and lift to provide specialized transportation services in an urban and suburban-rural environment, including hilly terrain and a severe operating climate suited to stop-star duty cycles.

   Vehicles supplied shall conform in all respects to the applicable Motor Vehicle Laws of the State of West Virginia, Federal Motor Vehicle Safety Standards, Environmental Protection Agency, Federal and State Regulations in effect at the time of manufacture and all must be in compliance with Americans with Disabilities Act (ADA) regulations at the time production of the vehicle commences.

   The Vendor is to deliver a complete new 2020 or current year vehicle in one of proposed floor plans as defined in these specifications with different configurations identified as Class on the Exhibit A Pricing Pages, ready for operation. **All required Federal Transit Administration's certification forms must be included in the bid proposal.**

2. **DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.

   2.1 **"ADA"** means Americans with Disabilities Act of 1990 including applicable federal regulations issued pursuant to the Act in effect at the time production of the vehicle commences.

   2.2 **"ASTM"** means American Society for Testing and Materials.

   2.3 **"Contract Item"** or **"Contract Items"** means the list of items identified in Section 3.1 below and on the Pricing Pages.

   2.4 **"Curb Weight"** means Weight of the vehicle including maximum fuel, oil, and coolant and all equipment required for the operation as required by this specification without passengers or driver.

   2.5 **"DBA"** means the decibel scale A weight to measure upper middle frequencies over time that can impact hearing loss.

   2.6 **"Division"** means the West Virginia Division of Public Transit, DPT.

   2.7 **"DMV"** means Division of Motor Vehicles State of West Virginia.

   2.8 **"EPA"** means Environmental Protection Agency.

2.9 **"EPA"** means Environmental Protection Agency.

2.10 **"Fire Resistant"** means Materials that have a flame-spread index less than 150 as measured in a radiant panel flame test per ASTM 162-75.

2.11 **"Fireproof"** means materials that will not burn or melt at temperatures less than 2,000 degrees Fahrenheit.

2.12 **"FMVSS"** means Federal Motor Vehicle Safety Standards.

2.13 **"FTA"** means Federal Transit Administration.

2.14 **"GAWR FR"** is the maximum distributed weight that may be supported by the front axle.

2.15 **"GAWR RR"** is the maximum distributed weight that may be supported by the rear axle.

2.16 **"Gross Load"** means one hundred and seventy-five (175) pounds for every design passenger seating position and for the driver and three hundred (300) pounds for every wheelchair station. Vehicles will be operated without standees.

2.17 **"Gross Vehicle Weight Rating (GVWR)"** means the maximum loaded weight (including curb weight, operator & passenger weight, and payload) in pounds (lbs.) of a single vehicle. Vehicle manufacturers specify the maximum GVWR on the vehicle certification label.

2.18 **"HP"** means the power of an engine measured in terms of a unit of power equal to 550-foot pounds per second.

2.19 **"Manufacturer/Brand"** means the name of the maker of the contract item which will be supplied by the vendor.

2.20 **"Model & Number"** means the model name and model number associated with the contract item as defined by the manufacturer.

2.21 **"OEM"** means Original Equipment Manufacturer.

2.22 **"Powertrain"** means the group of components used to transmit engine power to the wheels. The powertrain includes the engine, clutch, transmission, universal joints, drive shaft, and rear-axle gears.

2.23 **"Pricing Page"** means the pages, contained in wvOASIS or attached as Exhibit A, upon which Vendor should list its proposed price for the Contract Items.

2.24 **"Pricing Pages"** means the schedule of prices, estimated order quantity, and totals contained in wvOASIS or attached hereto as Exhibit A and used to evaluate the Solicitation responses.

2.25 **"QVM"** means Qualified Vehicle Manufacturer.

2.26 **"RPM"** means Revolutions per minute.

2.27 **"SAE"** means Society of Automotive Engineers.

2.28 **"Solicitation"** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

2.29 **"Vendor Name"** means the company name of the vendor who will be supplying the contract item(s) to the Division.

2.30 **"Warranty"** means the written guarantee issued with new motor vehicles or related equipment. It defines the manufacturer's responsibility for the repair or replacement of defective parts and other services provided as part of the purchase price. A warranty can be nullified if the user does not follow certain stipulations of the manufacturer, such as preventive maintenance.

2.31 **"Wheelbase"** means the distance from the centerline of the front axle to the centerline of the rear axle. Minimum of 156".

3. GENERAL REQUIREMENTS:

3.1 **Contract Items and Mandatory Requirements:** Vendor shall provide Agency with the Contract Items listed below on an open-end and continuing basis. Contract Items must meet or exceed the mandatory requirements as shown below.

3.1.1 In all cases, materials shall be furnished as specified Where brand names or specific items or processes are used in the specification, consider the term or equal to follow.

3.1.1.1 **Legal Requirements.** The vehicle shall meet all applicable FMVSS, DMV and ADA, federal and state regulations in effect at the date of manufacture. Vendor shall supply certification that vehicle meets all FMVSS Regulations and that vehicle complies with all relevant federal and State of West Virginia Standards at the time of delivery.

3.1.1.2 **Components, Materials, Workmanship and Completeness.** These specifications reflect the Division of Public Transit's preference as to dimensions, materials, and major components. However, the vendor shall not omit any part of detail which goes to make the vehicle

complete and ready for service, even though such part or detail is not mentioned in these specifications.

3.1.1.3 All units or parts shall be manufacturer's best quality and shall conform in material, design and workmanship to the best practice known in the automotive industry. All parts shall be new and in no case will used, reconditioned, or obsolete parts be accepted. The parts on all vehicles provided by the same manufacturer shall be interchangeable.

3.1.1.4 The price quoted in any proposal submitted shall include all items of labor, material, tools, equipment and other costs necessary to fully complete the manufacture and delivery of the vehicle pursuant to these specifications.

3.1.1.5 It is the intent of these specifications to provide and require a complete vehicle of the type prescribed ready for operation. The vendor shall assume sole responsibility for the entire vehicle as to warranty and after-sale parts and service.

3.1.1.6 Warranty to become effective on the first day, after the date of final acceptance, of each vehicle by the Division of Public Transit.

3.1.1.7 **Exhaust Emission Control Requirements.** The vehicle shall comply with all federal and state requirements applicable to the year of manufacture.

3.1.1.8 **Noise Control.** The exterior noise from the vehicle shall not exceed eighty-six (86) dba using the procedures set forth in the SAE Standard SAE J366. Vendor shall supply report showing testing results of noise control. The interior noise at a location (2) feet from the rear window and four (4) feet from the floor shall not exceed eighty-six (86) dba with the vehicle standing with the transmission in neutral and the engine operating at a maximum rated RPM.

3.1.1.9 **Inspection Facilities.** In order to comply the manufacturer shall provide on its premises a suitable hoist for a complete inspection of the underside of the vehicle. **A pit is not acceptable.** This includes, but not limited to, wiring and hosing runs, structural integrity,

through floor securements, OEM defects and completeness, and coverage of the undercoating.

3.1.1.10 Body shall be thoroughly water tested and made tight to prevent leakage. All vehicles purchased under this contract shall, during the course of the manufacture and prior to acceptance, shall be subjected to a water test to determine body leaks. This test shall consist of a series of nozzles, which are strategically located around the perimeter of the vehicle as to spray water over the entire surface of the vehicle. The nozzles shall eject a volume of water no less than twenty-two (22) pounds per square inch measured at the nozzle tip. Body shall be thoroughly water teste and made tight to prevent leakage. The bidder shall provide the procuring agency with details of its water testing procedures with the bid.

THE PRICING AND TERMS AND CONDITIONS OF THE BID MAY BE EXTENDED TO WEST VIRGINIA TRANSIT AUTHORITES AND PRIVATE NON-PROFIT ORGANIZATIONS. IF VENDOR DOES NOT AGREE, VENDOR MUST CLEARLY INDICATE A REFUSAL IN HIS/HER BID.

3.2 CHASSIS

3.2.1 Chassis shall be OEM's original wheelbase. Cutting between the axles to extend the wheelbase is not allowed. Chassis extensions behind the rear axles to support the body shall be in accordance with OEM's recommended practices and painted to match the original chassis. All welds and cuts shall be properly dressed and deburred to present a professional finish.

3.3 ENGINE / EXHAUST SYSTEM

3.3.1 Engine shall be V-6 gasoline engine or equivalent, having a minimum of 310 horsepower.

3.3.2 The engine shall be furnished with a large capacity full flow oil filter easily reached and replaced without removal of any major component. Engine shall be equipped with oil fill access in top of rear valve pan cover. Front oil filler tube shall be extended to rear of front access door. All service tubes should be extended in a similar manner. Care should be taken to ensure that the battery and alternator supply wire is insulated to prevent grounding during oil filter removal/replacement. Transmission

cooler lines should not interfere with the oil filter removal or replacement. A low voltage light shall be under the hood in order for service personnel to service vehicle.

3.3.3 The engine shall be installed so as to produce a minimum of vibration. A firewall of sandwich construction shall separate the engine and passenger compartments, providing both thermal and acoustic insulation and sealing against intrusion of exhaust fumes into the vehicle. Non-combustible insulation shall be uses.

3.3.4 The OEM exhaust system shall be stainless steel exhaust pipes and muffler properly installed with heat shields and baffles. The rear exhaust and tip shall be aluminized steel. The tailpipe shall be designed to direct exhaust towards the curbside of the bus.

3.4 FUEL SYSTEM

3.4.1 A single fuel tank shall have a capacity of at least 25 gallons and be located between the chassis rails between the front and rear wheels. Fueling should be possible from the curbside.

3.5 COOLING SYSTEM

3.5.1 The cooling system shall have sufficient capacity to provide satisfactory cooling at 115 degrees Fahrenheit at sea level and shall be equipped with an overflow tank such that coolant expelled is saved and restored to the cooling system. The cooling system shall be the OEM chassis supplier's heaviest duty system,

3.6 HIGH IDLE SYSTEM

3.6.1 A high-idle system intended to maintain battery charging under heavy demand when the vehicle is stationary, and the emergency brake is applied shall be provided on all vehicles. The fast-idle switch will automatically disengage when the vehicle is placed in forward or reverse gears.

3.7 ENGINE OIL COOLER

3.7.1 An OEM oil cooler shall be provided.

3.8 TRANSMISSION

All fill tubes must be extended to an accessible position for easy service access.

3.8.1 Transmission shall be a heavy-duty, six-speed automatic minimum, with increased cooling capacity to match GVWR of vehicle.

3.8.2 The transmission and drive shall be heavy duty. Each section of the drive shaft shall be equipped with a guard to prevent the shaft from striking the passenger compartment floor or the ground in the event it should break.

3.8.3 The transmission shall have a separate cooling system appropriate for the intended use of the vehicle. The cooling system shall be protected with permanent type antifreeze to twenty-five (25) below zero Fahrenheit.

3.9 SUSPENSION

3.9.1 The suspension shall be the highest rating available. Suspension system shall provide the low, un-sprung weight characteristics necessary for passenger comfort without sacrificing vehicle stability and shall provide heavy-duty shock absorbers. A front axle with independent suspension is preferred. Vendor must perform a front-end alignment after each vehicle is completely built. The vendor shall supply a camber and caster kit for each vehicle. Vendor shall supply a statement of completion verifying that alignment was completed with warranty information.

3.10 HORN / AUDIBLE ALARM /BACKUP CAMERA

3.10.1 A 12-volt dual horn shall be situated beneath the front end of the vehicle, protected from wheel wash.

3.10.2 A rear alarm shall be provided that is clearly audible outside of the vehicle when the transmission is in reverse.

3.10.3 An audible door ajar alarm shall be provided for any rear emergency door.

3.10.4 An OEM backup camera will be provided on all vehicles.

3.11 FRONT AXLE AND STEERING

3.11.1 GAWR FR compatible with chassis OEM.

3.11.2 The steering mechanism shall be constructed so that the vehicle can be easily Steered by its operator and shall be such as to make the wheel free from road shock and vibration. The steering mechanism shall be self-centering, requiring little or no effort for the operator to bring the vehicle back to a straight-ahead position from a turning position Steering wheel rim shall be 25 inches maximum in diameter and the wheel rim shall be of plastic or synthetic resin construction molded over metal. The steering gear box should be placed in an easily accessible location for service. Steering shall be power assisted.

3.11.3 With the vehicle stationary on dry, level pavement and the engine idling, steering effort shall be as low as possible at the steering wheel. This effort shall remain approximately constant from just off straight-ahead to approaching full lock.

3.11.4 OEM tilt-wheel or adjustable steering column, with cruise control is required.

3.12 REAR AXLE

3.12.1 GAWR RR compatible with chassis OEM.

3.13 BRAKES

3.13.1 **Service Brakes:** The Anti-Lock Brake System (ABS) foundation brakes shall be a power-actuated hydraulic split system of four-wheel disc-type, with four channel anti-lock braking control. Braking system shall include a red brake warning lamp in the instrument cluster that lights when the parking brake is on, when a front or rear hydraulic failure occurs, or when brake fluid is low in the reservoir.

3.13.2 Emergency parking brakes shall be provided on the driveline or rear brakes.

3.13.3 The brake system shall meet all federal and state requirements for vehicles over 10,000 GVWR for stopping distance, stability while braking, fade resistance, water recovery and warning devices. The warning devices. The warning devices must meet FMVSS standards.

3.14 WHEELS

3.14.1 16.0 diameter X 6.0" width or sized compatible with the suspension and GVWR will be furnished. Each inner dual rear wheel shall come with an air valve extender.

3.14.2 Manufacturer shall provide a spare tire as standard equipment. The spare wheel and tire shall be sized per 3.15 and shall be shipped secured in the body of the vehicle appropriately secured so as not to damage the vehicle interior during shipment. Spare is to be the exact same tire and provided on the vehicle. Spare tire shall be painted white and it shall be as inflated to the proper pressure with air, not nitrogen.

3.14.3 Both inner and outer wheels shall be painted to match the basic body color, which is white.

3.15 TIRES

3.15.1 Vehicles shall be equipped with seven (six regular and one regular sized spare) steel belted radial tires.

3.15.2 **Tires** shall be supplied with the vehicle from the factory.

3.15.3 **Tire** Rating and Type shall conform to the GVWR of the vehicle and be all Season tires.

3.15.4 **Rubber** mud flaps shall be provided at all wheels. No hard plastic shall be permitted.

3.16 ELECTRICAL SYSTEM / WIRING

3.16.1 The vehicles are to be supplied with a twelve (12) volt electrical system. All components are to be selected and integrated to function in an environment characterized by low engine (alternator) speeds and high amperage draws, due to lights, flashers, air conditioning or heaters, and other accessories in constant operation. As Built Schematics must be supplied and current with all vehicles in Word or Adobe reader format. **Two (2) 11" x 17" clearly readable laminated print copies of the as built schematics are to be provided for each vehicle at the time of delivery.** All wiring shall be loomed and held in place by insulated clamps spaced every 12 inches on center. Wiring shall be system coded, numbered and function coded. All wiring must be at least 20 gauge. All wiring shall have adequate electrical insulation and provide flexibility and resistance against solvents or abrasives in accordance with SAE standards. All exposed underbody connectors shall be weather proofed for protection against the elements.
SAE Standard http://standards.sae.org/ams3625/

3.16.2 Wiring shall be correctly grouped and coded and installed such that systems checks, maintenance, and replacement can be affected with minimum effort.

3.16.3 Wiring shall be adequately supported. Where penetration of structural members occurs, grommets or similar devices shall be used to prevent chafing.

3.16.4 Where applicable, all circuits shall be suppressed with capacitors to eliminate interference with radio and TV transmission and reception.

3.16.5 **Alternator:** OEM 250-amp alternator with a rectifier is required. Rectifier may either integral or externally connected. Bidder shall specify the nature of the rectifier and method of installation. The voltage

regulator shall be solid state. The alternator shall be sized to provide a minimum of 90 percent of the continuous system draw at the engine manufacturer's recommended idle or 100 percent at automatic fast idle as specified (3.6 High Idle System). The alternator speed shall not exceed its recommended maximum or recommended high engine speed. The continuous system draw shall include all accessories in their "high" position, which could operate as the vehicle is in motion, i.e., excluding intermittently operating devices, such as turn signals, brake lights, or wheelchair lifts.

3.16.6 **Batteries:** Two (2) heavy-duty 12-volt batteries shall be provided with a minimum total capacity of 1520 CCA.

3.16.7 Both batteries are to be installed in a stainless-steel battery box on a stainless-steel slide-out try located on the curbside of the vehicle. An access door will be provided in the skirt to access the battery box. The access door will be secured with two (2) quarter-turn latches.

3.17 INSTRUMENTS AND CONTROLS:

The following instruments shall be provided. All controls shall be within the driver's arm reach when his seat belt is fastened. All instruments are to be grouped on a single panel in full view of the driver with no instruments obstructed by controls, trim panels, or other appurtenances and arranged in a consistent and uniform manner.

3.17.1 AM/FM/BT/SYNC Radio With 4" Display

3.17.2 Speedometer with recording odometer

3.17.3 Ammeter or voltammeter gauge

3.17.4 Low-charge warning light

3.17.5 Oil pressure gauge

3.17.6 Fuel tank level gauge(s)

3.17.7 Engine temperature gauge

3.17.8 Headlight on indication and headlight high beam indicator

3.17.9 Directional signal and flasher action light

3.17.10 Parking Brake Indicator

The following controls, in addition to the normal steering, braking, and transmission functions, shall be provided:

3.17.11 Separate switches and temperature controls for rear passenger compartment heater and air conditioner.

3.17.12 Separate switch and temperature controls for driver's heater, defroster and air conditioner.

3.17.13 Three speed electric windshield wipers with high, low and intermittent speeds and may be panel or column mounted.

3.17.14 Passenger compartment lights

3.17.15 Back Up Camera

3.17.16 Tilt Steering Wheel

3.17.17 Cruise Control

3.17.18 OEM Cigarette lighter and/or USB port for charging cell phone

3.17.19 Emergency flasher control facing driver and clearly visible

3.17.20 Master exterior light switch and auxiliary switches, if necessary, for any clearance or marker lights.

3.17.21 A two-speed heavy duty commercial vehicle circulation fan shall provided in the driver's area for increased circulation. The fan shall be a minimum of six (6) inches in diameter with at least a three-position control switch. Location will be approved by the West Virginia Division of Public Transit. The Division of Public transit must approve location of all controls.

3.18 ELECTRICAL FUSES/CIRCUIT BREAKERS

3.18.1 The fuse panel box shall be large enough in order that the wires are not cramped and easily accessible for service. The panel door shall have enough space between door and panel in order that the door and wires do not touch when closed.

3.18.2 All fuses and/or circuit breakers other than the OEM's chassis shall be placed in a waterproof electrical distribution panel located above the driver's door, accessible from inside the vehicle. Fuses will be automotive mini blade type fuses that plug into a modular distribution block, such as Cooper Bussman Series 3000 BEC, TCT, or equal.

3.18.3 The distribution panel access door shall be side or bottom hinged and

contain a readily visible circuit diagram of the electrical services.

3.19 BODY STRUCTURE / ROOF HATCH

3.19.1 Body shall be steel framed with a minimum 14-gauge steel and be built as an integral welded unit mounted on a chassis and adequately reinforced at all joints where stress concentration may occur. Side walls, rear wall, roof, and floor must be welded together; joining by other means is not acceptable. Details of body construction including materials, methods of joining and assembling components or sub-assemblies and method of attachment of the body to the chassis shall be submitted in bid. Honeycomb construction is not acceptable. Roof structure to include two roll bars fabricated from steel tubing incorporated into roof structure to provide additional strength.

3.19.2 Federal and state requirements including FMVSS #220 Rollover Protection are required to be met. The side and end forming shall be so designed and constructed that they will carry their proportion of the stresses imposed and absorb excessive impacts with as little damage as is practical. Adequate reinforcement shall be installed around all doors in order to transfer the stresses around these openings. All posits in body, side, and roof sections shall be of square section tubing or equal construction securely fastened to the under-frame structure so that the entire frame shall act as one unit without any movement at the joining. The end posts shall be designed to standards as required for federal and state standards for shear, static load on roof, and side panel impact protection.

FMVSS Standard #220
https://www.law.cornell.edu/cfr/text/49/571.220

3.19.3 All steel components are to be treated with an anti-corrosive, petroleum based primer that meets ASTM B117 (3500 hours) and ASTM D870 (1000 hours).

ASTM B117 https://www.astm.org/Standards/B117.htm

ASTM D870 https://www.astm.org/Standards/D870.htm

3.19.4 All nuts, bolts, clips, washers, clamps, and like-parts shall be galvanized, zinc-coated, or given a coast of primer as additional protection against corrosion. All exterior screws and bolts shall be stainless steel.

3.19.5 Interior surfaces of any exterior painted body panels and posts which are covered by trim material shall be given a coat of primer as additional protection against deterioration.

3.19.6 All exterior joints and seams shall be protected by the application of caulking compound of zinc chromate type or acceptable substitute.

3.19.7 All interior panels shall be riveted, welded or fastened to the body frame. All fasteners shall be installed to resist vibratory loosening. Exterior seams shall be constructed in such a manner that they shed water; the leading panel shall bed lapped over the following panel and in no case shall the sealing of the panels be dependent on caulking alone. All exterior joints and seams shall be protected by the application of caulking compound of zinc chromate type tape, Tectyl rubber type, or equal.

3.19.8 All exposed surfaces and edges shall be smooth, free from burrs and other projections, and shall be neatly finished.

3.19.9 Lower skirts to be of thick molded fiberglass or galvanized steel, or aluminum. Skirt seams MUST be placed above the wheel wells or adjacent to one of the A/C skirt condensers only.

3.19.10 The passenger entrance frame and wheelchair door shall be aluminum or stainless steel construction only.

3.19.11 The front cap shall have an extra framed support from the side of the passenger entrance door to the floor.

3.19.12 Roof shall be one-piece metal, fiberglass, or equal panel with one and one half (1 –1/2") minimum thickness rigid foam insulation or equivalent. Side panels above the floor line shall be one-piece fiberglass reinforced plastic (FRP), steel, aluminum, or equals on the exterior, of one-piece construction, firmly attached to prevent flexing of the panels to the frame structure to present a smooth pleasant appearance and to be free from drumming or oil canning. Vacuum lamination is the preferred method.

3.19.13 Side panels (skirt) below the floor line shall be detachable aluminum and separate from the above panels for ease of the maintenance and repair. An aluminum or galvanized steel underfloor shall be provided for the whole of the passenger compartment, and it shall be fully undercoated.

3.19.14 Stepwells shall be of one-piece stainless steel, galvanized steel, or aluminum construction welded into the floor and side-structures. The bottom of the steps and risers will be coated with undercoating, such as Z Tech Z guard 20060 B-2 or an equal. Stepwells shall be of one-piece construction of corrosion0resistant steel with covered corners and adequate reinforcement to prevent deflection. Stepwell shall be the full width of the door opening, and designed like the Talon Tread-type step or approved equal, which eliminates separation and exposure of metal to moisture on the treads and risers. The preferred method of manufacturing is a

process where the contrasting step nosing and flooring are heated with the metal stepwell so that the metal and flooring material are fused with fewer seams and less caulking. The entire underside of the vehicle should be fully undercoated. The nosing of each step shall be marked with bright yellow marking with abrasive strip insert not less than two (2) inches wide. Floor covering shall be laid without gaps or openings. Joints shall be filled with color matching material so as to be tight against any influx or seepage of water and all edges to be sealed. Stepwells and walkways to be contrasting color for higher visibility.

3.19.15 Wheel housing shall be steel and should provide clearance for wheels equipped with chains to move freely and to allow a wheel to be removed with the vehicle jacked on the rear axle. Application of exterior sidewalls with two-sided tape is not acceptable.

3.19.16 One piece Fiberglass Rear Cap.

3.20 EXTERIOR:

Vehicle exterior paint shall be OEM standard "white" finish.

3.20.1 **5310 Paratransit Vehicle Vinyl Scheme: Vinyl Logo/Striping Schemes on Vehicle Classes Paratransit Vehicles.** The Agency's name, phone number and Logo /Striping applied to both sides of the vehicle by the Vendor at the factory. This scheme uses two colors Pantone 485 Red and Pantone Process Blue Exterior.

3.20.2 The artwork for the logo and stripes will be provided by the Division upon award as well as, a list of agency names and phone numbers.

3.20.3 Signs and numbers shall be fade, chip, and peel-resistant: NO painted signs, decals or pressure sensitive appliques.

3.20.4 All decals shall be sealed with clear, waterproof sealant around the edges and on all exposed surfaces.

3.20.5 The exact location and size will be agreed upon between the Division of Public Transit and the successful bidder.

3.20.6 License plate mounts: located on the rear bumper or rear cap. Prior to delivery, all vehicles must be pre-drilled, with hardware installed, to meet specifications that require rear license plate. Any vehicle delivered without such plate mounts will be rejected.

3.20.7 Paint schemes and paint colors of the agencies receiving the vehicles will be furnished to the successful Vendor. Matching touch up paint must be provided. Each agency will have a logo and striping scheme. Each

agency's logo and striping scheme will have at least **3 colors, with the possibility of up to 5 colors. Where the logo covers the windows, perforated vinyl shall be used. Skirt painting must be included in the price. For those classes with full vehicle paint requirement, a ¾ paint expanded graphics package may be substituted.**

3.21 UNDERCOATING AND RUSTPROOFING:

3.21.1 All exposed floor seams shall be sealed with an industrial grade Tectyl sealant or equivalent which conforms to ASTM C920. The entire surface of exterior lowered floor shall have a rust inhibiting coating, such as an epoxy primer base, applied to cover all welded areas, and then a fresh application of undercoating over the entire surface. Undercoating shall comply with current Federal and State flammability standards.

ASTM C920 Standards: https://www.astm.org/Standards/C920.htm

3.21.2 The vehicles shall be fully undercoated at the point of manufacture prior to delivery.

3.22 DOORS –ACCESS AND ENTRANCE / EXIT

3.22.1 **Access Doors:** Access doors shall be provided where necessary to service transmission, engine, radiator, batteries, air conditioning, and radio system components.

3.22.2 **Ambulatory Passenger Doorway:** A driver operated 2 leaf, outward **opening** passenger access door shall be located towards the front of the right of the vehicle.

3.22.3 Dimensions shall be:

Overall Clear Height	Approximately 80"
Overall Clear Width	Not Less Than 29"
Tread Depth	Minimum of 10"
Riser Height	Maximum of 8.5"
Distance Step to Ground	Maximum of 10.5"

3.22.4 The door shall be fully glazed or provided with upper and lower windows allowing the driver an adequate view of the curbside area outside of the door. **Tempered safety glass shall be used.**

3.22.5 When the door is closed, the lower step shall not protrude beyond the door line more than two (2) inches.

3.22.6 Brushes or other appropriate seals shall be fitted to the bottom of the door

panels to assist in sealing and snow clearance.

3.22.7 Electrically Operated door to be provided. Door control shall be within twenty-eight (28) inches from the right side of the driver's shoulder. The door frame shall be welded at all seems to ensure that the door frame will not separate. An additional post shall run from the side of the passenger entrance door to the cap to provide an extra support for the front cap.

3.22.8 The passenger entrance door frames shall be aluminum or stainless-steel construction only.

3.22.9 Passenger door shall be key operated from the outside and by a rocker or toggle switch from the driver's console. Door pivot pins shall incorporate permanently lubricated bearings. Door must have an emergency release in case electric is not properly working.

3.22.10 Driver's door shall have an aluminum running board for easy access for the driver. The Division of Public Transit requests no less than 8.5" wide and within 8" of the ground.

3.22.11 **Non-Ambulatory Passenger Entrance/Exit:** A driver operated two-piece wheelchair entrance door with large upper viewing window, capable of being locked, shall be located at the rear of the curbside and behind the rear wheels. Doors shall be fitted with heavy-duty, full-length piano hinges. These doors shall not sag when open, and if there is a possibility of sagging, additional preventative gussets need to be inserted.

3.22.12 A minimum clear vertical distance of 59 inches required through the doorway and lift installation.

3.22.13 Overall door width of approximately 48" inches is required. The door width must provide operating clearance for a lift meeting the requirements of the lift section.

3.22.14 A warning light shall be provided at the driver's station to indicate when the door is open for wheelchair operation.

3.22.15 Door ajar signal is to be activated by a magnetic proximity switch or a plunger type switch. The striker for the signal must not have contact with flexible section of the door. It must either make contact with the top mullion or have a two (2) inch by two (2) striker plate to prevent false alarms.

3.22.16 Air springs shall be heavy, riveted to body and door or double nut and lock nut. Air springs will firmly secure the door in the open position.

3.22.17 Emergency Exit Door: A full height rear emergency exit door with a minimum clear opening of thirty-three and a half (33.5) inches by fifty-seven (57) inches minimum that fully complies with ADA standards shall be provided on all floor plans.

3.22.18 Large upper and lower windows shall be provided in the door to maximize rearward visibility.

3.22.19 Emergency exits with standard stainless-steel hinges will be required on all floor plans. A cam-over or spring style holdback to be used to secure door in open position. Pneumatic shock is unacceptable for rear door.

3.23 BUMPERS / FENDERS AND MOLDING

3.23.1 **Bumpers:** The front bumper shall be the OEM chassis suppliers.

3.23.2 The rear bumper shall be OEM chassis supplied and painted black.

3.23.3 Fenders: Flexible fenders shall be provided for the rear wheels, the Division of Public Transit shall approve materials and configuration. Rubber molding shall run the length of the passenger compartment at floor level. The molding shall be secured in a manner other than snapped onto a metal rail. The ends of the molding shall be finished and caulked if necessary, to prevent sharp edges at the angle cuts.

3.24 WHEELCHAIR LIFT

The lift shall meet or exceed all the U.S. Department of Transportation's minimum and Americans with Disabilities Act requirements.

3.24.1 Vehicle shall be equipped with one (1) fully automatic wheelchair lift, Braun Millennium 2 Series or equal. The lift shall have been tested to a minimum static load of 2,400 lbs. The lift shall have a 1000 lbs. rated lifting capacity and shall be installed in the rear of vehicle.

3.24.2 The lift shall have a self-cleaning, see-through, non-skid platform which can be folded and unfolded by one person.

3.24.3 Lift control switch shall be completely weatherproof with illuminated functions and labeled as to function. The controls shall be placed adjacent to the lift in such a position to enable the attendant or the disabled person, once the person is on the platform, to operate the lift. In the fully lowered position, the platform shall measure at least thirty-seven (37) inches wide and have an effective length of at least fifty-one (51) inches. A safety

barrier shall be the full length of the curb side edge of the platform and shall be a moveable hinged surface to provide a barrier to prevent the wheelchair from rolling off the lift during operation. Barrier to have a durable rubber nose guard and be powder coated yellow for safety and high visibility. A two (2) inch high barrier shall also be provided on each side of the platform to prevent wheelchairs from rolling over the edge. Two (2) automatic fold handrails shall be provided one on each side of the platform. A safely belt shall be installed on the lift to secure the occupant during the use of the lift.

3.24.4 Power unit shall be twelve (12) volt electro-hydraulic system. Power unit shall be readily accessible for service. A manual hand crank shall be installed for lift operation in the event of power failure.

3.24.5 Lift shall be capable of being used from curb level or ground. The lift should be capable of safely lifting a one thousand (1000) pound rated lifting capacity. The lift platform should be capable of being raised or lowered with a load in no more than twelve (12) seconds. All power units, operating joints, linkage, and mounting points to the body shall be certified

by the manufacturer as being adequate for the l loading. The operation of the unit shall provide a smooth, jerk-free ride in both up and down directions.

3.24.6 All sliding surfaces and load bearing pivot points shall be free of exposed grease and constructed with ball and roller bearings. All electrical and hydraulic lines and units, all control mechanisms and cables shall be securely fastened and placed so as not to interfere with passenger ingression and egression, or with any moving parts. All moving parts shall be shielded from contact with passengers and operator.

3.24.7 Platform shall fold into door area for storing while not in use. Platform in stored position shall not intrude into vehicle body more than 14 inches. Lift shall be adequately restrained in stored position to prevent lift from coming adrift while vehicle is in motion. The lift in its stored position shall not rattle.

3.24.8 It is the vendor's responsibility to provide instructions on the use of lift to meet the specified performance standards, and on the safe operation, maintenance and service of the lift, as well as, warranty information. An instructional video explaining the lift operations and lift maintenance shall be provided with each vehicle.

3.24.9 Lift controls shall be interlocked with the vehicle brakes and transmission and door, or other approved means, to ensure that the vehicle cannot be moved when the lift is not stowed and so the lift cannot be deployed unless the interlock mechanism(s) are engaged. The lift must not be able to be deployed without engaging the interlock system and the interlock must prevent the vehicle from being moved until the lift is stowed. Any interlock which can be disengaged prior to lift stowage will cause the vehicle not to be accepted. Intelligent Lift Interlock System Model #ILIS501 or equal.

3.24.10 A wheelchair lift light shall be located inside the vehicle to illuminate the lift. Two (2) additional lights will be mounted in the area to illuminate the surrounding area of the street. The lights shall function automatically when the lift door is opened, even with the running lights switch is in the off position to provide illumination in accordance with FTA/ADA requirements. Installation of the lights shall not intrude upon the headroom or effective width of the wheelchair access are.

Lift Installation:

3.24.11 The lift shall be installed by bolting through the floor into structural steel that is an integral part of the body underfloor structure.

3.24.12 The power unit shall be placed at the forward side of the lift for rear mounted lifts and on the rear side for forward mounted lifts and be readily accessible for service. In the event of power failure, the deployed lift platform shall be able to be lowered manually with passenger and raised without passengers.

3.24.13 System control valve shall be solenoid controlled and shall be accessibly mounted for easy maintenance. All lift components shall either be inside the vehicle or enclosed and protected for water wash.

3.24.14 Electrical control switches shall be completely weatherproof and labeled as to function. All switches shall be of the momentary type.

3.24.15 The lift installation shall provide a hand-held switch for remote operation of the lift in addition to or in place of the regular door-mounted electrical lift controls. The lift control cable shall have a protective steel wire cover from control to base for lift, if available.

3.24.16 A caution sign shall be prominently displayed in full view of persons standing at curbside of the vehicle as a warning to stand clear for lift operations.

3.24.17 An interlocking system with fast idle, such as Intermotive Gateway, ILIS, or equal, shall be provided which renders the lift inoperative unless the transmission shift lever is in the "park" position and the emergency brake is applied.

3.24.18 Activating the lift circuitry through a lift master switch will cause the rear hazard lights to flash.

3.24.19 Wheelchair lift shall have a grounding strap from the chassis frame to the lift frame.

3.24.20 The lift shall meet the NHTSA FMVSS platform lift systems for accessible motor vehicles in all areas, but not limited to minimum platform dimensions, maximum size limits on protrusions and other hardware, handrails, retaining barriers, and performance standards. A safety strap from handrail to handrail is required.

Federal Motor Vehicle Safety Standards; Platform Lift systems for Accessible Motor Vehicles Platform Lift Installations on Motor Vehicles: https://www.federalregister.gov/articles/2000/07/27/00-18773/federal-motor-vehicle-safety-standards-platform-lift-systems-for-accessible-motor-vehicles-platform

3.25 WINDOWS / GLAZING

3.25.1 **Windshield** shall be OEM tinted. Windshield shall be one (1) piece and laced in, but "not glued," unless OEM is a two-piece windshield.

3.25.2 **Passenger Windows** shall be T slider top mounted with at least one curbside and two street side hinged to provide emergency egress. Emergency exits are to be denoted with fade and peel resistant decals. Size shall be approximately forty-one (41) inches wide by twenty-nine (29) inches high with 1/8-inch AS-2 tempered glass tinted for 26 percent transmittance. Heavy-duty latches are to be used on all window.

3.25.3 **Passenger Door** panels shall have full height AS-3 tempered glass windows for maximum visibility of the curb.

3.25.4 **Lift Door Windows** shall incorporate a single large window in each door panel consistent with the other passenger windows. Doors shall be two-piece as is specified in section 5.1.11.

3.25.5 **Rear Windows** In addition to the windows in the rear emergency door, windows shall be provided on both sides of the door to increase rearward visibility, unless the rear cap is a molded piece and cannot be modified.

3.25.6 **Driver's Window** shall be sliding two-piece or have an opening section large enough for easy access to mirrors or payment of tolls, etc.

3.25.7 **Transition Window** The transition panel between the passenger door and the front fender shall have a window of approximately thirty-four (34) inches by ten (10) inches dimensions to enhance the view of the curb area. **Vendor shall submit dimensioned diagram with bid.**

3.26 HEATING AND AIR CONDITIONING

3.26.1 Heating System:

3.26.1.1 The heating system shall provide heat for both the driver and passengers as well as defrost air for the windshield. The system shall provide for a comfortable temperature for passengers throughout the vehicle by providing heat from both a dash and passenger compartment heater.

3.26.1.2 An electrical stepwell system heater, to be approved by the Division of Public Transit, shall be provided to eliminate ice and snow build-up. Heater using the coolant system shall be stainless steel.

3.26.1.3 A passenger compartment heater shall be provided towards the back of the vehicle to ensure consistent heat distribution throughout the vehicle. Gate vales shall be provided to allow the rear heater system to be shut off. Heater fans shall have high and low speeds. (Heater Capacity 1 x 35,000 BTU minimum).

3.26.2 Air Conditioning System:

3.26.2.1 The OEM chassis supplier's heaviest duty air-conditioning system shall be supplied plus such other components as necessary to ensure effective, uniform cooling throughout the vehicle. Trans Air, ACC, Burgess, or ACT or approved equals recommended. At a minimum, the system should consist of:

3.26.2.2 The OEM's engine driven compressor with a minimum displacement of 9 cubic inches. Provided a secondary engine-driven compressor of sufficient size to circulate the rear A/C per specifications.

3.26.2.3 The OEM's front mounted condenser shall not be removed.

3.26.2.4 A two fan oversized (minimum fan size- 14"; rated at 62,000 BTU's per hour), skirt-mounted condenser shall be shielded from road spray.

3.26.2.5 A ceiling mounted evaporator at the rear of the passenger compartment with a minimum capacity of 53,000 BTU's and separate fan speed control.

The A/C system shall utilize environmentally friendly R-134a refrigerant. Refrigerant hoses shall be double braided (type C, class II) and the refrigerant Hoses and fittings must be SAE specification J2064 compliant.

All A/C hoses, heater hoses and wiring shall be properly protected. The A/C systems will include, as standard, ATCO, Quick Click, or approved equal connectors and hoses. Bead lock fittings and rubber barrier hoses are not acceptable.

3.27 INTERIOR LIGHTING

3.27.1 The interior shall be illuminated by LED fixtures. Interior shall be illuminated to provide a minimum of twelve (12) foot candles of illumination measured at thirty-six (36) inches above the floor over each two-passenger cross seat. Provide detailed information on the installed interior lights with bid submittal.

3.27.2 The stepwell area shall be illuminated to FTA/ADA standards by door activated LED stepwell lights including the immediate area outside. These lights shall be shielded to protect passengers' eyes from glare. Light fixture shall be totally enclosed, splash-proof, designed to provide ease of cleaning as well as lamp housing removal and shall not be easily removed by passenger. Stepwell lights shall be protected from damage caused by passengers kicking the lenses or fixtures and shall not be a hazard to passenger. Stepwell lights shall be activated by operating the passenger door even with the running lights switch in the OFF position.

3.27.3 Red LED location indicator lights shall be provided above all emergency exits.

3.27.4 Fire Retardancy must meet or exceed FMVSS 302, ASTM-E 162 Surface mobility, and Flame Spread Index F - 5<150.

FMVSS 302:

https://www.law.cornell.edu/cfr/text/49/571.302

3.27.5 Light fixtures shall be designed to prevent accumulation of dust, insects

and other materials. Light fixture shall have an aluminum base and polycarbonate lens designed for easy maintenance and cleaning. Lens shall be effectively sealed such that incursion of dust and insects is prevented.

3.27.6 Light fixtures shall mount to the interior surface of the vehicle without requirement for perforation of that surface for other than threaded fasteners and wire. Light fixtures shall have formed endcaps that are shaped without sharp corners (rounded) and provide a finished appearance.

3.28 EXTERIOR LIGHTING:

3.28.1 Exterior lighting shall be in accordance with Federal Motor Vehicle Safety Regulations (393.12) See link below.

http://icsw.nhtsa.gov/cars/rules/standards/conspicuity/TBMpstr.html

3.28.2 All exterior lights to be single contact. Double contact may be used for tail, stop and rear turn signals. **Light Emitting Diode (LED) lights shall be used for taillights, brake lights, turn signal, collision avoidance lights, and clearance marker lights.** Truck-Lite or Equal is recommended.

3.28.3 Headlights of sealed beam type are required with high and low beams controlled by column-mounted lever switch or by a foot switch mounted on the floor, which will be sealed from moisture. Sealed beam units shall be of the latest type and low beam rating of 600-hour life. **Headlights shall be wired for daytime running.**

3.28.4 Directional signals independent of the brake lights shall be provided and shall have sealed amber lens in front and rear. Rear stoplights are to be independent of directional and hazard warning signals.

3.28.5 LED Rear stop and taillights shall be provided. Rear stoplights are to be independent of directional and hazard warning signals.

3.28.6 In addition to the normal stop lights provided on the base vehicle, an extra LED stoplight shall be provided. This light shall be mounted on the centerline of the vehicle above the rear door and shall be wired to operate in conjunction with the normal stoplights. If vehicle does not have a rear door, the light shall be mounted
above the rear window.

3.28.7 Red rear reflectors shall be provided. Additional four reflectors, two on each side of the vehicle, amber front and red rear, shall be provided.

3.28.8 LED mid-ship side directional signals wired to operate with front directional signals shall be provided.

3.28.9 A circuit shall be provided for the directional signal which, when on, will cause them to function as traffic hazard warning signals.

3.28.10 A rear LED license plate light shall be provided to meet Federal and State of West Virginia regulations.

3.28.11 Two (2) LED back-up lights shall be provided which are adequate to meet Federal and State of West Virginia regulations.

3.28.12 An LED wheelchair lift light shall be located inside the vehicle to illuminate the lift. One (1) additional LED light will be mounted on the skirt below the lift to illuminate the surrounding area of the street. The light shall function automatically when the lift door is opened, even when the running light switch is in the off position and provide illumination in accordance with FTA/ADA requirements. Installation of the lights shall not intrude upon the headroom of effective width of the wheelchair access area.

3.28.13 LED Marker, Cluster, and all other lights as required by State and Federal regulations shall be provided. Lights shall operate with or **without engine running.**

3.28.14 The rear hazard flashers shall be activated when the lift operating circuits are energized.

3.28.15 All lights are to be LED lights with the exception of the dome lights and headlights.

3.29 FLOOR AND FLOOR COVERING

3.29.1 Flooring shall be constructed of a minimum of 11-16 gauge steel. without visible cracks or holes firmly secured to the floor structure by the use of adhesive and mechanical fasters with no intrusions into the vehicle body compartment.

3.29.2 Floor shall be laid in such a matter as to be free from squeaking. Floor covering shall be slip resistant vinyl flooring, constructed with aluminum oxide, silicon carbide, quartz and optional PVC chip blended throughout a high quality vinyl wear surface (top coating is not acceptable). Backing to be polyester/cellulose material with fiberglass fiber reinforced center scrim for additional durability. Bacteriostats will be incorporated providing all exposed surface with excellent anti-bacterial properties. Minimum floor thickness of 2.2 millimeters (combination of flooring and backing not acceptable). Color to be selected by the Division of Public Transit.

3.29.3 The whole floor will be a uniform thickness throughout the vehicle, eliminating the need for ribbed surfaces, while exceeding the ADA minimum slip resistance standard rating of .06 static coefficient of friction

under dry or wet conditions. Covering material is to be installed to support floor when rolling floor covering up the sidewall of vehicle to the seat track.

3.29.4 Seams are to be heat welded to provide a permanent waterproof seal against water penetration leading to premature sub-floor failure or curing leading to possible tripping hazards.

3.29.5 Entrance area shall be covered with 2.2 MM floor covering. All step edges to be marked in accordance with FTA/ADA requirements. (Grid Style Yellow is the preferred color). Vendor must provide sample within 48 hours of request.

3.29.6 Aisle front entrance and securement areas shall be covered with 2.2 MM floor covering.

3.29.7 A Standee Line is required. Color to be same as step nosing. **(Yellow is the preferred color).**

3.29.8 Insulation of rigid closed cell polystyrene, polyurethane foam, or bagged fiberglass shall be provided for the full depth of the structure between all interior and exterior panels and any cavities between the subfloor and floor construction. Vendor shall specify the type of insulation with their bid, with documentation that it is flame retardant and non-toxic, but vendor must provide this information within 48 hours of request.

3.29.9 **Roof Gutters:** Water deflecting roof gutters shall be provided over ambulatory and wheelchair accessible doors and windows.

3.30 INTERIOR DECALS:

3.30.1 Interior Decals:

1) **"No Smoking"** sign shall be installed on the area above the driver, facing the passengers.

2) **"All Passengers Are Required to Wear Seat Belts When Vehicle Is In Motion"** sign shall be installed on the driver modesty panel.

3) **"Clearance ___ feet _____ inches"** above driver's visor. (These specific figures on clearance will be determined by exact dimensions of vehicle.)

4) **"Emergency Dial 911"** sign shall be installed on the driver modesty panel.

5) **"Emergency Equipment"** sign shall be applied above emergency equipment.

6) **"Priority Seating"** Decals shall be supplied for the first two fixed, Forward facing seats on both sides.

7) Any "**Emergency Exits**" or "**Emergency Windows**" are to be noted with a decal.

3.30.2 Interior Panels and Ceiling:

Ceiling and side panels shall match the interior color scheme and provide a hard, vandal resistant, flame-retardant surface.

3.30.3 Black lettering on yellow background "**Watch Your Step**" decals are to be affixed to entrance step risers.

3.31 PAINTING, FINISHING, AND SIGNAGE

3.31.1 Exterior Paint:

Surfaces shall be properly cleaned and primed, as appropriate for the paint used. All exterior surfaces shall be impervious to gasoline and commercial cleaning agents. The exterior of each vehicle shall be painted in a basic white or light cream color as furnished by the chassis manufacturer. One or more horizontal reflective decal stripes shall encircle the vehicle immediately below the window line. Finished surfaces shall not be damaged by controlled applications of commonly used graffiti-removing chemicals. Matching touch up paint must be provided.

3.31.2 Exterior Paint Scheme:

Vehicle exterior paint shall be OEM standard "white" finish.

3.31.3 **5310 Paratransit Vehicles Vinyl Scheme**: Vinyl Logo/Striping Schemes on Vehicle Classes A-C Paratransit Vehicles and Classes J through O.
This will include the Agency Name, Phone Number and Logo/striping applied to both sides of the vehicle by the Vendor at the factory. This scheme uses two colors Pantone 485 (red) and Pantone Process Blue. See attached photo 5310 Logo and stripes for example.

3.31.4 The artwork for the log and stripes will be provided by the Division to Vendor who is awarded the contract as well as, a list of agency names and phone numbers.

3.31.5 Signs and numbers shall be fade, chip, and peel-resistant: NO painted signs, decals or pressure sensitive appliques.

3.31.6 All decals shall be sealed with clear, waterproof sealant around the edges and on all exposed surfaces.

3.31.7 The exact location and size and will be agreed upon between the Division of Public Transit and the successful bidder.

3.31.8 License plate mounts: located on the rear bumpers. Prior to delivery, all vehicles must be pre-drilled, with hardware installed, to meet specification that require rear license plate. Any vehicle delivered without such plate mounts will be rejected.

3.31.9 Exterior Signage:

The following internal and external signage is required. Lettering to be Helvetica Medium. Numbers to be 4 inches unless otherwise specified for external signage. **Full details of size and location will be agreed upon between the Division of Public Transit and the successful bidder.**

3.31.10 Exterior Reflective Vinyl Tape:

3.31.10.1 The vehicle shall be stripped from front to back with exterior white reflective vinyl tape around the egress passenger windows, meeting DOT-C2 standards. (See the following link regarding DOT-C2 standards.)

https://www.fmcsa.dot.gov/regulations/title49/part/393

3.31.10.2 When the existing logos are not on the rear of the vehicle, the White reflective vinyl must circle the rear emergency door window, if present, even when the color vinyl is used in the logo.

3.31.10.3 When reflective tape and paint are used for the same color on one vehicle, they must match (Example: painting the vehicle skirt and using tape stripes for the side of the vehicle must match.)

3.31.10.4 Finished surfaces shall not be damaged by controlled applications of commonly used graffiti-removing chemicals.

3.31.10.5 "**This Vehicle Stops at all Railroad Crossings**" on the back of the vehicle.

3.31.10.6 The International Wheelchair Accessibility Symbol on the back of the vehicle.

3.31.10.7 "**CAUTION: LOADING AND UNLOADING PASSENGERS**" on the back of the vehicle.

3.31.10.8 **"CAUTION: STAND CLEAR FOR LIFT OPERATIONS"** on lift door.

3.31.10.9 The exterior decals shall have four (4) inch lettering and shall be white letters on red background.

3.31.11 License plate mounts: located on the rear bumpers. Prior to delivery, all vehicles must be pre-drilled, with hardware installed, to meet specifications that require rear license plate. Any vehicle delivered without such plate mounts will be rejected.

3.32 SEATING

3.32.1 Seats shall be Freedman or equal, being a Mid-high back double with semi-bucket and contoured configuration. Seats shall be spring base with five (5) inches of foam padding. Upholstery shall be grade 4 or higher with ABS Knee-Saver back. **Description of offered product to be provided with bid submittal. Four (4) seat belt extenders shall be provided per vehicle ordered.**

3.32.2 A padded grab rail shall be provided on top of each forward-facing seatback and all fold-away. Grab rail is not required on the rearmost seats.

3.32.3 The seats shall be equipped with the Freedman USR (under seat retractor) system or equal complying with FMVSS 210. (see link below) Or equal would meet FMVSS 210 and the belts shall be fully retractable into housings and shall not touch the floor at any time. Retractable seatbelts shall be attached to the seat frames. All bests shall be permanently kept in the correct position for securement applications.

FMVSS 210
http://www.ecfr.gov/cgi-bin/text-idx?SID=7d443eb75ceba033fed91e90f816b574&node=se49.6.571_1210&rgn=div8

3.32.4 Seats shall use a single T pedestal leg with black painted finish and side rail for mounting.

3.32.5 **Priority Seating:** Appropriately positioned signs shall indicate that the first two (2) rows on each side are designated as priority seating for the elderly and persons with disability.

3.32.6 Seats shall conform to the following dimensions:

Width per Passenger	13 inches
Height of Seat Cushion	18 inches
Depth of Seat	17 inches

Height of Seat Back	23 inches max. (except rear row)
Hip-to-Knee Room	27 inches minimum
Aisle Width	11 inches minimum

3.32.7 Seats and Seating shall comply with the following FMVSS Standards:

FMVSS Standard 207 Seating Systems:
https://www.law.cornell.edu/cfr/text/49/571.207

FMVSS Standard 208 Occupant Crash Protection:
https://www.law.cornell.edu/cfr/text/49/571.208

FMVSS Standard 209 Seat Belt Assemblies and Anchorage:
https://www.law.cornell.edu/cfr/text/49/571.209

FMVSS Standard 210 Seat Belt Assemblies and Anchorage:
https://www.law.cornell.edu/cfr/text/49/571.210

3.32.8 A fold up armrest will be provided on all passenger seats. Seat shall have FMVSS certified seatbelts with retractor. Seats in back row should be high back for safety.

3.32.9 Two (2) double mid-high seats will be two (2) child restraint seats. Integrated child restraint seat which is capable of securing a child between the height of thirty-three (33) inches and forty-nine (49) inches with a weight between twenty (20) to sixty (60) pounds. Instructions for the securement shall be printed on the seat and shall be easy to understand.

3.32.10 Driver's Seat: The driver's seat shall be power high-back bucket seat with commercial grade cloth material that matches the color of the passenger seats (Grade 4 cloth minimum). Driver's seat shall have a folding armrest, a headrest, and a lumbar support as a minimum. 9100 ALX 3 (9110) operator seat is equal. Seat shall have a minimum of four (4) inches fore and aft adjustment. Seat installation shall allow for unimpeded movement over the whole seat range. A shoulder belt is required.

Seats and seating shall comply with the following FMVSS Standards:

Standard Number 207 Seating Systems
http://www.ecfr.gov/cgi-bin/text-idx?SID=7d443eb75ceba033fed91e90f816b574&node=se49.6.571_1207&rgn=div8

Standard Number 208 Occupant Crash Protection
http://www.ecfr.gov/cgi-bin/text-idx?SID=7d443eb75ceba033fed91e90f816b574&node=se49.6.571_1208&rgn=div8

Standard Numbers 209 Seat Belt Assemblieshttp://www.ecfr.gov/cgi-bin/text-idx?SID=7d443eb75ceba033fed91e90f816b574&node=se49.6.571_1209&rgn=div8

Standard Number 210 Seat Belt Anchorage
http://www.ecfr.gov/cgi-bin/text-idx?SID=7d443eb75ceba033fed91e90f816b574&node=se49.6.571_1210__&rgn=div8

3.33 WHEELCHAIR SECUREMENT SYSTEM:

Wheelchair securement areas and systems shall fully comply with all applicable U.S. Department of Transportation's Americans with Disabilities Requirements.

Vendor is required to supply the description, warranty and literature information of this product upon delivery of each vehicle.

3.33.1 Vehicle shall be equipped with one (1) or two (2) wheelchair positions.

3.33.2 At each required wheelchair position a wheelchair securement system shall be provided to securely hold the wheelchair in the wheelchair position.

3.33.2 Provisions shall be made, in the wheelchair position area, to stow the straps and buckles off the floor when they are not in use. The stored straps shall not interfere with passenger movement or sitting space.

3.33.3 A Freedman Seating 3 Step Forward Facing Fold Down Double Seat, or equal, being high back seats with headrest that does not block passenger viewing, knee saver back for more hip to knee room, jig welded heavy duty tubular frames and seat blest are designed not to fall on the floor. shall be used in every wheelchair position for use by non-disabled persons when the securement system is not needed. When folded up, the seat shall not interfere with the use of the wheelchair positions by passengers in wheelchairs. An under-seat retractable seat belt shall be provided for each seated position.

3.33.4 The vendor shall provide with each vehicle upon delivery a pamphlet, brochure or similar literature describing and instructing the use of the wheelchair securement system and shall demonstrate to the recipient the proper method of using the system. Demonstration of the securement system must be performed to insure correct use of the system.

3.33.5 Each wheelchair station shall have a securement system fully complying with ADA requirements and capable of securing most common wheelchairs and other mobility aid devices. Each wheelchair space shall have at least six (6") inches in between each space for easy access of driver.

3.34 MOBILITY AID / OCCUPANT RESTRANIT SYSTEM

3.34.1 A restraint system shall be provided for the occupant of the wheelchair at each wheelchair position. The restraint system shall be a seat belt assembly permanently attached to the floor or side of the vehicle or to the wheelchair lock supports. The restraint system shall be capable of securing a passenger in all types of wheelchairs or Scooters, while the chairs are locked in position. The seat belt shall be at least eighty (80) inches long and shall be easily fastened and unfastened by the wheelchair occupant. Each seat belt shall be equipped with a retractor or other device, which keeps the seat belt webbing or strap off the floor when the seat belt is not in use. A complete retractable wheelchair and occupant restraint system with S- Hooks shall be installed at each wheelchair location. The system will have automatic belt retractors; tensioning knobs; and easy to use tension release mechanisms. The system shall be a Sure-Lok Titan AL712S-4C; Q-Straint QRT Deluxe; Secura brand, or equal with the brand appropriate L-Track System to be used.

3.34.2 Wheelchair retractors shall be fully automatic, auto locking and self-tensioning.

3.34.3 **Retractors** shall automatically remove any slack in the webbing after they are secured to the wheelchair.

3.34.4 Retractors are self-retracting; therefore, no belts are left on the floor, keeping them cleaner and longer lasting.

3.34.5 Retractor shall have a "LOCKED" indicator tag and shall only be visible when the retractor is in the LOCKED mode assuring the retractor is not in the release condition when properly secured to the wheelchair.

3.34.6 Retractors shall be heavy duty with heat treated structural components and plated for superior corrosion resistance.

3.34.7 Retractors shall have a chrome plated metal cover for long lasting protection.

3.34.8 Retractors shall have BLUE webbing and the occupant restraints shall be of a contrasting color for easy identification in the field. Retractors shall be designed to be low profile to fit under most wheelchair foot rests.

3.34.9 Retractors shall be equipped with anchoring points for the attachment of the occupant restraint lap belts.

3.34.10 Retractors shall be able to be used with a variety of shoulder/lap belt combinations.

3.34.11 Retractors shall have manual knobs for additional tightening if needed.

3.34.12 Retractor shall be able to secure a wheelchair with one hand in as little as 10 seconds.

3.34.13 Retractors shall have a warranty period of 3 years and shall have a manufacturing label to identify the part number and date of manufacture for easy traceability.

3.34.14 Retractors, occupant restraints and anchoring equipment shall be installed in accordance with the manufacturer's installation instructions and recommendations.

3.34.15 Medium-Duty Series L-Track with flanges, mounting holes and clear anodized finish to be used, like FE-748-100-PD4C track with end caps, or Equal, floor anchoring product for wheelchair Tie-Downs and Occupant restraint systems.

3.34.16 The seams between the flooring and the track need to be treated to ensure that no moisture can get to the track to cause track deterioration.

3.34.17 Track and securement system need to comply with manufacturer's recommendations regarding using the same manufacturer's track and securement systems.

3.34.18 Vendor shall provide **four (4) each of sixteen inch (16") quick straps** for each securement location.

3.34.19 The retractors shall be designed to be low profile to fit under most wheelchair footrests.

3.34.20 Retractors and occupant restraints shall meet or exceed but not limited to the following specifications:

30mpg/20g Impact Test Criteria per SAE J2249
http://standards.sae.org/j2249_199901/

ISO 10542
http://www.iso.org/iso/catalogue_detail.htm?csnumber=60372

Canadian Z605
http://www.scc.ca/en/standardsdb/standards/6595

National Standards for School Buses
http://www.nasdpts.org/ncstonline/

ADA (49 CFR Part 38)
https://www.law.cornell.edu/cfr/text/49/part-38

FMVSS 209
https://www.law.cornell.edu/cfr/text/49/571.209

FMVSS 222
https://www.law.cornell.edu/cfr/text/49/571.222

FMVSS 302
https://label.averydennison.com/content/dam/averydennison/lpm-responsive/europe/english/documents/product-overviews/product/automotive-electronics-industrial/automotive/quick-facts-fmvss-302-en.pdf

3.35 MISCELLANEOUS ADDITIONS

3.35.1 Each vehicle shall be equipped with driver air bag,

3.35.2 Each vehicle shall be equipped with a sun visor for driver to pivot to cover their doors.

3.35.3 **Fresnel Lens:** Each vehicle shall be equipped with a large Fresnel flat, wide-range lens, approximately 11"x14", ready for installation / placement by the purchaser upon delivery.

3.35.4 Provide and install Angel Trax Hybrid Vault DVR system using 6 dome

cameras or equal. Equal having dual 500GB solid state hard drives, six audio/video channels, and SD card backup feature. System to be installed in a secure locked box with two (2) keys in an easy accessible area

3.36 DUAL PURPOSE SAFETY VENT

3.36.1 Each vehicle shall be equipped with a five (5) way, 23" X 23" minimum vent / escape hatch, Transpec Model 1975 or 1122, or Equal (as defined by FMVSS 327, see link below), dual purpose safety vent capable of being used as a multi-position roof ventilation and as an emergency exit.

http://www.ecfr.gov/cgi-bin/text-idx?SID=7d443eb75ceba033fed91e90f816b574&node=se49.6.571_1217&rgn=div8

3.37 EMERGENCY/SAFETY EQUIPMENT

3.37.1 **First Aid Kit** - First-Aid Kit shall comply with United States Department of Labor, Occupational Safety & Health Administration's minimal acceptable number and type of first-aid kits required under paragraph (d)(2) of the logging standards. (See link below) First-aid kits shall be stored in storage compartment or mounted so as to provide for access in the event of an accident, away from foot traffic.

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9863

3.37.2 Kit shall be housed in a polypropylene or metal box which contains at least the following items:

3.37.2.1 Instant Cold Pack (1)

3.37.2.2 Certicaine or Burn Spray (1 oz.)

3.37.2.3 1" x 3" Adhesive Bandages, twenty-five (25)

3.37.2.4 3/4" x 3" Adhesive Bandages, ten (10)

3.37.2.5 Extra Large Adhesive Bandages, ten (10)

3.37.2.6 3" x 3" Gauze Pads, ten (10)

3.37.2.7 Antiseptic Wipes, ten (10)

3.37.2.8 Alcohol Prep Pads, twenty (20)

3.37.2.9 Ammonia Inhalants, ten (10)

3.37.2.10 2" x 6 yds. Gauze Bandage

3.37.2.11 1/2" x 2.5 yds. Adhesive Tape

3.37.2.12 Burn Ointment (1/8 oz.), four (4)

3.37.2.13 Insect Sting Swabs, four (4)

3.37.2.14 PVP Iodine Swabs, four (4)

3.37.2.15 Tweezers, one (1)

3.37.2.16 Scissors, one (1)

3.37.2.17 Safety Pins, five (5)

3.37.3 **Fire Extinguisher**– 5 lb. dry chemical fire extinguisher with a minimum of a 20-A:180-B: C rating shall be provided in vehicle and shall be mounted in an accessible compartment with a hinged door or on a vehicular-type quick access bracket away from foot traffic.

3.37.4 **Reflectors** – Three (3) bi-directional emergency reflective triangles conforming to requirements of FMVSS No. 125, Section 571.125 shall be secured in the storage compartment of the vehicle.

3.37.5 **Bloodborne Pathogen Protection Kit** - A 10-unit (minimum) kit housed in a polypropylene or metal box and containing at least the following items:

3.37.5.1 Gown/Cap (1)

3.37.5.2 Goggles (Eye Shield) (1)

3.37.5.3 Mask (1)

3.37.5.4 Three (3) Pairs of Protective, Disposable Gloves

3.37.5.5 Scraper (1) plastic, scoop to pick up biohazard fluids.

3.37.5.6 Crepe Towels two (2)

3.37.5.7 Antiseptic Towelettes, four (4)

3.37.5.8 Disinfectant Towelette, four (4)

3.37.5.9 Mouth to Mouth Barrier, one (1)

3.37.5.10 Scoop Bag, three (3)

3.37.5.11 Infectious Liquid Control Powder (2 oz.)

3.37.5.12 Red Bio-Hazard Bags with Ties, two (2)

3.37.6 **Web/Seat Belt Cutter**: A 5.5" X 3" Web/Seat Belt Cutter – shall be secured in a location accessible from the driver's seat.

3.37.7 **Two Mylar Blankets**: Two (2) folded, sealed and stored silver 80-85" x 50-70" Mylar disposable rescue blankets.

3.37.8 **Wool Blankets**: Two (2) wool blankets (62" X 80" each) shall be provided.

3.37.9 **Safety Vest**: A highly visible reflective safety vest to be worn by the driver in case of an emergency that makes the driver visible to evacuating passengers and other motorists.

3.37.10 **Wheel Chocks:** Each vehicle will be equipped with one (1) set of wheel chocks with storage.

3.37.11 Each vehicle shall be equipped with a 5 way 23"x 23" dual purpose safety vent, capable of being used as a multi-position roof ventilator and as an emergency exit in compliance with FMVSS 217 and 302.

FVMSS 217: https://www.law.cornell.edu/cfr/text/49/571.217

FMVSS 302:

https://label.averydennison.com/content/dam/averydennison/lpm-responsive/europe/english/documents/product-overviews/product/automotive-electronics-industrial/automotive/quick-facts-fmvss-302-en.pdf

3.38 MIRRORS

3.38.1 **Exterior:**

Two (2) nine and one half inch (9-1/2") x seven inch (7") rectangular minors with a four inch (4") x seven inch (7") convex adjustable diminishing mirror mounted below. Mirror head and rigid adjustable support shall be powder coated finish. Both mirrors shall be reinforced mounted breakaway mirrors. Bolts shall be of the heaviest grade to ensure from breaking or snapping. **Crossover mirrors are not acceptable.**

3.38.2 **Sun Visors**: Driver's sun visors shall be provided, unless a single visor is provided by OEM.

3.38.3 **Rear View Mirror:** The OEM rear view mirror shall be retained.

3.39 PASSENGER ASSISTS

Passenger assists shall be constructed of seamless stainless-steel tubular stock having an outside diameter of between 1.25 inches and 1.50 inches and shall be provided as specified below on all including Class A Non-accessible vehicle. Assists shall be securely installed to prevent passengers from moving or twisting the assists when grasped.

3.39.1 Assists shall be securely installed as inclined handrails 30 inches above the step treads on both sides of the passenger step well.

3.39.2 Passenger assists shall be provided as floor-to-ceiling vertical stanchions at the top of the steps at both sides of the step well and shall be fully padded above seat level operations.

3.39.3 Passenger assists shall be provided as over-head assists on both sides of and parallel to the center aisle for the full length of the passenger compartment except where they will substantially interfere with wheelchair operation.

3.39.4 Passenger assists shall be provided as vertical stanchions, padded above seat level, elsewhere within the vehicle, including the driver's barrier (see 6.7.1) and behind the rearmost passenger seats.

3.39.5 All stanchions shall have rubber fittings at top and bottom where the tube inserts into the anchor to provide more stability and vibratory wear resistance.

3.40 MODESTY PANELS

3.40.1 Sturdy modesty panels constructed of padded material complementing the interior trim shall be provided ahead of the forward row of seats on both sides the aisle. A full height 3/8" LEXAN translucent barrier shall be provided behind the driver's seat and above the modesty panel. **Location of modesty panel installation must be approved by the Division of Public Transit.**

3.41 RADIO INSTALLATION / VEHCILE COMMUNICATION

3.41.1 The vehicle shall be provided with adequate grounding material at roof level or at side level as directed for a radio antenna. Such material shall provide direct grounding to the main vehicle body frame.

3.41.2 A conduit or other path shall be provided for an unexposed antenna cable routing between the antenna mounting area and an area to be provided for installation of a mobile radio receiver within easy reach of the driver, together with the necessary wiring for a power supply.

3.41.3 Vendor shall supply a ground wire, loom (conduit) and pull wire. A power wire is not necessary.

3.41.4 Vehicle shall be equipped with the OEM's deluxe digital AM/FM/BT SYNC clock radio stereo with a 6-speaker system for the passengers. One (1) speaker shall be installed in the driver's door or driver's side of the dashboard.

3.42 UNSPECIFIED ACCESSORIES & FEATURES

3.42.1 All parts, equipment, accessories, material, design and performance characteristics not specified herein, but which are necessary to provide a complete unit, must be furnished with each unit and required to confirm to strength, quality of material, and quality of workmanship to those which are advertised and provided to the market in general by the unit industry. All parts and accessories advertised and regularly supplied as standard shall be included, except those which would represent duplication of these specified and except

those which, by specification, are not to be furnished. All standard safety features, required by Federal and State Law, shall be included. Vehicles must have all equipment found on the manufacturer's base model plus other equipment requirements, packages, items, etc. needed to meet the specifications.

3.43 STORAGE COMPARTMENT

3.43.1 A storage compartment capable of accommodating jumper cables, seat belt cutter, and other items shall be provided in the front header above the driver. The compartment will be provided with a latching or other mechanism to hold it in the open position.

3.43.2 **Bottom** hinged compartment doors will be provided with restraint straps to limit its movement to 90 degrees. **The Division of Public Transit must approve location and size.**

3.43.3 A storage box, when no room is available. Floor mounted to curbside of engine cover. **The Division of Public Transit must approve location and size.**

3.44 TRAINING

3.44.1 The Vendor shall, at its own expense conduct two (2) one day training sessions at two different locations between the hours of 8:00 a.m. to 5:00 p.m. Dates will be mutually agreed upon, with the option of additional training days, if necessary. The Division will arrange a venue and registration. The vendor will provide one or more qualified instructor(s) and materials. Instructors shall conduct schooling sessions which shall be designated to instruct the Recipient Agency's in-house driver training staff in proper and safe on-road operation of the vehicle, in operating characteristics and limitations of the vehicle, and identification and proper operation of all driver's controls. Instructors shall also conduct training sessions for maintenance instructors and qualified mechanics to give thorough and proper training in the maintenance and repair of all operating systems of the vehicle including: (1) power train, (2) electrical system, (3) heating, ventilation and air conditioning system, (4) braking and air system, and (5) wheelchair lift and securement systems. The Vendor shall also provide visual and other teaching aids for use by each Recipient Agency's own staff.

3.45 VEHICLE CLASSES

3.45.1 **Class A:** **Non-Accessible Vehicle** – A vehicle having at least (15) fixed forward facing seats (doubles/singles). High back seating required at rear row and meet all requirements plus Paratransit Package. The Division of Public Transit shall approve the proposed seating configuration.

WHEELBASE	156" Minimum
REAR AXLE	Dual Rear Wheel
GVWR	11,500 Maximum

GAWR, FRONT	4,360 LBS.
GAWR REAR	7,275 LBS.
TIRE	205/75/R16 All Season Tires
WIDTH (MAXIMUM)	88'
LENGTH (MAXIMUM)	342"
HEIGHT	114"
HEIGHT, INTERIOR (MINIMUM)	79"
TURNING RADIUS (OUTSIDE BODY CORNER)	25' 1"
PASSENGER HEAT	1 x 35,000 BTU
PASSENGER A/C	53,000 BTU, dual compressors Separate from the Dash
ENGINE TYPE	Gas
ENGINE CAPACITY	V-6 Minimum 310 Hp
SPARE TIRE	Loose
BATTERY	Dual
FAST IDLE	Yes
CURBSIDE EMERGENCY WINDOWS	1 Minimum
STREETSIDE EMERGENCY WINDOWS	2 Minimum

ALTOONA 7 YEAR/200,000 MILE DURABILIT TEST

Paratransit Package:

One set of Tire Traction Chains of the appropriate size shall be provided for each vehicle. Chains will be secured in the vehicle at allocation approved by the Division of Public Transit.

Jumper cables of stranded copper, 4-6 gauge, and seven (7) feet minimum length shall be secured n the storage compartment of the vehicle.

One set of Vehicle Jack and Lug Wrench of the appropriate size to be provided per vehicle in a safe and secure location.

3.45.2 Class B Vehicles identified as Class B must have at least 11 forward facing Seats (double/singles) and one (1) wheelchair positions and meet all mandatory requirements plus Paratransit Package.

3.45.3 Class C Vehicles identified as Class C must have at least 11 forward facing seats (double/singles) and two (2) wheelchair positions and meet all mandatory requirements plus Paratransit Package.

3.45.4 Class D Vehicle identified as Class D must have Front lift option, and have 3 wheelchair Positions with 2 forward facing seats, Singles per attached floor plan and meet all mandatory requirements plus Paratransit Package

3.45.5 Class E Vehicles identified as Class D must have at least 11 forward facing seats (double/singles) and one (1) wheelchair positions and meet all mandatory requirements plus Fixed Route Package.

Fixed Route Package This package will contain front and side digital destination signs, Passenger Signaling System, PA system, fare box provision and strobe light as described below.

Front and side digital destination signs shall be provided. A lightweight all LED sign that provides a wide viewing angle for visibility at day or night with automatic brightness adjustment. Signs must be compatible with Windows 95/98/200/XP or NT programming platform for easy transit system use. The signs must come with all accessories in order for the transit system to change routes daily if needed, including an operator control unit (OCU) with PC card port for uploading data will be required for each vehicle along with a 12V DC converter. The destination signs must meet all ADA standards and must have a minimum operating life of 100,000 hours. The sign shall be fastened to the body of the vehicle on the top and bottom of each destination sign to secure and eliminate all movement. Brackets should be used in addition to normal installation procedures to secure signs at the top and bottom. The Division of Public transit shall approve size and location of window.

Dimensions: front-All LED 14"x108" small pitch signs. Side-All LED 14"x72". All programmable software and hardware is to be provided. Customer support shall be proved.

Control panel for the signs shall be located at a position convenient for driver operation and shall be approved by the Division of Public Transit. Vendor shall submit details with bid.

Passenger signaling system with a pull cord stop request system and touch tape with buzzer at wheelchair positions shall be provided. The pull cord system shall be at height that individuals with disabilities can access the cord at seat level front to rear. Mobile PA system with a handheld mic, one external speaker, and two internal speakers shall be provided. PA system may be integrated into the radio system if it can be done without excessive slicing; otherwise, the system should be separate

Fare box provision require that the forward stanchion at the driver's shoulder shall be prewired for mounting of fare box with enough slack for the positioning of the fare box to be moved.

A protected or guarded clear lens strobe light shall be installed on top of the vehicle. The Division of Public Transit shall approve the type, the installation location, and the process.

3.45.6 Class F Vehicles identified as Class F must have at least 11 forward facing seats (double/singles) and two (2) wheelchair positions and meet all mandatory requirements plus Fixed Route Package as defined in Class E.

3.45.7 Class G Vehicles identified as Class G must have Front Lift Option, and three (3) wheelchair positions 2 Forward Facing Single Seats, plus Fixed Route Package defined in Class E.

3.45.8 Class H Vehicles identified as Class H must have at least 11 forward facing seats (double/singles) and one (1) wheelchair positions and meet all requirements and Fixed Route package defined in Class E and Full bus paint. The vendor shall supply a full-vehicle body paint for each vehicle ordered. Vendor must supply a sample paint chart prior to award. The West Virginia Division of Public Transit will select the colors for each vehicle to be painted.

3.45.9 Class I Vehicles identified as Class I must have at least 11 forward facing seats (double/singles) and two (2) wheelchair positions and meet all mandatory requirements plus Fixed Route Package defined in Class E and full bus paint defined in Class H.

3.45.10 Class J Vehicles identified as Class J must have Front Lift Option, and three wheelchair positions, 2 Forward Facing Singe Seats plus Fixed Route Package defined in Class E with full bus paint defined in Class H.

3.45.11 Class K Vehicles identified as Class K Vehicles identified as Class H must have at least 11 forward facing seats (double/singles) and one (1) wheelchair positions and meet all requirements and Fixed Route package defined in Class E and three quarter body paint with expanded graphics: The vendor shall supply three-quarter vehicle body paint for each vehicle ordered. Vendor must supply a sample paint chart with

bid. The West Virginia Division of Public Transit will select the colors for each vehicle to be painted.

3.45.12 Class L Vehicles identified as Class L must have at least 11 forward facing seats (double/singles) and two (2) wheelchair positions and meet all mandatory requirements plus Fixed Route Package defined in Class E and three quarter body paint with expanded graphics.

3.45.13 Class M Vehicles identified as Class M must have Front Lift Option, and three wheelchair positions, 2 forward facing single seats, plus Fixed Route Package defined in Class E and three quarter body paint with expanded graphics.

3.45.14 Class N Vehicles identified as Class N Vehicles identified as Class H must have at least 11 forward facing seats (double/singles) and one (1) wheelchair positions and meet all requirements and Fixed Route package defined in Class E vehicle skirt paint. The body skirt and chassis' low cab of the vehicle shall be painted. The West Virginia Division of Public Transit will select the colors for each vehicle to be painted.

3.45.15 Class O Vehicles identified as Class O must have at least 11 forward facing seats (double/singles) and one (1) wheelchair positions and meet all requirements and fixed route package defined in Class D and vehicle skirt paint.

3.45.16 Class P Vehicles identified as Class P must have Front Lift Option, and three wheelchair positions, 2 forward facing single seats, plus Fixed Route Package defined in Class E and vehicle skirt paint.

3.45.17 OPTION A1 This Option is to add an approved (by the Division) safety barrier to any of the Classes as defined above. This barrier is to be made of a heavy duty, clear, plexi-type material, no less than 1/8" thick, with a solid frame work and fasteners, that can easily be attached to the vehicle at the factory with minimal vehicle modification. This barrier must extend from the floor to as close to the ceiling as possible and be able to open inwards towards the bus for the driver to access the bus if necessary. Also, this barrier must not impede the driver's ability to operate all functions of the bus.

3.46 ADDITIONAL REQUIREMENTS APPLICABLE TO ALL VEHICLES

3.46.1 Summary of Items to Be Provided Upon Delivery

By the time of delivery, the following items shall be furnished by the successful Vendor shall supply for each vehicle:

3.46.2 All warranty verification vouchers, certificates or coupons.

3.46.2.1 Each vehicle recipient current model year or per Transit Authority per year.

Parts manuals Chassis and Body
Service manuals
Wiring schematics of auxiliary circuits and all other necessary prints for the maintenance of the vehicle and
Operations manual Chassis and Body.

3.46.2.2 Completely filled fuel tank or tanks.

3.46.2.3 Protection to 20° F below zero with permanent type antifreeze.

3.46.2.4 A vehicle(s) free of dealer signs and emblems.

3.46.2.5 Assurance of compliance with manufacturer's pre-delivery service, lubed, serviced and ready for immediate service.

3.46.2.6 A vehicle(s) which is clean, (If delivery of the vehicle occurs during the winter months of October through March, the vehicle shall be washed directly prior to delivery at Kanawha Valley

Regional Transportation Authority to ensure that the vehicle is free of dirt and salt deposits)

3.46.2.7 Operation, maintenance and warranty information for any add on equipment will be provided upon delivery if available to the Vendor.

3.46.2.8 Original vehicle chassis manufacturer's factory sticker itemizing equipment on the vehicle.

3.46.2.9 A certified weight slip showing front and drive axle weights for the vehicle at its curb weight.

3.46.2.10 Proof of Alignment.

3.46.2.11 Vehicle shall comply with and conform to the State of West Virginia Motor Vehicle Inspection Law and shall have the current inspection sticker attached to the windshield.

3.46.2.12 Proof of Front-End Alignment

3.47 TITLE

3.47.1 Adequate documents for securing the vehicle in the name of the Division of Public Transit or recipient agency shall be provided to the Division of Public Transit at least 10 working days prior to the delivery of each vehicle. The Division of Public Transit will supply with each release order the agency names(s) for titling document. The Vendor warrants that the title shall pass to the Division of Public Transit free and clear of all liens, mortgages and encumbrances, financing statements, security agreements, claims and demands of any character.

3.47.2 According to WV State Code §5A-3-4(8), vendor agrees that liquidated damages shall be imposed at the rate of $10 per calendar day for failure to provide the titling documentation at the time of vehicle delivery. This clause shall in no way be considered exclusive and shall not limit the State or agency's right to pursue any other additional remedy to which the State or agency may have legal cause for action including further damages against the vendor.

3.47.3 All documentation (Certificate of Origin, Delivery/Odometer Statement, Etc.) in original form must be mailed or hand carried to:

3.47.4 WV Division of Public Transit
1900 Kanawha Blvd., East
Building 5, Room 650
Charleston, WV 25305

4 QUALITY ASSURANCE

4.1 QUALITY ASSURANCE ORGANIZATION

The Vendor shall establish and maintain an effective quality assurance organization. It shall be a specifically defined organization and should respond directly to the Vendor's management. The Vendor's complete quality assurance program for purchased components and in-plant inspection procedures shall be available for review by the Division of Public Transit prior to award.

Control

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

Authority and Responsibility

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

4.2 QUALITY ASSURANCE ORGANIZATION FUNCTIONS

The quality assurance organization shall include the following minimum functions.

Work Instructions

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

Records Maintenance

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

Corrective Actions

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

4.3 STANDARDS AND FACILITIES

Configuration Control

The Vendor shall maintain drawings and other documentation that completely describe a quality vehicle that meets all of the options and special requirements of this procurement. The quality assurance organization shall verify that each vehicle is manufactured in accordance with these controlled drawings and documentation.

Measuring and Testing Facilities

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

Production Tooling as Media of Inspection

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

Equipment Use by Division of Public Transit's Inspector(s)

The Vendor's gauges and other measuring and testing devices shall be made available for use by the Division of Public Transit's inspector(s) to verify that the vehicles conform to all specification requirements. If necessary, the Vendor's personnel shall be made available to operate the devices and to verify their condition and accuracy.

4.4 CONTROL OF PURCHASES

The Vendor shall maintain quality control of purchases.

Supplier Control

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

Purchasing Data

The Vendor shall verify that all applicable specification requirements are properly included or referenced in purchases of articles to be used on vehicles.

4.5 MANUFACTURING CONTROL

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

Completed Items

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

Non-conforming Materials

The quality assurance organization shall monitor the Vendor's system for controlling non-conforming materials. The system shall include procedures for identification, segregation, and disposition.

Statistical Techniques

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

Inspection Status

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

4.6 INSPECTION SYSTEM

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

Inspection Stations

Inspection stations shall be at the best locations to provide for the work content and characteristics to be inspected. Stations shall provide the facilities and equipment to inspect structural integrity; electrical; hydraulic; through floor securements; OEM defects; coverage of the undercoating; and other components and assemblies for compliance with the design requirements.

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

prior to final paint touch up, vehicle prior to road test, and vehicle final road test completion.

The manufacturer shall provide on its premises a suitable hoist for a complete inspection of the underside of the vehicle. **A pit is not acceptable.**

Inspection Personnel

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

Inspection Records

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

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

Quality Assurance Audits

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

Division of Public Transit's Inspector(s)

The Division of Public Transit may be represented at the Vendor's plant by their inspectors, they shall monitor, in the Vendor's plant, the manufacture of vehicles built under this procurement. The Division of Public Transit's inspectors shall be authorized to release the vehicles for delivery. Upon request to the quality assurance supervisor, inspectors shall have access to the Vendor's quality assurance files related to this procurement. These files shall include drawings, material standards, parts lists, inspection processing and reports, and records of defects. The presence of these inspectors in the plant shall not relieve the Vendor of its responsibility to meet all of the requirements of this procurement.

The Division of Public Transit's inspectors shall not have the authority to stop the Vendor's production line until any apparent problem area of major significance that arises to warrant such actions is fully discussed with the Vendor's top management.

4.7 SERVICE AND PARTS

The Vendor shall state on **Bid Form #1** the representative(s) responsible for assisting the Recipient Agencies, as well as, the location of the nearest distribution center(s) which shall furnish a complete supply of parts and components for the repairs and maintenance of the vehicles to be supplied.

4.8 Materials and Workmanship

4.8.1 Vendor shall incorporate in the proposed vehicle(s) the latest technological achievements consistent to achieving maximum service live and superior attractiveness of appearance.

4.8.2 Vehicle(s) shall be delivered in new, first-class condition, complete and ready for operation on the street and the Vendor shall assume all responsibility and liability incident to said delivery.

4.8.3 All materials used in the construction of vehicle(s) and in all its parts and accessories shall conform to A.S.T.M., S.A.E., or similar associations published standards, and be of top quality.

4.8.4 The vehicle(s) shall be built with suitable and easily accessible compartments provided for all apparatus, sound deadening insulation, wherever needed, and all operating devices so mounted as to reduce and keep all noise and vibration to an absolute minimum.

4.8.5 Vendor shall assume responsibility for all material and accessories used in vehicle(s) and their proper installation and their warranty, whether the same is manufactured by the Vendor or purchased ready-made from a source outside the Vendor's company.

4.9 Spare Parts –The Vendor shall guarantee the availability of replacement parts for these vehicles for at least a seven (7) year period after the date of acceptance. Spare parts shall be interchangeable with the original equipment and shall be manufactured in accordance with the quality assurance provision of this contract.

4.10 Engineers – The Vendor shall, at its own expense, have a competent engineering representative(s) available on request to assist the Recipient Agencies staff in the solution of engineering or design problems within the scope of the specifications that may arise during the warranty period.

4.11 Documents – The Vendor shall keep maintenance manuals available for a period of ten (10) years after the date of acceptance of the vehicles procured under this contract. The Vendor shall also keep parts books up to date for a period of ten (10) years. The supplied maintenance and operators' manuals shall

incorporate all equipment ordered on the vehicles covered by this procurement.

4.12 WARRANTIES

The Vendor has an obligation to ensure that the entire vehicle is covered by a warranty. The Vendor shall make every effort to assure that all obligations defined under all warranties applicable to the vehicle or any subpart of the vehicle are unfilled.

4.12.1 WARRANTY REQUIREMENTS

Warranties in this document are in addition to any statutory remedies or warranties imposed on the Vendor. Consistent with this requirement the Vendor warrants and guarantees to the Division of Public Transit each complete vehicle, and specific subsystems and components as follows:

4.12.2 Complete Vehicle

The vehicle is warranted and guaranteed to be free from defects and related defects for three (3) years or 36,000 miles, whichever comes first, beginning on the first day after the date of final acceptance of each vehicle. During this warranty period, the vehicle shall maintain its structural and functional integrity. The warranty is based on regular operation of the vehicle under the operating conditions prevailing in the Recipient Agencies locales.

4.12.3 Warranty of Basic Vehicle Structure

The Vendor shall warranty the frame and suspension members for three (3) years or 36,000 miles, whichever comes first. This warranty shall not cover air bags, leveling valves, springs or other normal wearing parts. The Vendor is not liable for warranty if the Recipient Agencies voids the warranty as outlined in this Section. If the frame or suspension fails or shows indication of imminent failure, the Recipient Agencies will immediately notify the Vendor of said defect. Within ten (10) calendar days the Vendor will inform the Recipient Agencies on how the Vendor will repair the vehicle. Repair of frame and suspension failures will be the responsibility of the Vendor. Within fifteen (15) calendar days from notification of the defect the Vendor shall begin the repair of the frame and suspension defects. If the vehicle with the reported frame and suspension defect is out of revenue service for more than twenty (20) calendar days because of the reported defect, the Vendor will have to either provide a substitute vehicle of equal seating capacity with wheelchair lift (if applicable) of the same age or newer than the vehicle with the defect or directly reimburse the Recipient Agencies the cost of leasing a substitute vehicle. The maximum daily reimbursement will be $300. The Vendor will have to continue to provide a substitute vehicle or reimburse the Recipient Agencies until the defect is completely repaired.

4.12.4 Warranty Locations

A description of how and by whom warranty service is to be provided in four (4) areas of West Virginia is to be included in the bid proposal. The information should cover both mechanical and body work. All bidders shall provide vendors who will do the warranty of both chassis and body, including vehicle body, air conditioning and wheelchair lifts. The four warranty service areas of West Virginia include: The Northern Panhandle, Eastern Panhandle, Central West Virginia and Southern West Virginia.

4.12.5 Subsystems and Components –

The subsystems and components are warranted and guarantees to be free from defects and related defects as follows:

ENGINE: Three (3) years or 36,000 miles, whichever comes first.

TRANSMISSION: Three (3) years or 36,000 miles, whichever comes first.

DRIVE AXLE: Three (3) years or 36,000 miles, whichever comes first.

BRAKE SYSTEM: Excluding friction material, three (3) years or 36,000 miles, whichever comes first.

BASIC BODY STRUCTURE INTEGRITY: Three (3) years or 36,000 miles, whichever comes first.

AIR CONDITINING SYSTEM: Two (2) years or two (2) operating seasons, whichever is greater.

WHEELCHAIR LIFT SYSTEM: Two (2) years.

ALL ADD ON COMPONENTS: Two (2) years, unlimited miles.

4.13 VOIDING OF WARRANTY

The warranty shall not apply to any part or component of the vehicle that has been subject to misuse, negligence, accident, or that has been repaired or altered in any way so as to affect adversely its performance or reliability, except insofar as such repairs were in accordance with the Vendor's maintenance manuals and the workmanship was in accordance with recognized standards of the industry. The warranty shall also be void if the Recipient Agencies fails to conduct normal inspections and scheduled preventative maintenance procedures as recommended in the Vendor's maintenance manuals.

4.14 EXCEPTIONS TO WARRANTY

The warranty shall not apply to scheduled maintenance items, and items such as tires and tubes, nor to items furnished by the Recipient Agencies such as radios, fare boxes and other auxiliary equipment, except insofar as such equipment may be damaged by the failure of a part or component for which the Vendor is responsible.

4.15 DETECTION OF DEFECTS

If the Recipient Agency detects a defect within the warranty periods defined in Section 7.12.3 of this Part, it shall promptly notify the Vendor's representative five (5) working days after receipt of notification, the Vendor's representative shall either agree that the defect is in fact covered by warranty, or reserve judgment until the subsystem or component is inspected by the Vendor's representative or is removed and examined at the Recipient Agencies property or at the Vendor's plant. At that time, the status of warranty coverage on the subsystem or component shall be mutually resolved between the Recipient Agency and the Vendor. Work necessary to affect the repairs defined in Section 5.11 of this Part shall commence within ten (10) working days after receipt of notification by the Vendor.

4.16 SCOPE OF WARRANTY REPAIRS

When warranty repairs are required, the Recipient Agencies and the Vendor's representative shall agree within five (5) days after notification on the most appropriate course for the repairs and the exact scope of the repairs to be performed under the warranty. If no agreement is obtained within the five (5) day period, the Recipient Agencies reserves the right to commence the repairs in accordance with Section 7.12.

4.17 FLEET DEFECTS

A fleet defect shall be defined as the failure of any identical items covered by the warranty and the specifications herein and occurring in a twenty percent (20%) portion of the vehicles purchased under this contract.

The Vendor shall correct a fleet defect under the warranty provision. After correcting defect, the Vendor shall promptly undertake and complete a work program reasonably designed to prevent the occurrence of the same defect in all other vehicles purchased under this contract. The work program shall include inspection and/or correction of the potential or defective parts in all of the vehicles purchased under this contract. The warranty on items determined to be fleet defects shall be extended for the time and/or miles of the original warranty. This extended warranty shall begin on the date of the repair/ replacement for the corrected item.

4.18 REPAIR PROCEDURES

4.18.1 Repair Performance

At its option, the Division of Public Transit, or its designated representative, may require the Vendor, or its designated representative, to perform warranty covered repairs that are clearly beyond the scope of Recipient Agencies capabilities. All warranty work done by Recipient Agencies personnel will be reimbursed by the Vendor.

4.18.2 **Repairs by Vendor**

If the Recipient Agencies requires the Vendor to perform warranty covered repairs, the Vendor's representative must begin the work necessary to make repairs, within ten (10) working days after receiving notification of a defect from the Recipient Agencies. The Recipient Agencies shall make the vehicle available to complete repairs timely with the Vendor's repair schedule.

The Vendor will provide, at its own expense, all spare parts, tools and space required to complete repairs. At the Recipient Agencies option, the Vendor may be required to complete repairs. At the Recipient Agencies option, the Vendor may be required to remove the vehicle from Recipient Agency's property while repairs are being affected. If the vehicle is removed from Recipient Agency's property, repair procedures must be diligently pursued by the Vendor's representative.

4.18.3 Repairs by Recipient Agencies

4.18.3.1 Parts Used

If the Recipient Agency performs the warranty covered repairs, it shall correct or repair the defect and any related defects using Vendor specified spare parts available from its own stock or those supplied by the Vendor specifically for this repair. Monthly, or at a period to be mutually agreed upon, reports of all repairs covered by this warranty shall be submitted by the Recipient Agency to the Vendor for reimbursement or replacement of parts. The Vendor shall provide forms for these reports.

4.18.3.2 Vendor Supplied Parts

The Recipient Agency may request that the Vendor supply new parts for warranty covered repairs being performed by the Recipient Agency. These parts shall be shipped prepaid to the Recipient Agency from any source selected by the Vendor within 10 (ten) working days of receipt of the request for said parts.

4.18.3.3 Defective Components Return

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

4.18.3.4 Reimbursement for Labor

The Recipient Agencies shall be reimbursed by the Vendor for labor. The amount shall be determined by multiplying the number of man-hours actually required to correct the defect by the current per hour, straight wage rate, plus 53 percent fringe benefits, plus the cost of towing in the vehicle if such action was necessary and if the vehicle was in the normal service area.

These wage and fringe benefit rates shall not exceed the rates in effect in the Recipient Agencies service garage at the time the defect correction is made.

4.18.3.5 **Reimbursement for Parts**

The Recipient Agencies shall be reimbursed by the Vendor for defective parts and for parts that must be replaced to correct the defect. The reimbursement shall be at the invoice cost of the part(s) at the time of repair and shall include taxes where applicable and 10 percent handling costs.

4.18.4 **WARRANTY AFTER REPLACEMENT/REPAIRS**

If any component, unit, or subsystem is rebuilt or replaced by the Vendor or by the Recipient Agencies personnel, with the concurrence of the Vendor, the subsystem shall have the unexpired warranty period of the original subsystem.\

5. CONTRACT AWARD

5.1 **Contract Award:** The Contract is intended to provide Agencies with a purchase price on all Contract Items. The Contract shall be awarded to the Vendor that provides the Contract Items meeting the required specifications for the lowest overall total cost as shown on the Pricing Pages.

5.2 The Federal Transit Administration's "Third Party Contracting Circular" (4220.1F), requires grantees (the DPT) to conduct procurements in a manner that prohibits the use of statutorily or administratively imposed In-State or local geographical preferences in the evaluation of bids or proposals, except in those cases where applicable Federal statutes expressly mandate or encourage geographic preference.

Therefore, the In-State vendor preference per West Virginia Code 5A-3-37 shall not apply to this procurement since it is partially or entirely funded with Federal Transit Administration funds.

6. PRICING PAGE

6.1 Vendor should complete Exhibit A Pricing page by listing the unit price for each vehicle Class, multiplying the unit price by the estimated quantity to arrive at a total. All prices quoted are to be in whole dollars and include delivery charges.

6.2 Exhibit A Pricing Page contains a list of the Contract Items and estimated purchase volume. The estimated purchase volume for each item represents the approximate volume of anticipated purchases only. No future use of the Contract or any individual item is guaranteed or implied. Vendor should complete the Pricing Pages in their entirety as failure to do so may result in Vendor's bids being disqualified.

6.3 The Pricing Pages contain a list of the Contract Items and estimated purchase volume. The estimated purchase volume for each item represents the approximate volume of

anticipated purchases only. No future use of the Contract or any individual item is guaranteed or implied.

6.4 Vendor should electronically enter the information into the Pricing Pages through wvOASIS, if available, or as an electronic document. In most cases, the Vendor can request an electronic copy of the Pricing Pages for bid purposes by sending an email request to the following address: Melissa.K.Pettrey@wv.gov

6.5 Additional agencies, as noted, could purchase from any awarded contract resulting from this bid. Specified deliverables would be as originally advertised, competed, evaluated and awarded.

7. BID REQUIREMENTS

7.1 All bids must remain in effect for the life of the contract except if vehicle chassis manufacturer issues a model year chassis price increase. A request for a model year chassis price increase is the only price increase that will be considered.

7.2 To request a new model year chassis price increase, the request shall be submitted to the Division of Public Transit. Documentation from the actual chassis manufacturer of the chassis price increase is required to be included in the request or the price increase will not be considered.

7.3 **The bid shall be submitted in binder form with each section properly labeled with the required information attached to each section. Two (2) copies of the bid in binder form shall be sent to the Purchasing Division with one (1) clearly marked for the West Virginia Division of Public Transit.**

8. VENDOR QUALIFICATIONS

The Vendor must be a person, firm or corporation that:

8.1 Has in operation, a manufacturing plant adequate to assure delivery of all equipment within the time specified under the contract.

8.2 Has adequate engineering and service personnel, or has the capability to have such personnel, to satisfy any engineering or service problems that may arise during the warranty period.

8.3 Has similar vehicles in operation in comparable service for a minimum of one (1) year. The Vendor may be required to furnish a customer list indicating the number of units and dates in service during or equal period of during the bid evaluation period in addition to the requirements under Section 9.2 of these specifications.

8.4 In lieu of this requirement, certified results of a shaker test may be requested by the Division of Public Transit during the or equal period to prove the proposed vehicles to be capable of operating the service contemplated for these vehicles.

8.5 Has the necessary facilities and financial resources to complete the contract in a satisfactory manner within a required time. The Division of Public Transit shall have the right to conduct a pre-award survey of each Vendor.

8.6 Has complete and accurate maintenance, parts and operators' manuals.

9. MISCELLANEOUS ITEMS TO BE SUPPLIED WITH BID

9.1 Federal Transit Administration (FTA) Terms and Conditions and Certifications: Current FTA Terms and Conditions are included in this bid and must be met. Certifications for Vehicle Purchases, Federal Motor Vehicle Safety Standards, Debarred Bidders, Disadvantaged Business Enterprise Manufacturers, and Buy America Rolling Stock, Restrictions on Lobbying and Vehicle Testing certifications are provided on Bid Form Pages #1 - #10. **All bid forms provided shall be properly completed and furnished by the Vendor as part of the bid. Failure to submit any of these forms shall disqualify the bid.**

9.2 Pre-Award Review – The Vendor shall submit the following items and any further items if requested.

9.2.1 Complete mechanical description of vehicle, its construction and equipment including manufacturer's model name and/or number. Equipment to be described shall include the wheelchair lift, air conditioner, flip-up seat, and wheelchair securement system, if these items are specified herein.

9.2.2 Proposed interior floor plans, showing detailed dimensions including the location of the wheelchair securement system and stanchions if specified.

9.2.3 Curb weight (empty weight) and gross vehicle weight rating (GVWR) of vehicle.

9.2.4 Samples or paint charts of available exterior paint colors and vinyl.

9.2.5 Description of the warranties the Vendor proposes to furnish for the vehicle and for required ancillary equipment, including a listing of sites where warranty work will be performed.

9.2.6 The location of the nearest depot which will furnish a complete supply of parts and components for the repair and maintenance of the vehicle to be supplied.

9.2.7 Description of the undercoating/rustproofing system, including warranty to be provided.

9.2.8 Identification of the specific location of the place of assembly in the case of a vehicle or the place of a conversion in the case of a converted van. If the location changes, the Vendor must notify the Division of Public Transit, in which case the Division of Public Transit reserves the right to perform an inspection similar to the pre-award inspection identified. If the results of the inspection are unsatisfactory, the Division of Public Transit may begin the contract termination process through the WV State Purchasing Division.

9.2.9 A list of five (5) users names, addresses, and telephone numbers who have been provided similar equipment by the Vendor. If the Vendor has not

provided similar equipment, the Division of Public Transit reserves the right to determine the acceptability of the equipment proposed by the Vendor.

9.3 Disadvantaged Business Enterprise (DBE)

9.3.1 All U.S. Department of Transportation, Federal Transit Administration (FTA) assisted contracts between FTA, the Division of Public Transit, and any Vendor shall include the following language:

9.3.2 **Policy** – It is the policy of the U.S. Department of Transportation that Disadvantaged Business Enterprises (DBE) as defined in 49 CFR Part 26 that DBEs shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with federal funds under this agreement. Consequently, the DBE requirements of 49 CFR Part 26 apply to the agreement.

9.3.3 **DBE Obligation** – The recipient or its Vendor agrees to ensure that DBEs as defined in 49 CFR Part 26 shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with federal funds under this agreement. Consequently, the DBE requirements of 49 CFR Part 26 apply to the agreement. In this regard, all recipients or Vendors shall take all necessary and reasonable steps in accordance with 49 CFR Part 26 to ensure that DBEs have the maximum opportunity to compete for and perform contracts. Recipients and their Vendors shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of U.S. Department of Transportation-assisted contracts.

9.3.4 The manufacturer of transit vehicles shall certify that it has complied with the requirements of 49 CFR Part 26 (March 4, 1999), Section 26.49, and "Transit Vehicle Manufacturers". This certification shall be submitted with responses to this solicitation on **Bid Form #3.**

9.3.5 The Vendor shall make good faith efforts to replace a DBE subcontractor that is unable to perform, with another DBE subcontractor.

9.3.6 Where the Vendor is found to have failed to exert sufficient reasonable and good faith efforts to involve DBEs in the work provided, the Division of Public Transit may declare the Vendor noncompliant and in breach of contract.

9.3.7 The Vendor will keep records and documents for a reasonable time following performance of this contract to indicate compliance with the Division of Public Transit DBE Program. These records and documents will be made available at reasonable times and places for inspection by any authorized representative of the Division of Public Transit and will be submitted to the Division of Public Transit upon request.

9.3.8 The awarded Vendor agrees to include the following assurance in every subcontract it signs relevant to this contract: The Vendor and each Third Party Subcontractor must not discriminate on the basis of race, color, national origin, or sex in the award and performance of any FTA or U.S. DOT-assisted sub-agreement, third party contract, and third party subcontract, as applicable, and the administration of its DBE program or the requirements of 49 CFR Part 26.

The Vendor and each third-party subcontractor must take all necessary and

reasonable steps under 49 CFR Part 26 to ensure nondiscrimination in the award and administration of U.S. DOT-assisted sub-agreements, third party contracts and third-party subcontracts, as applicable.
Failure by the Vendor and any of its third-party contracts or third-party subcontractors to carry out the requirements of this subparagraph 13.d (4) (b) is a material breach of this contract, and

The following remedies, or such other remedy as the Division of Public Transit deems appropriate, include, but are not limited to, withholding payments, assessing sanctions. liquidated damages; and/or disqualifying the Vendor from future bidding as non-responsible.

9.5 Civil Rights Requirements –

In connection with the execution of this contract, the following requirements will apply:

9.5.1 Nondiscrimination. In accordance with Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 2000d, *et seq*., Age Discrimination Act of 1975, as amended, 42 U.S.C. §6101, *et. seq*., Americans with Disabilities Act of 1990, as amended, 42 U.S.C. § 12101, *et. seq*., and Federal transit law at 49 U.S.C. §5332, as amended, the Vendor agrees that it will not discriminate against any employee or applicant for employment on the basis of race, color, religion, national origin, sex, age or disability. In addition, the Vendor agrees to comply with any other applicable Federal statutes that may be signed into law or regulations that may be promulgated.

9.5.2 Equal Employment Opportunity. The following equal employment opportunity requirements apply to the underlying contract:

9.5.2.1 Race, Color, Religion, National Origin, Sex, Disability, Age, Sexual Orientation, Gender Identity or Status as a Parent. In accordance with Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 2000e, *et seq*., and Federal transit laws at 49 U.S.C. § 5332, the Vendor agrees to comply with all applicable equal employment opportunity requirements of the U.S. Department of Labor (US DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60 *et seq*., (which implement Executive Order Number 11246, "Equal Employment Opportunity", as amended by Executive Order Number 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Vendor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during their employment, without regard to their race, color, religion, national origin, sex, disability, age, sexual orientation, gender identity or status as a parent. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms or

compensation; and selection for training, including apprenticeship. In addition, the Vendor agrees to comply with any implementing requirements FTA may issue.

9.5.3 The Vendor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary, to identify the affected parties.

9.6 **Vehicle Testing** – The Vendor agrees to comply with 49 U.S.C. § 5318(e) and FTA's implementing regulation at 49 CFR Part 665 and shall perform the following:

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

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

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

9.6.5 Any bidder must submit to the Division FTA's Vehicle Testing Requirements Certification on **Bid Form #10**. Bids that are not accompanied by a completed certification must be rejected as non-responsive. **A copy of the vehicle testing report should be included with the bid if available.** This requirement does not apply to lower tier subcontractors.

9.7 **Buy America Certification** – Vendor agrees to comply with 49 U.S.C. § 5323(j) and 49 CFR Part 661, which provides that Federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 CFR 661.7 and include, microcomputer equipment, software, and small purchases (currently less than $150,000) made with capital, operating, or planning funds. Separate requirements for rolling stock are set out at 49 CFR 661.11. Rolling stock not subject to a general waiver must be manufactured in the United States and have a 60 percent domestic content.

9.7.1. A bidder must submit to the Division the appropriate Buy America certification on **Bid Form #4** with all bids on FTA-funded contracts, except those subject to a general waiver. **Per FTA requirements, bids that are not accompanied by a completed Buy America certification must be rejected as non-responsive.** This requirement does not apply to lower tier subcontractors.

9.7.2. Should the Vendor be declared responsive and low bid, pursuant to Pre-Award and Post Delivery Audit Requirements, the Division will require the Vendor to submit documentation (prior to any award) that lists:

9.7.2.1 Component and sub-component parts of the rolling stock to be purchased identified by manufacturer of the parts, their country of origin and costs;

9.7.2.2 The location of the final assembly point for the rolling stock, including a description of the activities that will take place at the final assembly point and the cost of final assembly.

9.7.2.3 The Vendor shall submit one manufacturer's Federal Motor Vehicle Safety Standards (FMVSS) self-certification sticker providing information that the vehicle quoted complies with relevant FMVSS, or Manufacturer's certified statement that the contracted vehicles will not be subject to FMVSS regulations.

9.7.2.4 Vendor shall submit evidence that it will be capable of meeting the bid specifications.

9.7.3 As required by the Post Delivery Audit Requirement, any successful vendor will be required to furnish the following prior to any completed vehicle being placed into service or before any payment can be made:

9.7.3.1 Actual component and sub-component parts of the rolling stock provided, identified by manufacturer of the parts, their country of origin and costs; and

9.7.3.2 Actual location of the final assembly point for the rolling stock provided, including a description of the activities that took place at the final assembly point and the actual cost of final assembly.

9.8 <u>Debarment and Suspension</u> –

This contract will comply with the requirements of 2 CFR Part 180, subpart C as adopted and supplemented by U.S. DOT regulations at 2 CFR Part 1200. Vendor is required to submit **Bid Forms #6 & #7** with bid.

The Division will not enter into any arrangement to participate in the development or implementation of a contract with any Vendor that is debarred or suspended except as authorized by Executive Orders No. 12549, "Uniform Suspension, Debarment or Exclusion of Participant from Procurement or Non-procurement Activity," October 13, 1994, 31 U.S.C. § 6101 note, as amended by Executive Order No. 12689, "Debarment and Suspension," August 16, 1989, 31 U.S.C. § 6101 note, and other applicable federal laws, regulations, or guidance regarding participation with debarred or suspended Vendors.

The Division will review the U.S. GSA "System for Award Management – Lists of parties Excluded from Federal Procurement and Non-procurement Program," https://www.sam.gov,

As required by U.S. DOT regulations, 2 CFR Part 1200. If the Vendor's name is on the list, the Division cannot enter into a contract with a Vendor on the debarred list.

Should an approved Vendor have subcontracts, it is required to include similar provisions in each subcontract and review the SAM at https://www.sam.gov, to determine that the subcontractor is not on the debarred or suspended list.

9.9 Restrictions on Lobbying –

Every Vendor who applies or bids for an award of $100.000 or more shall file the certification of **Bid Form #9** required by 49 CFR Part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose the name of the registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. § 1352. Such disclosures are forwarded from tier to tier up to the Division.

9.10 Clean Air –

The Vendor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7606 and other requirements of the Clean Air Act, as amended, 42 U.S.C. §§ 7401 – 7671q. The Vendor agrees to report each violation to the Division and understands and agrees that the Division will, in turn, report each violation as required to FTA and the appropriate EPA Regional Office.

The Vendor also agrees to include these requirements in each subcontract exceeding $100,000 financed in whole or in part with Federal assistance by FTA.

9.11 Clean Water –

The Vendor agrees to comply with all applicable standards, orders, or regulations issued pursuant to Section 508 of the Clean Water Act, as amended, 33 U.S.C. § 1368, and other provisions of the Clean Water Act, as amended, U.S.C. 33 §§ 1251 – 1377. The Vendor agrees to report each violation to the Division and understands and agrees that the Division will, in turn, report each violation as required to FTA and the appropriate EPA Regional Office.

The Vendor also agrees to include these requirements in each subcontract exceeding $100,000 financed in whole or in part with Federal assistance provided by FTA.

9.12 Contract Work Hours and Safety Standards Act –

The Vendor shall comply with Section 102 of the Contract Work Hours and Safety Standards Act (40 USC §§ 3701 *et seq.*, esp. § 3702) as supplemented by Department of Labor Regulations (29 CFR, § 5 & 29 CFR § 1926) as they involve the employment of mechanics and laborers.

9.12.1 Overtime Requirements – No Vendor of subcontractor for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty (40) hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty (40) hours in such workweeks.

9.12.2 Violation; Liability for Unpaid Wages; Liquidated Damages – n the event of any violation of the clause set forth in paragraph A of this section, the Vendor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such Vendor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph A of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty (40) hours without payment of the overtime wages required by the clause set forth in paragraph A of this section.

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

9.12.4 Subcontracts – The Vendor or subcontractor shall insert in any subcontracts the clauses set forth in this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Vendor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in this section.

9.12.5 Payrolls and Basic Records – Payrolls and basic records relating thereto shall be maintained by the Vendor during the course of the work and preserved for a period of three (3) years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worked, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b) (2) (B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR .5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the Vendor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

Vendors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of the training programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

9.13 Notification Related to Fraud, Waste, Abuse, or Other Legal Matters

If a current or prospective legal matter that may affect the Federal Government emerges, the Contractor must promptly notify the Division so that the Division can notify the Federal Government. The Contractor must include a similar notification requirement in its Third-Party Agreements and must require each Third-Party Participant to include an equivalent provision in its sub-agreements at every tier, for any agreement that is a "covered transaction" according to 2 C.F.R §§ 180.220 and 1200.2200. The types of legal matters that require notification include, but are not limited to, a major dispute, breach, default, litigation, or naming the Federal Government including, but are not limited to, the Federal Government interests in the Award, the accompanying Underlying Agreement, and any Amendments thereto, or the Federal Government's administration or enforcement of federal laws, regulations, and requirements.

9.14 Accessibility

Vendor agrees that any vehicles provided shall be in accordance with the 42 U.S.C. Sections 12101 *et seq.,* and US DOT regulations, "Transportation Services for Individuals with Disabilities Act (ADA)," 49 CFR Part 37; and Joint U.S. Architectural and Transportation Barriers Compliance Board (U.S. ATBCB) and U.S. DOT regulations, "Americans with Disabilities (ADA) Accessibility

Specifications for Transportation Vehicles," 36 CFR Part 1192 and 49 CFR Part 38.

9.15 Bid Protest Procedures

Vendors have the option of protesting certain decisions made by the Purchasing Division. Please refer to the following link for Vendor Protest Procedures under Section 6.8.

http://www.state.wv.us/admin/purchase/vrc/vpg/VendorProcurementGuide.pdf

9.16 Appeals to the Federal Transit Administration (FTA)

Under the Federal Transit Administration's Circular 4220.1F, the Federal Transit Administration's (FTA's) appeals process for reviewing protests of a recipient's procurement decisions are:

9.16.1 Requirements for the Protester – The protester must:

9.16.1.1 **Qualify** as an "Interested Party" – Only an "interested party" qualifies for FTA review of its appeal. An "interested party" is a party that is an actual or prospective bidder or offeror whose direct economic interest would be affected by the award or failure to award the contract at issue.

i) Subcontractors – A subcontractor does not qualify as an "interested party" because it does not have a direct economic interest in the results of the procurement.

ii) Consortia//Joint Ventures/Partnerships/Teams – An established consortium, joint venture, partnership, or team that is an actual bidder or offeror and is acting in its entirety, would qualify as an "interested party" because it has a direct economic interest in the results of the procurement. An individual member of a consortium, joint venture, partnership, or team, acting solely in its individual capacity, does not qualify as an "interested party" because it does not have a direct economic interest in the results of the procurement.

iii) Associations or Organizations – An association or organization that does not perform contracts does not qualify as an "interested party" because it does not have a direct economic interest in the results of the procurement.

9.16.2 Exhaust Administrative Remedies – The protester must exhaust its administrative remedies by pursuing the WV Purchasing Division protest procedures to completion before appealing their decision to FTA.

9.16.3 Appeal Within Five (5) Days – The protester must deliver its appeal to the FTA Regional Administrator, Region III, 1760 Market Street, Suite 500, Philadelphia, PA, 19103-4124 within five (5) working days of the date when the protester has received actual or constructive notice of the WV Purchasing Division's final decision. Likewise, the protester must provide its appeal to the same address within five (5) working days of the date when the protester has identified other grounds for appeal to FTA. For example, other grounds for appeal include the DPT's failure to have or failure to comply with the WV Purchasing Division's protest procedures or failure to review the protest.

9.17 **Extent of FTA Review** – FTA limits its reviews of protests to:

9.17.1 Failure of DPT to have or adhere to WV Purchasing Division written bid protest procedures, or failure of DPT to review a complaint or protest.

9.17.2 Alleged violations on other grounds are under the jurisdiction of the appropriate State or local administrative authorities.

9.17.3 Alleged violations of a specific Federal Law or regulation that provides an applicable complaint procedure shall be submitted and processed in accordance with that Federal Law or regulation. See, e.g., Buy America Requirements, 49 C.F.R. Part 661 (Section 661.15); Participation by Minority Business Enterprise in Department of Transportation Programs, 49 C.F.R. Section 26.89.

FTA will exercise discretionary jurisdiction over those appeals involving issues important to FTA's overall public transportation program. FTA will refer violations of Federal law for which it does not have primary jurisdiction to the Federal authority having proper jurisdiction.

9.18 **FTA Determinations to Decline Protest Reviews** –

FTA's determination to decline jurisdiction over a protest does not mean that FTA approves of or agrees with WV Purchasing Division's decision or that FTA has determined the contract is eligible for Federal participation. FTA's determination means only that FTA does not consider the issues presented to be sufficiently important to FTA's overall program that FTA considers a review to be required.

10. ORDERING AND PAYMENT TO VENDOR

10.1 ORDERING:

10.1.1 Vendor shall accept orders by regular mail, facsimile, e-mail, or any other written forms of communication.

10.2 Payment

When submitting invoices for payment to the Division of Public Transit, the Vendor shall be required to provide an original typed invoice. The following items shall appear on the invoice:

1) Vendor's Federal Employee Identification Number (FEIN)

2) Order number

3) Invoice should reflect the base vehicle cost and any applicable options with unite cost. **NOTE: Two invoices shall be submitted for each vehicle, one for 90% and one for 10%.**

4) Submit all invoices to:
   Division of Public Transit
   Building 5, Room 650
   1900 Kanawha Blvd., East
   Charleston, West Virginia 25305

10.2.1 Payment of 90% of the total cost shall be paid upon conditional acceptance of the vehicle(s).

10.2.2 Conditional acceptance of the vehicle(s) by the Division of Public Transit shall be made upon completion of inspection by the Division of Public Transit under Section 18 of this RFQ.

10.2.3 Under the conditional acceptance of the vehicle(s) provided, the Division of Public Transit shall retain 10% of the total cost per vehicle until all vehicles provided have been in actual service for thirty (30) days.

10.2.4 In the event any vehicle is found to be unacceptable during the thirty (30) day period of conditional acceptance, the Division of Public Transit shall furnish to the Vendor, in writing, a letter of non- acceptance detailing any and all deficiencies.

10.2.5 Final acceptance on each vehicle shall be made by the Division of Public Transit in writing upon completion of the period of conditional acceptance and/or after any and all deficiencies have been corrected.

10.2.6 Final acceptance shall be made on each individual vehicle provided. (Some vehicles may be accepted, while acceptance of others remains pending.)

10.2.7 Final acceptance of each vehicle shall be provided in writing by the Director of the Division of Public Transit or his/her authorized representative.

10.2.8 All warranties as described in this contract shall begin with the first day after the date of final acceptance of each vehicle. **Vendor shall furnish Notification of Delayed Delivery Date of In-Transit Mileage Accumulation Forms for completion by the Division of Public Transit upon acceptance of the vehicle.**

10.2.9 Prompt Payment – The prime Vendor agrees to pay each sub-contractor under this prime contract for satisfactory performance of its contract no later than fifteen (15) days from the receipt of each payment the prime Vendor receives from the Division of Public Transit. The Vendor agrees further to return retainage payments to each sub-contractor within fifteen (15) days after the sub-contractor's work is satisfactorily completed. Any delay of postponement of payment from the above referenced time frame may occur only for good cause following written approval from the Division of Public Transit. This clause applies to both DBE and non-DBE sub-contractors.

11. DELIVERY AND RETURN:

11.1 Delivery Time and Location: Vendors shall specify approximate delivery dates when submitting bids. Delivery of the vehicle shall be completed within 150 days after receipt of executed contract documents. Vendor shall ship all orders in accordance with the above schedule and shall not hold orders until a minimum delivery quantity is met.

11.2 Late Delivery: The Division must be notified in writing if delivery is delayed for any reason. The request for extension must be received by the Division of Public Transit no less than ten (10) days prior to the originally planned vehicle delivery date and must include detailed justification for the length of the time extension. Any delay in delivery that could cause harm to an Agency will be grounds for cancellation of the delayed order, and/or obtaining the items ordered from a third party.

Any Agency seeking to obtain items from a third party under this provision must first obtain approval of the Purchasing Division.

11.3 Delivery shall be FOB destination to:

Kanawha Valley Regional Transit Authority (KRT)
1550 4th Avenue,
Charleston, WV 25324

Vendor must contact KRT 24 hours before delivery at 304-343-7594. Delivery will be accepted Monday through Friday, between 9 a.m. and 2 p.m. exclusive of State holidays. Any delay in delivery resulting from the common carriers' operations, accidents, or mechanical failures in route shall be construed as a cause beyond the Vendor's control. However, the Vendor shall have the responsibility of releasing the vehicle to the common carrier in time to reach the delivery site under normal delivery conditions.

11.4 In case the delivery of the complete vehicle shall be necessarily delayed because of strike, Injunction, civil disturbance, government controls, or by reason of any cause or circumstances beyond the control of the Vendor, as detailed in writing by the Vendor, the term of completion of delivery shall be extended by a number of days to be determined in each instance by mutual agreement of the Division of Public Transit and Vendor.

11.5 If the vehicle is delivered over-the-road, a written report shall be submitted by the driver to the Division of Public Transit listing all incidents and unusual vehicle performance during the trip.

Should any service or repair be required during delivery, a comprehensive report shall be submitted to the Executive Director of the Division of Public Transit describing the nature of the service or repair and the cause.

11.6 Prior to acceptance, the Vendor shall have total risk of loss of the vehicle, including any damage sustained during the Vendor's driveway operation. Drivers shall keep a maintenance log en-route and it shall be delivered to the Division of Public Transit with the vehicle.

11.7 **LIQUIDATED DAMAGES**: Vendor shall pay liquidated damages in the amount of $100 per calendar day per unit for the event that the Vendor fails to give timely, written notice of any delay in the delivery beyond the required delivery date.

12. ACCEPTANCE TESTS

12.1 Responsibility

Fully-documented tests shall be conducted on each production vehicle following manufacture to determine its acceptance to the Division of Public Transit. These acceptance tests shall include pre-delivery inspections and testing by the Division of Public Transit after the vehicles have been delivered.

12.2 Pre-Delivery Tests

The Vendor shall conduct acceptance tests at its plant on each vehicle following completion of manufacture and before delivery to the Division of Public Transit. These pre-delivery tests shall include visual and measured inspections, as well as testing the total vehicle operation. The tests shall be documented. Additional tests may be conducted at the Vendor's discretion to ensure that the completed vehicles have attained the desired quality and have met the requirements of Section 3: Specifications. This additional testing shall be recorded on appropriate test forms provided by the Vendor.

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

12.3 Inspection - Visual and Measured

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

13 Total Vehicle Operation

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

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

14 Final Pre-Delivery Inspection:

Prior to delivery, all vehicles must be thoroughly inspected and serviced in compliance with the manufacturer's prescribed procedures which includes but is not limited to:

14.1 Complete vehicle lubrication;

14.2 Confirm oil level, fill crank case as needed, top off all fluids;

14.3 Adjust engine to proper operating condition;

14.4 Verify tire pressure and correct as necessary;

14.5 Check front end alignment or four-wheel alignment, perform alignment, and balance all tires;

14.6 Wash/Clean interior and exterior of vehicle. Remove all unnecessary tags, stickers (including window stickers), papers, tags, etc.

14.7 Upon delivery, the vehicles fuel tanks shall be full of fuel;

14.8 Affix a valid West Virginia Inspection Sticker to the windshield. The vehicle must be inspected in the month delivered.

14.9 No dealer insignia or other advertising shall be affixed to the vehicle or appear on any accessory such as mud flaps, bumpers, deck lids, etc. Vehicles delivered with such advertising will be rejected;

14.10 Perform operational checks which will cover all controls, systems, and devices, doors, windows, accessories, and road testing of the completed vehicle. Vehicle shall be driven at various speeds; brakes tested for dependability, vehicle checked for rattles, squeaks and must be in compliance with pre-delivery inspection/servicing procedures and make adjustments as necessary.

15 Post-Delivery Tests

The Division of Public Transit shall within fifteen (15) calendar days of **notice from Vendor that vehicle is ready to be inspected for conditional acceptance,** proceed with its inspection of vehicle for conditional acceptance. The Division of Public Transit will conduct acceptance tests on each delivered vehicle. The purpose of these tests is to identify defects that have become apparent between the time of vehicle release and delivery to the Division of Public Transit. The post-delivery tests shall include visual inspection and vehicle operations. The road tests for total vehicle operation are similar to those conducted at the Vendor's plant. Operational deficiencies of each vehicle shall be identified and recorded.

Vehicles that fail to pass the post-delivery tests are subject to non-acceptance. The Division of Public Transit shall record details of all defects and shall notify the Vendor of non-acceptance of each vehicle within 5 days after completion of the tests.

16 Conditional Acceptance of Vehicle's

The vehicle shall undergo the Division of Public Transit's acceptance test. If the vehicle passes these tests, conditional acceptance of the vehicle by the Division of Public Transit occurs on the fifteenth day after delivery. Acceptance may occur earlier if the Division of Public Transit notifies the Vendor of early acceptance. If the vehicle fails these tests, it shall not be accepted until the repairs have been made.

16.1 Repairs After Non-Acceptance

The Division of Public Transit may require the Vendor, or its designated representative, to perform the repairs after non-acceptance or the work may be done by the Transit Authority or Recipient Agency's personnel with reimbursement by the Vendor.

16.1.1 Repairs by Vendor

If the Transit Authority or Recipient Agency requires the Vendor to perform repairs after non-acceptance of the vehicle, Vendor's representative must begin work within five (5) working days after receiving notifications from the Division of Public Transit or Transit Authority of failure of acceptance tests. The Transit Authority or Recipient Agency shall make the vehicle available to complete repairs timely with the Vendor's repair schedule.

The Vendor shall provide, at its own expense, all spare parts, tools and space required to complete the repairs. At the Transit Authority or Recipient Agency's option, the Vendor may be required to remove the vehicle from their property. The repair procedure must be diligently pursued by the Vendor's representatives and the Vendor shall assume risk of loss while the vehicle is under its control.

16.1.2 Repairs by Transit Authority or Recipient Agency

16.1.2.1 Parts Used. If the Transit Authority or Recipient Agency decides to perform the repairs after non-acceptance of the vehicle, it shall correct or repair the defect and any related defects using Vendor specified parts available from its own stock or those supplied by the Vendor specifically for this repair.

Monthly, or at a period to be mutually agreed upon, reports of all repairs covered by this procedure shall be submitted by the Transit Authority or Recipient Agency to the Vendor for reimbursement or replacement of parts. The Vendor shall provide forms for these reports.

16.1.2.2 Vendor Supplied Parts. If the Vendor supplies parts for repairs being performed by the Transit Authority or Recipient Agency, after non-acceptance of the vehicle, these parts shall be shipped prepaid to the Transit Authority or Recipient Agency from any source selected by the Vendor within ten (10) working days after receipt of the request for said parts, provided said parts are available for shipment.

16.1.2.3 Return of Defective Components. The Vendor may request that parts covered by this provision be returned to the manufacturing plant. The total cost for this action shall be paid by the Vendor.

16.1.2.4 Reimbursement for Labor. The Transit Authority or Recipient Agency shall be reimbursed by the Vendor for labor. The amount shall be determined by multiplying the number of actual "man-hours" straight wage rate plus 53 percent fringe benefits, plus the cost of towing in the vehicle if such action was necessary. These wage and fringe benefit rates shall not exceed the rates in effect at the Transit Authority or Recipients Agency's service garage at the time the defect correction is made.

16.1.2.5 Reimbursement for Parts. The Transit Authority or Recipient Agency shall be reimbursed by the Vendor for defective parts that must be replaced to correct the defect. The reimbursement shall include taxes where applicable and ten (10) percent handling cost.

16.1.4 **Delivery Payment/Risk of Loss:** Standard order delivery shall be F.O.B. destination to the Agency's designated location. Vendor shall include the cost of standard order delivery charges in its bid pricing/discount and is not permitted to charge the Agency separately for such delivery.

16.1.5 No Government Obligation to Third Parties

The Division of Public Transit and the Vendor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to the Contract and shall not be subject to any obligations or liabilities to DPT, the Vendor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying Contract.

The Vendor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified except to identify the subcontractor who will be subject to its provisions.

17. VENDOR DEFAULT:

17.1 The Following shall be considered a vendor default under this Contract.

17.1.1 Failure to provide Contract Items in accordance with the requirements c obtained herein.

17.1.2 Failure to comply with other specifications and requirements contained herein.

17.1.3 Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.

17.1.4 Failure to remedy deficient performance upon request.

17.2 The Following remedies shall be available to Agency upon default.

17.2.1 Immediate cancellation of the Contract.

17.2.2 Immediate cancellation of one or more release orders issued under this Contract.

17.2.3 Any other remedies available in law or equity.

18. MISCELLANEOUS:

18.1 **No Substitutions:** Vendor shall supply only Vehicles as submitted in response to the Solicitation unless a contract modification is approved in accordance with the provisions contained in this Contract.

18.2 **Vendor Supply:** Vendor must carry sufficient inventory of the Contract Items being offered to fulfill its obligations under this Contract. By signing its bid, Vendor certifies that it can supply the Contract Items contained in its bid response.

18.3 **Contract Manager:** During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: C. Chad Seals

Telephone Number: 1-800-533-1006 Ext. 8606

Fax Number: (434) 821-4456

Email Address: chad@sonnymerryman.com

4.18.3.2 Vendor Supplied Parts

The Recipient Agency may request that the Vendor supply new parts for warranty covered repairs being performed by the Recipient Agency. These parts shall be shipped prepaid to the Recipient Agency from any source selected by the Vendor within 10 (ten) working days of receipt of the request for said parts.

4.18.3.3 Defective Components Return

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

4.18.3.4 Reimbursement for Labor

The Recipient Agencies shall be reimbursed by the Vendor for labor. The amount shall be determined by multiplying the number of man-hours actually required to correct the defect by the current per hour, straight wage rate, plus 53 percent fringe benefits, plus the cost of towing in the vehicle if such action was necessary and if the vehicle was in the normal service area.

These wage and fringe benefit rates shall not exceed the rates in effect in the Recipient Agencies service garage at the time the defect correction is made.

4.18.3.5 Reimbursement for Parts

The Recipient Agencies shall be reimbursed by the Vendor for defective parts and for parts that must be replaced to correct the defect. The reimbursement shall be at the invoice cost of the part(s) at the time of repair and shall include taxes where applicable and 10 percent handling costs.

4.18.4 WARRANTY AFTER REPLACEMENT/REPAIRS

If any component, unit, or subsystem is rebuilt or replaced by the Vendor or by the Recipient Agencies personnel, with the concurrence of the Vendor, the subsystem shall have the unexpired warranty period of the original subsystem.\

5. CONTRACT AWARD

5.1 Contract Award: The Contract is intended to provide Agencies with a purchase price on all Contract Items. The Contract shall be awarded to the Vendor that provides the Contract Items meeting the required specifications for the lowest overall total cost as shown on the Pricing Pages.

5.2 The Federal Transit Administration's "Third Party Contracting Circular" (4220.1F), requires grantees (the DPT) to conduct procurements in a manner that prohibits the use of statutorily or administratively imposed In-State or local geographical preferences in the evaluation of bids or proposals, except in those cases where applicable Federal statutes expressly mandate or encourage geographic preference.

Therefore, the In-State vendor preference per West Virginia Code 5A-3-37 shall not apply to this procurement since it is partially or entirely funded with Federal Transit Administration funds.

6. PRICING PAGE

6.1 Vendor should complete Exhibit A Pricing page by listing the unit price for each vehicle Class, multiplying the unit price by the estimated quantity to arrive at a total. All prices quoted are to be in whole dollars and include delivery charges.

6.2 Exhibit A Pricing Page contains a list of the Contract Items and estimated purchase volume. The estimated purchase volume for each item represents the approximate volume of anticipated purchases only. No future use of the Contract or any individual item is guaranteed or implied. Vendor should complete the Pricing Pages in their entirety as failure to do so may result in Vendor's bids being disqualified.

6.3 The Pricing Pages contain a list of the Contract Items and estimated purchase volume. The estimated purchase volume for each item represents the approximate volume of anticipated purchases only. No future use of the Contract or any individual item is guaranteed or implied.

6.4 Vendor should electronically enter the information into the Pricing Pages through wvOASIS, if available, or as an electronic document. In most cases, the Vendor can request an electronic copy of the Pricing Pages for bid purposes by sending an email request to the following address: Melissa.K.Pettrey@wv.gov

6.5 Additional agencies, as noted, could purchase from any awarded contract resulting from this bid. Specified deliverables would be as originally advertised, competed, evaluated and awarded.

7. BID REQUIREMENTS

7.1 All bids must remain in effect for the life of the contract except if vehicle chassis manufacturer issues a model year chassis price increase. A request for a model year chassis price increase is the only price increase that will be considered.

7.2 To request a new model year chassis price increase, the request shall be submitted to the Division of Public Transit. Documentation from the actual chassis manufacturer of the chassis price increase is required to be included in the request or the price increase will not be considered.

7.3 The bid shall be submitted in binder form with each section properly labeled with the required information attached to each section. Two (2) copies of the bid in binder form shall be sent to the Purchasing Division

with one (1) clearly marked for the West Virginia Division of Public Transit.

8. VENDOR QUALIFICATIONS

The Vendor must be a person, firm or corporation that:

8.1 Has in operation, a manufacturing plant adequate to assure delivery of all equipment within the time specified under the contract.

8.2 Has adequate engineering and service personnel, or has the capability to have such personnel, to satisfy any engineering or service problems that may arise during the warranty period.

8.3 Has similar vehicles in operation in comparable service for a minimum of one (1) year. The Vendor may be required to furnish a customer list indicating the number of units and dates in service during or equal period of during the bid evaluation period in addition to the requirements under Section 9.2 of these specifications.

8.4 In lieu of this requirement, certified results of a shaker test may be requested by the Division of Public Transit during the or equal period to prove the proposed vehicles to be capable of operating the service contemplated for these vehicles.

8.5 Has the necessary facilities and financial resources to complete the contract in a satisfactory manner within a required time. The Division of Public Transit shall have the right to conduct a pre-award survey of each Vendor.

8.6 Has complete and accurate maintenance, parts and operators' manuals.

9. MISCELLANEOUS ITEMS TO BE SUPPLIED WITH BID

9.1 Federal Transit Administration (FTA) Terms and Conditions and Certifications: Current FTA Terms and Conditions are included in this bid and must be met. Certifications for Vehicle Purchases, Federal Motor Vehicle Safety Standards, Debarred Bidders, Disadvantaged Business Enterprise Manufacturers, and Buy America Rolling Stock, Restrictions on Lobbying and Vehicle Testing certifications are provided on Bid Form Pages #1 - #10. **All bid forms provided shall be properly completed and furnished by the Vendor <u>as part of the bid</u>. Failure to submit any of these forms <u>shall</u> disqualify the bid.**

9.2 Pre-Award Review – The Vendor shall submit the following items and any further items if requested.

9.2.1 Complete mechanical description of vehicle, its construction and equipment including manufacturer's model name and/or number. Equipment to be described shall include the wheelchair lift, air conditioner, flip-up seat, and wheelchair securement system, if these items are specified herein.

9.2.2 Proposed interior floor plans, showing detailed dimensions including the location of the wheelchair securement system and stanchions if specified.

9.2.3 Curb weight (empty weight) and gross vehicle weight rating (GVWR) of vehicle.

9.2.4 Samples or paint charts of available exterior paint colors and vinyl.

9.2.5 Description of the warranties the Vendor proposes to furnish for the vehicle and for required ancillary equipment, including a listing of sites where warranty work will be performed.

9.2.6 The location of the nearest depot which will furnish a complete supply of parts and components for the repair and maintenance of the vehicle to be supplied.

9.2.7 Description of the undercoating/rustproofing system, including warranty to be provided.

9.2.8 Identification of the specific location of the place of assembly in the case of a vehicle or the place of a conversion in the case of a converted van. If the location changes, the Vendor must notify the Division of Public Transit, in which case the Division of Public Transit reserves the right to perform an inspection similar to the pre-award inspection identified. If the results of the inspection are unsatisfactory, the Division of Public Transit may begin the contract termination process through the WV State Purchasing Division.

9.2.9 A list of five (5) users names, addresses, and telephone numbers who have been provided similar equipment by the Vendor. If the Vendor has not provided similar equipment, the Division of Public Transit reserves the right to determine the acceptability of the equipment proposed by the Vendor.

9.3 Disadvantaged Business Enterprise (DBE)

9.3.1 All U.S. Department of Transportation, Federal Transit Administration (FTA) assisted contracts between FTA, the Division of Public Transit, and any Vendor shall include the following language:

9.3.2 **Policy** – It is the policy of the U.S. Department of Transportation that Disadvantaged Business Enterprises (DBE) as defined in 49 CFR Part 26 that DBEs shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with federal funds under this agreement. Consequently, the DBE requirements of 49 CFR Part 26 apply to the agreement.

9.3.3 **DBE Obligation** – The recipient or its Vendor agrees to ensure that DBEs as defined in 49 CFR Part 26 shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with federal funds under this agreement. Consequently, the DBE requirements of 49 CFR Part 26 apply to the agreement. In this regard, all recipients or Vendors shall take all necessary and reasonable steps in accordance with 49 CFR Part 26 to ensure that DBEs have the maximum opportunity to compete for and perform contracts. Recipients and their Vendors shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of U.S. Department of Transportation-assisted contracts.

9.3.4 The manufacturer of transit vehicles shall certify that it has complied with the

requirements of 49 CFR Part 26 (March 4, 1999), Section 26.49, and "Transit Vehicle Manufacturers". This certification shall be submitted with responses to this solicitation on **Bid Form #3.**

9.3.5 The Vendor shall make good faith efforts to replace a DBE subcontractor that is unable to perform, with another DBE subcontractor.

9.3.6 Where the Vendor is found to have failed to exert sufficient reasonable and good faith efforts to involve DBEs in the work provided, the Division of Public Transit may declare the Vendor noncompliant and in breach of contract.

9.3.7 The Vendor will keep records and documents for a reasonable time following performance of this contract to indicate compliance with the Division of Public Transit DBE Program. These records and documents will be made available at reasonable times and places for inspection by any authorized representative of the Division of Public Transit and will be submitted to the Division of Public Transit upon request.

9.3.8 The awarded Vendor agrees to include the following assurance in every subcontract it signs relevant to this contract: The Vendor and each Third Party Subcontractor must not discriminate on the basis of race, color, national origin, or sex in the award and performance of any FTA or U.S. DOT-assisted sub-agreement, third party contract, and third party subcontract, as applicable, and the administration of its DBE program or the requirements of 49 CFR Part 26.

The Vendor and each third-party subcontractor must take all necessary and reasonable steps under 49 CFR Part 26 to ensure nondiscrimination in the award and administration of U.S. DOT-assisted sub-agreements, third party contracts and third-party subcontracts, as applicable.
Failure by the Vendor and any of its third-party contracts or third-party subcontractors to carry out the requirements of this subparagraph 13.d (4) (b) is a material breach of this contract, and

The following remedies, or such other remedy as the Division of Public Transit deems appropriate, include, but are not limited to, withholding payments, assessing sanctions. liquidated damages; and/or disqualifying the Vendor from future bidding as non-responsible.

9.5 Civil Rights Requirements –

In connection with the execution of this contract, the following requirements will apply:

9.5.1 Nondiscrimination. In accordance with Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 2000d, *et seq*., Age Discrimination Act of 1975, as amended, 42 U.S.C. §6101, *et. seq*., Americans with Disabilities Act of 1990, as amended, 42 U.S.C. § 12101, *et. seq*., and Federal transit law at 49 U.S.C. §5332, as amended, the Vendor agrees that it will not discriminate against any employee or applicant for employment on the basis of race, color, religion, national origin, sex, age or disability. In addition, the Vendor agrees to comply with any other applicable Federal statutes that may be signed into law or regulations that may be promulgated.

9.5.2 Equal Employment Opportunity. The following equal employment opportunity requirements apply to the underlying contract:

9.5.2.1 Race, Color, Religion, National Origin, Sex, Disability, Age, Sexual Orientation, Gender Identity or Status as a Parent. In accordance with Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 2000e, *et seq*., and Federal transit laws at 49 U.S.C. § 5332, the Vendor agrees to comply with all applicable equal employment opportunity requirements of the U.S. Department of Labor (US DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60 *et seq*., (which implement Executive Order Number 11246, "Equal Employment Opportunity", as amended by Executive Order Number 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Vendor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during their employment, without regard to their race, color, religion, national origin, sex, disability, age, sexual orientation, gender identity or status as a parent. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms or compensation; and selection for training, including apprenticeship. In addition, the Vendor agrees to comply with any implementing requirements FTA may issue.

9.5.3 The Vendor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary, to identify the affected parties.

9.6 **Vehicle Testing** – The Vendor agrees to comply with 49 U.S.C. § 5318(e) and FTA's implementing regulation at 49 CFR Part 665 and shall perform the following:

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

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

9.6.4 If the manufacturer represents that the vehicle is "grandfathered" (has been used in mass transit service in the United States before October 1, 1988, and is currently being produced without a major change in configuration or

components), the manufacturer shall provide the name and address of the recipient of such a vehicle and the details of that vehicle's configuration and major components.

9.6.5 Any bidder must submit to the Division FTA's Vehicle Testing Requirements Certification on **Bid Form #10**. Bids that are not accompanied by a completed certification must be rejected as non-responsive. **A copy of the vehicle testing report should be included with the bid if available.** This requirement does not apply to lower tier subcontractors.

9.7 **Buy America Certification** – Vendor agrees to comply with 49 U.S.C. § 5323(j) and 49 CFR Part 661, which provides that Federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 CFR 661.7 and include, microcomputer equipment, software, and small purchases (currently less than $150,000) made with capital, operating, or planning funds. Separate requirements for rolling stock are set out at 49 CFR 661.11. Rolling stock not subject to a general waiver must be manufactured in the United States and have a 60 percent domestic content.

9.7.1. A bidder must submit to the Division the appropriate Buy America certification on **Bid Form #4** with all bids on FTA-funded contracts, except those subject to a general waiver. **Per FTA requirements, bids that are not accompanied by a completed Buy America certification must be rejected as non-responsive.** This requirement does not apply to lower tier subcontractors.

9.7.2. Should the Vendor be declared responsive and low bid, pursuant to Pre-Award and Post Delivery Audit Requirements, the Division will require the Vendor to submit documentation (prior to any award) that lists:

9.7.2.1 Component and sub-component parts of the rolling stock to be purchased identified by manufacturer of the parts, their country of origin and costs;

9.7.2.2 The location of the final assembly point for the rolling stock, including a description of the activities that will take place at the final assembly point and the cost of final assembly.

9.7.2.3 The Vendor shall submit one manufacturer's Federal Motor Vehicle Safety Standards (FMVSS) self-certification sticker providing information that the vehicle quoted complies with relevant FMVSS, or Manufacturer's certified statement that the contracted vehicles will not be subject to FMVSS regulations.

9.7.2.4 Vendor shall submit evidence that it will be capable of meeting the bid specifications.

9.7.3 As required by the Post Delivery Audit Requirement, any successful vendor will be required to furnish the following prior to any completed vehicle being placed into service or before any payment can be made:

9.7.3.1 Actual component and sub-component parts of the rolling stock provided, identified by manufacturer of the parts, their country of origin and costs; and

9.7.3.2 Actual location of the final assembly point for the rolling stock provided, including a description of the activities that took place at the final assembly point and the actual cost of final assembly.

9.8 Debarment and Suspension –

This contract will comply with the requirements of 2 CFR Part 180, subpart C as adopted and supplemented by U.S. DOT regulations at 2 CFR Part 1200. Vendor is required to submit **Bid Forms #6 & #7** with bid.

The Division will not enter into any arrangement to participate in the development or implementation of a contract with any Vendor that is debarred or suspended except as authorized by Executive Orders No. 12549, "Uniform Suspension, Debarment or Exclusion of Participant from Procurement or Non-procurement Activity," October 13, 1994, 31 U.S.C. § 6101 note, as amended by Executive Order No. 12689, "Debarment and Suspension," August 16, 1989, 31 U.S.C. § 6101 note, and other applicable federal laws, regulations, or guidance regarding participation with debarred or suspended Vendors.

The Division will review the U.S. GSA "System for Award Management – Lists of parties Excluded from Federal Procurement and Non-procurement Program," https://www.sam.gov,

As required by U.S. DOT regulations, 2 CFR Part 1200. If the Vendor's name is on the list, the Division cannot enter into a contract with a Vendor on the debarred list.

Should an approved Vendor have subcontracts, it is required to include similar provisions in each subcontract and review the SAM at https://www.sam.gov, to determine that the subcontractor is not on the debarred or suspended list.

9.9 Restrictions on Lobbying –

Every Vendor who applies or bids for an award of $100.000 or more shall file the certification of **Bid Form #9** required by 49 CFR Part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose the name of the registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. § 1352. Such disclosures are forwarded from tier to tier up to the Division.

9.10 Clean Air –

The Vendor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7606 and other requirements of the Clean Air Act, as amended, 42 U.S.C. §§ 7401 – 7671q. The Vendor agrees to report each violation to the Division and understands and agrees that the Division will, in turn, report each violation as required to FTA and the appropriate EPA Regional Office.

The Vendor also agrees to include these requirements in each subcontract exceeding $100,000 financed in whole or in part with Federal assistance by FTA.

9.11 Clean Water –

The Vendor agrees to comply with all applicable standards, orders, or regulations issued pursuant to Section 508 of the Clean Water Act, as amended, 33 U.S.C. § 1368, and other provisions of the Clean Water Act, as amended, U.S.C. 33 §§ 1251 – 1377. The Vendor agrees to report each violation to the Division and understands and agrees that the Division will, in turn, report each violation as required to FTA and the appropriate EPA Regional Office.

The Vendor also agrees to include these requirements in each subcontract exceeding $100,000 financed in whole or in part with Federal assistance provided by FTA.

9.12 Contract Work Hours and Safety Standards Act –

The Vendor shall comply with Section 102 of the Contract Work Hours and Safety Standards Act (40 USC §§ 3701 *et seq.*, esp. § 3702) as supplemented by Department of Labor Regulations (29 CFR, § 5 & 29 CFR § 1926) as they involve the employment of mechanics and laborers.

9.12.1 Overtime Requirements – No Vendor of subcontractor for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty (40) hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty (40) hours in such workweeks.

9.12.2 Violation; Liability for Unpaid Wages; Liquidated Damages – n the event of any violation of the clause set forth in paragraph A of this section, the Vendor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such Vendor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph A of this section, in the sum of $10 for each calendar day on which such individual was required or

permitted to work in excess of the standard workweek of forty (40) hours without payment of the overtime wages required by the clause set forth in paragraph A of this section.

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

9.12.4 Subcontracts – The Vendor or subcontractor shall insert in any subcontracts the clauses set forth in this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Vendor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in this section.

9.12.5 Payrolls and Basic Records – Payrolls and basic records relating thereto shall be maintained by the Vendor during the course of the work and preserved for a period of three (3) years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worked, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b) (2) (B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR .5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the Vendor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

Vendors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of the training programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

9.13 Notification Related to Fraud, Waste, Abuse, or Other Legal Matters

If a current or prospective legal matter that may affect the Federal Government emerges, the Contractor must promptly notify the Division so that the Division can notify the Federal Government. The Contractor must include a similar notification requirement in its Third-Party Agreements and must require each Third-Party Participant to include an equivalent provision in its sub-agreements at every tier, for any agreement that is a "covered transaction" according to 2 C.F.R §§ 180.220 and 1200.2200. The types of legal matters that require notification include, but are not limited to, a major dispute, breach, default, litigation, or naming the Federal Government including, but are not limited to, the Federal Government interests in the Award, the accompanying Underlying Agreement, and any Amendments thereto, or the Federal Government's administration or enforcement of federal laws, regulations, and requirements.

9.14 Accessibility

Vendor agrees that any vehicles provided shall be in accordance with the 42 U.S.C. Sections 12101 *et seq.*, and US DOT regulations, "Transportation Services for Individuals with Disabilities Act (ADA)," 49 CFR Part 37; and Joint U.S. Architectural and Transportation Barriers Compliance Board (U.S. ATBCB) and U.S. DOT regulations, "Americans with Disabilities (ADA) Accessibility Specifications for Transportation Vehicles," 36 CFR Part 1192 and 49 CFR Part 38.

9.15 Bid Protest Procedures

Vendors have the option of protesting certain decisions made by the Purchasing Division. Please refer to the following link for Vendor Protest Procedures under Section 6.8.

http://www.state.wv.us/admin/purchase/vrc/vpg/VendorProcurementGuide.pdf

9.16 Appeals to the Federal Transit Administration (FTA)

Under the Federal Transit Administration's Circular 4220.1F, the Federal Transit Administration's (FTA's) appeals process for reviewing protests of a recipient's procurement decisions are:

9.16.1 Requirements for the Protester – The protester must:

9.16.1.1 **Qualify** as an "Interested Party" – Only an "interested party" qualifies for FTA review of its appeal. An "interested party" is a party that is an actual or prospective bidder or offeror whose direct economic interest would be affected by the award or failure to award the contract at issue.

i) Subcontractors – A subcontractor does not qualify as an "interested party" because it does

not have a direct economic interest in the results of the procurement.

ii) Consortia//Joint Ventures/Partnerships/Teams – An established consortium, joint venture, partnership, or team that is an actual bidder or offeror and is acting in its entirety, would qualify as an "interested party" because it has a direct economic interest in the results of the procurement. An individual member of a consortium, joint venture, partnership, or team, acting solely in its individual capacity, does not qualify as an "interested party" because it does not have a direct economic interest in the results of the procurement.

iii) Associations or Organizations – An association or organization that does not perform contracts does not qualify as an "interested party" because it does not have a direct economic interest in the results of the procurement.

9.16.2 Exhaust Administrative Remedies – The protester must exhaust its administrative remedies by pursuing the WV Purchasing Division protest procedures to completion before appealing their decision to FTA.

9.16.3 Appeal Within Five (5) Days – The protester must deliver its appeal to the FTA Regional Administrator, Region III, 1760 Market Street, Suite 500, Philadelphia, PA, 19103-4124 within five (5) working days of the date when the protester has received actual or constructive notice of the WV Purchasing Division's final decision. Likewise, the protester must provide its appeal to the same address within five (5) working days of the date when the protester has identified other grounds for appeal to FTA. For example, other grounds for appeal include the DPT's failure to have or failure to comply with the WV Purchasing Division's protest procedures or failure to review the protest.

9.17 **Extent of FTA Review** – FTA limits its reviews of protests to:

9.17.1 Failure of DPT to have or adhere to WV Purchasing Division written bid protest procedures, or failure of DPT to review a complaint or protest.

9.17.2 Alleged violations on other grounds are under the jurisdiction of the appropriate State or local administrative authorities.

9.17.3 Alleged violations of a specific Federal Law or regulation that provides an applicable complaint procedure shall be submitted and processed in accordance with that Federal Law or regulation.

See, e.g., Buy America Requirements, 49 C.F.R. Part 661 (Section 661.15); Participation by Minority Business Enterprise in Department of Transportation Programs, 49 C.F.R. Section 26.89.

FTA will exercise discretionary jurisdiction over those appeals involving issues important to FTA's overall public transportation program. FTA will refer violations of Federal law for which it does not have primary jurisdiction to the Federal authority having proper jurisdiction.

9.18 **FTA Determinations to Decline Protest Reviews** –

FTA's determination to decline jurisdiction over a protest does not mean that FTA approves of or agrees with WV Purchasing Division's decision or that FTA has determined the contract is eligible for Federal participation. FTA's determination means only that FTA does not consider the issues presented to be sufficiently important to FTA's overall program that FTA considers a review to be required.

10. ORDERING AND PAYMENT TO VENDOR

10.1 ORDERING:

10.1.1 Vendor shall accept orders by regular mail, facsimile, e-mail, or any other written forms of communication.

10.2 Payment

When submitting invoices for payment to the Division of Public Transit, the Vendor shall be required to provide an original typed invoice. The following items shall appear on the invoice:

1) Vendor's Federal Employee Identification Number (FEIN)

2) Order number

3) Invoice should reflect the base vehicle cost and any applicable options with unite cost. **NOTE: Two invoices shall be submitted for each vehicle, one for 90% and one for 10%.**

4) Submit all invoices to:
   Division of Public Transit
   Building 5, Room 650
   1900 Kanawha Blvd., East
   Charleston, West Virginia 25305

10.2.1 Payment of 90% of the total cost shall be paid upon conditional acceptance of the vehicle(s).

10.2.2 Conditional acceptance of the vehicle(s) by the Division of Public Transit shall be made upon completion of inspection by the Division of Public Transit under Section 18 of this RFQ.

10.2.3 Under the conditional acceptance of the vehicle(s) provided, the Division of Public Transit shall retain 10% of the total cost per vehicle until all vehicles provided have been in actual service for thirty (30) days.

10.2.4 In the event any vehicle is found to be unacceptable during the thirty (30) day period of conditional acceptance, the Division of Public Transit shall furnish to the Vendor, in writing, a letter of non- acceptance detailing any and all deficiencies.

10.2.5 Final acceptance on each vehicle shall be made by the Division of Public Transit in writing upon completion of the period of conditional acceptance and/or after any and all deficiencies have been corrected.

10.2.6 Final acceptance shall be made on each individual vehicle provided. (Some vehicles may be accepted, while acceptance of others remains pending.)

10.2.7 Final acceptance of each vehicle shall be provided in writing by the Director of the Division of Public Transit or his/her authorized representative.

10.2.8 All warranties as described in this contract shall begin with the first day after the date of final acceptance of each vehicle. **Vendor shall furnish Notification of Delayed Delivery Date of In-Transit Mileage Accumulation Forms for completion by the Division of Public Transit upon acceptance of the vehicle.**

10.2.9 Prompt Payment – The prime Vendor agrees to pay each sub-contractor under this prime contract for satisfactory performance of its contract no later than fifteen (15) days from the receipt of each payment the prime Vendor receives from the Division of Public Transit. The Vendor agrees further to return retainage payments to each sub-contractor within fifteen (15) days after the sub-contractor's work is satisfactorily completed. Any delay of postponement of payment from the above referenced time frame may occur only for good cause following written approval from the Division of Public Transit. This clause applies to both DBE and non-DBE sub-contractors.

11. DELIVERY AND RETURN:

11.1 Delivery Time and Location: Vendors shall specify approximate delivery dates when submitting bids. Delivery of the vehicle shall be completed within 150 days after receipt of executed contract documents. Vendor shall ship all orders in accordance with the above schedule and shall not hold orders until a minimum delivery quantity is met.

11.2 **Late Delivery:** The Division must be notified in writing if delivery is delayed for any reason. The request for extension must be received by the Division of Public Transit no less than ten (10) days prior to the originally planned vehicle delivery date and must include detailed justification for the length of the time extension. Any delay in delivery that could cause harm to an Agency will be grounds for cancellation of the delayed order, and/or obtaining the items ordered from a third party.

Any Agency seeking to obtain items from a third party under this provision must first obtain approval of the Purchasing Division.

11.3 Delivery shall be FOB destination to:

Kanawha Valley Regional Transit Authority (KRT)
1550 4th Avenue,
Charleston, WV 25324

Vendor must contact KRT 24 hours before delivery at 304-343-7594. Delivery will be accepted Monday through Friday, between 9 a.m. and 2 p.m. exclusive of State holidays. Any delay in delivery resulting from the common carriers' operations, accidents, or mechanical failures in route shall be construed as a cause beyond the Vendor's control. However, the Vendor shall have the responsibility of releasing the vehicle to the common carrier in time to reach the delivery site under normal delivery conditions.

11.4 In case the delivery of the complete vehicle shall be necessarily delayed because of strike, Injunction, civil disturbance, government controls, or by reason of any cause or circumstances beyond the control of the Vendor, as detailed in writing by the Vendor, the term of completion of delivery shall be extended by a number of days to be determined in each instance by mutual agreement of the Division of Public Transit and Vendor.

11.5 If the vehicle is delivered over-the-road, a written report shall be submitted by the driver to the Division of Public Transit listing all incidents and unusual vehicle performance during the trip.

Should any service or repair be required during delivery, a comprehensive report shall be submitted to the Executive Director of the Division of Public Transit describing the nature of the service or repair and the cause.

11.6 Prior to acceptance, the Vendor shall have total risk of loss of the vehicle, including any damage sustained during the Vendor's driveway operation. Drivers shall keep a maintenance log en-route and it shall be delivered to the Division of Public Transit with the vehicle.

11.7 **LIQUIDATED DAMAGES**: Vendor shall pay liquidated damages in the amount of $100 per calendar day per unit for the event that the Vendor fails to give timely, written notice of any delay in the delivery beyond the required delivery date.

12. ACCEPTANCE TESTS

12.1 Responsibility

Fully-documented tests shall be conducted on each production vehicle following manufacture to determine its acceptance to the Division of Public Transit. These acceptance tests shall include pre-delivery inspections and testing by the Division of Public Transit after the vehicles have been delivered.

12.2 Pre-Delivery Tests

The Vendor shall conduct acceptance tests at its plant on each vehicle following completion of manufacture and before delivery to the Division of Public Transit. These pre-delivery tests shall include visual and measured inspections, as well as testing the total vehicle operation. The tests shall be documented. Additional tests may be conducted at the Vendor's discretion to ensure that the completed vehicles have attained the desired quality and have met the requirements of Section 3: Specifications. This additional testing shall be recorded on appropriate test forms provided by the Vendor.

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

12.3 Inspection - Visual and Measured

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

13 Total Vehicle Operation

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

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

14 Final Pre-Delivery Inspection:

Prior to delivery, all vehicles must be thoroughly inspected and serviced in compliance with the manufacturer's prescribed procedures which includes but is not limited to:

14.1 Complete vehicle lubrication;

14.2 Confirm oil level, fill crank case as needed, top off all fluids;

14.3 Adjust engine to proper operating condition;

14.4 Verify tire pressure and correct as necessary;

14.5 Check front end alignment or four-wheel alignment, perform alignment, and balance all tires;

14.6 Wash/Clean interior and exterior of vehicle. Remove all unnecessary tags, stickers (including window stickers), papers, tags, etc.

14.7 Upon delivery, the vehicles fuel tanks shall be full of fuel;

14.8 Affix a valid West Virginia Inspection Sticker to the windshield. The vehicle must be inspected in the month delivered.

14.9 No dealer insignia or other advertising shall be affixed to the vehicle or appear on any accessory such as mud flaps, bumpers, deck lids, etc. Vehicles delivered with such advertising will be rejected;

14.10 Perform operational checks which will cover all controls, systems, and devices, doors, windows, accessories, and road testing of the completed vehicle. Vehicle shall be driven at various speeds; brakes tested for dependability, vehicle checked for rattles, squeaks and must be in compliance with pre-delivery inspection/servicing procedures and make adjustments as necessary.

15 Post-Delivery Tests

The Division of Public Transit shall within fifteen (15) calendar days of **notice from Vendor that vehicle is ready to be inspected for conditional acceptance,** proceed with its inspection of vehicle for conditional acceptance. The Division of Public Transit will conduct acceptance tests on each delivered vehicle. The purpose of these tests is to identify defects that have become apparent between the time of vehicle release and delivery to the Division of Public Transit. The post-delivery tests shall include visual inspection and vehicle operations. The road tests for total vehicle operation are similar to those conducted at the Vendor's plant. Operational deficiencies of each vehicle shall be identified and recorded.

Vehicles that fail to pass the post-delivery tests are subject to non-acceptance. The Division of Public Transit shall record details of

all defects and shall notify the Vendor of non-acceptance of each vehicle within 5 days after completion of the tests.

16 Conditional Acceptance of Vehicle's

The vehicle shall undergo the Division of Public Transit's acceptance test. If the vehicle passes these tests, conditional acceptance of the vehicle by the Division of Public Transit occurs on the fifteenth day after delivery. Acceptance may occur earlier if the Division of Public Transit notifies the Vendor of early acceptance. If the vehicle fails these tests, it shall not be accepted until the repairs have been made.

16.1 Repairs After Non-Acceptance

The Division of Public Transit may require the Vendor, or its designated representative, to perform the repairs after non-acceptance or the work may be done by the Transit Authority or Recipient Agency's personnel with reimbursement by the Vendor.

16.1.1 Repairs by Vendor

If the Transit Authority or Recipient Agency requires the Vendor to perform repairs after non-acceptance of the vehicle, Vendor's representative must begin work within five (5) working days after receiving notifications from the Division of Public Transit or Transit Authority of failure of acceptance tests. The Transit Authority or Recipient Agency shall make the vehicle available to complete repairs timely with the Vendor's repair schedule.

The Vendor shall provide, at its own expense, all spare parts, tools and space required to complete the repairs. At the Transit Authority or Recipient Agency's option, the Vendor may be required to remove the vehicle from their property. The repair procedure must be diligently pursued by the Vendor's representatives and the Vendor shall assume risk of loss while the vehicle is under its control.

16.1.2 Repairs by Transit Authority or Recipient Agency

16.1.2.1 Parts Used. If the Transit Authority or Recipient Agency decides to perform the repairs after non-acceptance of the vehicle, it shall correct or repair the defect and any related defects using Vendor specified parts available from its own stock or those supplied by the Vendor specifically for this repair.

Monthly, or at a period to be mutually agreed upon, reports of all repairs covered by this procedure shall be submitted by the Transit Authority or Recipient Agency to the Vendor for reimbursement or replacement of parts. The Vendor shall provide forms for these reports.

16.1.2.2 Vendor Supplied Parts. If the Vendor supplies parts for repairs being performed by the Transit Authority or Recipient Agency, after non-acceptance of the vehicle, these parts shall be shipped prepaid to the Transit Authority or Recipient Agency from any source selected by the Vendor within ten (10) working days after receipt of the request for said parts, provided said parts are available for shipment.

16.1.2.3 Return of Defective Components. The Vendor may request that parts covered by this provision be returned to the manufacturing plant. The total cost for this action shall be paid by the Vendor.

16.1.2.4 Reimbursement for Labor. The Transit Authority or Recipient Agency shall be reimbursed by the Vendor for labor. The amount shall be determined by multiplying the number of actual "man-hours" straight wage rate plus 53 percent fringe benefits, plus the cost of towing in the vehicle if such action was necessary. These wage and fringe benefit rates shall not exceed the rates in effect at the Transit Authority or Recipients Agency's service garage at the time the defect correction is made.

16.1.2.5 Reimbursement for Parts. The Transit Authority or Recipient Agency shall be reimbursed by the Vendor for defective parts that must be replaced to correct the defect. The reimbursement shall include taxes where applicable and ten (10) percent handling cost.

16.1.4 Delivery Payment/Risk of Loss: Standard order delivery shall be F.O.B. destination to the Agency's designated location. Vendor shall include the cost of standard order delivery charges in its bid pricing/discount and is not permitted to charge the Agency separately for such delivery.

16.1.5 No Government Obligation to Third Parties

The Division of Public Transit and the Vendor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to the Contract and shall not be subject to any obligations or liabilities to DPT, the Vendor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying Contract.

The Vendor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified except to identify the subcontractor who will be subject to its provisions.

17. VENDOR DEFAULT:

17.1 The Following shall be considered a vendor default under this Contract.

17.1.1 Failure to provide Contract Items in accordance with the requirements c obtained herein.

17.1.2 Failure to comply with other specifications and requirements contained herein.

17.1.3 Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.

17.1.4 Failure to remedy deficient performance upon request.

17.2 The Following remedies shall be available to Agency upon default.

17.2.1 Immediate cancellation of the Contract.

17.2.2 Immediate cancellation of one or more release orders issued under this Contract.

17.2.3 Any other remedies available in law or equity.

18. MISCELLANEOUS:

18.1 **No Substitutions:** Vendor shall supply only Vehicles as submitted in response to the Solicitation unless a contract modification is approved in accordance with the provisions contained in this Contract.

18.2 **Vendor Supply:** Vendor must carry sufficient inventory of the Contract Items being offered to fulfill its obligations under this Contract. By signing its bid, Vendor certifies that it can supply the Contract Items contained in its bid response.

18.3 **Contract Manager:** During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: C. Chad Seals

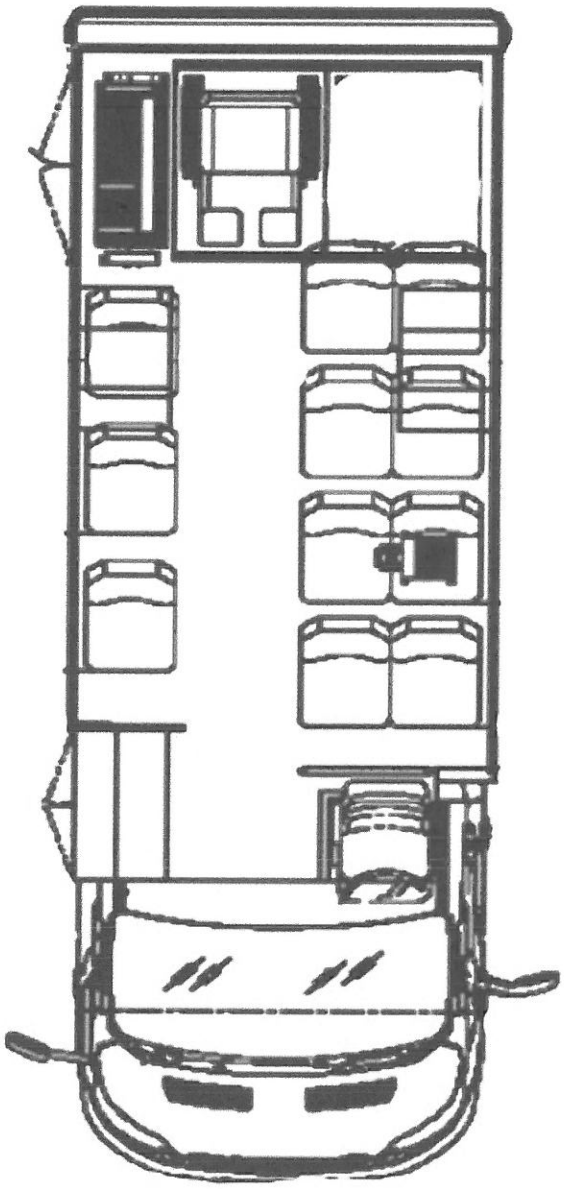
Telephone Number: ~~1-800-533-1006 Ext. 8606~~

Fax Number: (434) 821-4456

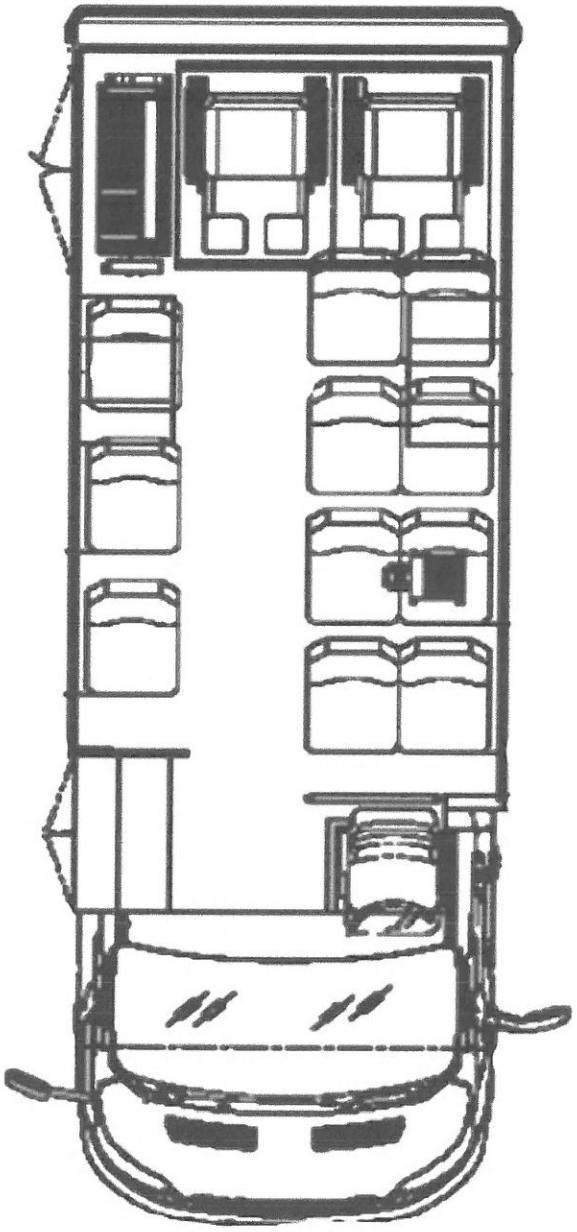
Email Address: chad@sonnymerryman.com

19. PROPOSED FLOOR PLANS

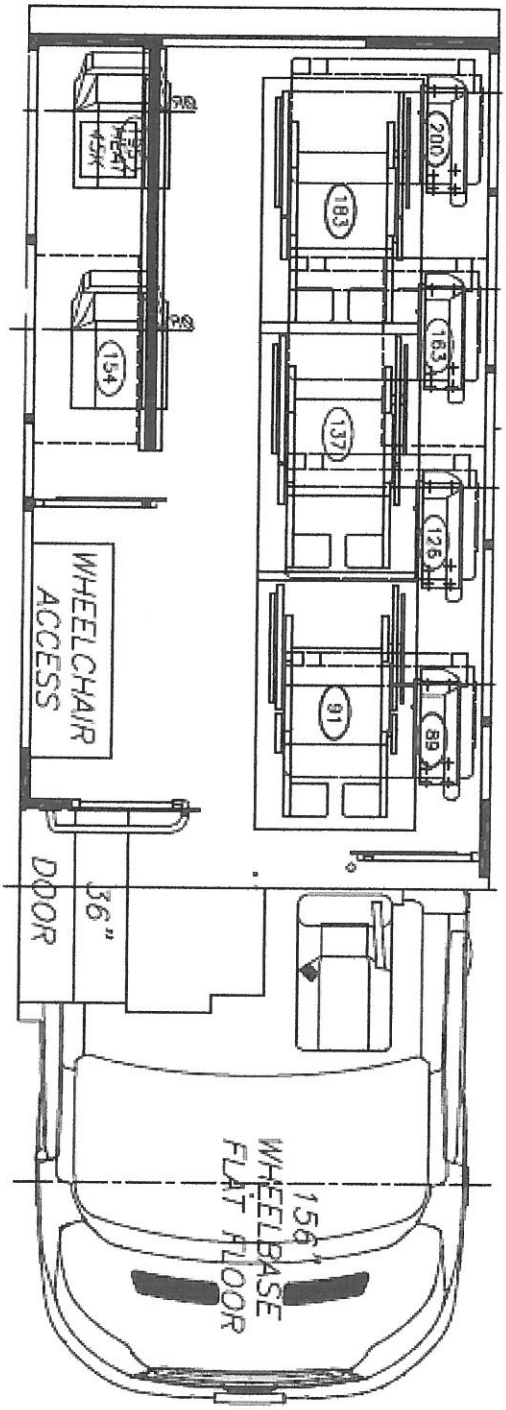
1 wheelchair spaces



Proposed 2 Wheelchair Positions



Proposed 3 Wheelchair Position with Front Lift Options



20. REQUIRED BID FORMS

The following certifications must be properly **completed and furnished by the bidder as part of the bid.** Failure to submit any of these certifications **shall deem the bid non-responsive.**

A required documentation checklist has been provided for bidder's usage.

BID FORM #1

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

Location(s) of the Technical Service Representative(s) and parts distribution center(s) closest or in the State of West Virginia.

Location(s) of the technical service representative(s).

Name: Brady Childress

Address: 5120 Wards Road

Evington, VA. 24550

Telephone: 1-800-533-1006 Ext. 8620

Name: _____

Address: _____

_____

Telephone: _____

Location(s) of parts distribution center(s).

Name: Derek Shelton

Address: 5120 Wards Road

Evington, VA. 24550

Telephone: 1-800-533-1006 Ext.8633

Name: _____

Address: _____

_____

Telephone: _____

BID FORM #2

DISADVANTAGED VEHICLEINESS ENTERPRISE VENDORS/ MANUFACTURERS CERTIFICATION

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

(Check appropriate statement)

☐ The Vendor, if a transit vehicle manufacturer, hereby certifies that it has complied with the requirements of 49 CFR Section 26.49 by submitting an annual DBE goal to the Federal Transit Administration (FTA). The goal has either been approved or not disapproved by FTA.

☒ The Vendor, if a non-manufacturing supplier, hereby certifies that the manufacturer of the transit vehicle to be supplied has complied with the above-referenced requirement of 49 CFR Section 26.49.

07/22/2020
Date

Authorized Signature

Commercial Sales
Title

Sonny Merryman Inc.
Company Name

BID FORM #3

BUY AMERICA CERTIFICATION
ROLLING STOCK
MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

Certificate of Compliance

The bidder or offeror hereby certifies that it will comply with the requirements of section 165(b) (3), of the Surface Transportation Assistance Act of 1982, as amended, and the applicable regulations of 49 CFR 661.11:

07/22/2020
Date

Authorized Signature

Sonny Merryman Inc
Company Name

C. Chad Seals
Name

Commercial Sales
Title

Certificate for Non-Compliance
The bidder or offeror hereby certifies that it cannot comply with the requirements of section 165(b) (3) of the Surface Transportation Assistance Act of 1982, as amended, but may qualify for an exception to the requirement consistent with section 165(b) (2) or (b) (4) of the Surface Transportation Assistance Act, as amended, and the applicable regulations in 49 CFR 661.7.

Date

Authorized Signature

Company Name

Name

Title

BID FORM #4

FEDERAL MOTOR VEHICLE SAFETY STANDARDS CERTIFICATION

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

The vendor hereby certifies that it shall submit, as required by Title 49 of the CFR, Part 663 - Subpart D, it's self-certification information stating that the vehicle(s) will comply with the relevant Federal Motor Vehicle Safety Standards issued by the National Highway Traffic Safety Administration in Title 49 of the Code of Federal Regulations, Part 571.

07/22/2020
Date

Authorized Signature

Commercial Sales
Title

Sonny Merryman Inc
Company Name

BID FORM #5

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

CERTIFICATION OF PRIMARY PARTICIPANT REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

The Primary Participant (applicant for an FTA grant or cooperative agreement, or potential contractor for a major third-party contract),

Sonny Merryman Inc. (COMPANY NAME) certifies to the best of its knowledge and belief, that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and

4. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

If the primary participant (applicant for an FTA grant, or cooperative agreement, or potential third-party contractor) is unable to certify to any of the statements in this certification, the participant shall attach an explanation to this certification.)

THE PRIMARY PARTICIPANT (APPLICANT FOR AN FTA GRANT OR COOPERATIVE AGREEMENT, OR POTENTIAL CONTRACTOR FOR A MAJOR THIRD-PARTY CONTRACT),

Sonny Merryman Inc., CERTIFIES OR AFFIRMS THE TRUTHFULNESS AND ACCURACY OF THE CONTENTS OF THE STATEMENTS SUBMITTED ON OR WITH THIS CERTIFICATION AND UNDERSTANDS THAT THE PROVISIONS OF 31 U.S.C. SECTIONS 3801 ET SEQ. ARE APPLICABLE THERETO.

_____

Signature and Title of Authorized Official

BID FORM #6

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

VENDOR'S CERTIFICATION OF UNDERSTANDING AND ACCEPTANCE

The Vendor hereby certifies that all Technical Specifications and Contract Terms and Conditions have been carefully reviewed, are fully understood and shall be adhered to in performance and completion of any contract resulting from this bid.

07/22/2020
Date

Authorized Signature

Commercial Sales
Title

Sonny Merryman Inc.
Company Name

SPECIFICATION COMPLIANCE

NOTE: Please check if what is offered is in exact compliance with specifications. **Any discrepancies must be listed as an attachment to the bid proposal. Exact dimensions and/or descriptions must be provided as a part of the Vendor's bid proposal when submitted.**

☒ Bid proposal submitted meets and/or exceeds all specification requirements.

☐ Bid proposal submitted contains deviations from specification requirements. Detailed descriptions of these deviations have been provided with this bid proposal.

BID FORM #7

MANDATORY BID FORM – MUST BE SUBMITTED WITH BID

CERTIFICATION OF RESTRICTIONS ON LOBBYING

The undersigned (Vendor, Contractor) certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid by or on behalf of the undersigned, to any person for influence or attempt to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress regarding the award of a Federal grant, loan (including a line of credit), cooperative agreement, loan guarantee, or loan insurance, or the extension, continuation, renewal, amendment, or modification of any Federal grant, loan (including a line of credit), cooperative agreement, loan guarantee, or loan insurance.

2. If any funds other than Federal appropriated funds have been or will be paid to any person to influence or attempt to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or any employee of a Member of Congress in connection with any application for a Federal grant, loan (including a line of credit), cooperative agreement, loan guarantee, or loan insurance, the undersigned assures that it will complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," Rev. 7-97; and

3. The undersigned understands that the language of this certification shall be included in the award documents for all sub awards at all tiers (including subcontracts, sub grants, sub agreements. and contracts under grants, loans (including a line of credit), cooperative agreements, loan guarantees, and loan insurance.

Undersigned understands that this certification is a material representation of fact upon which reliance is placed by the Federal government and that submission of this certification is a prerequisite for providing a Federal grant, loan (including a line of credit), cooperative agreement, loan guarantee, or loan insurance for a transaction covered by 31 U.S.C. 1352. The undersigned also understands that any person who fails to file a required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The (Vendor, Contractor) Sonny Merryman Inc., certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the (Vendor, Contractor understands and agrees that the provisions of 31 U.S.C. §§ 3801, et seq., apply to this certification and disclosure.

07/22/2020
Date

Authorized Signature

Commercial Sales
Title

BID FORM #8

CERTIFICATION OF COMPLIANCE WITH FTA'S BUS TESTING REQUIREMENTS

The undersigned (Vendor/Manufacturer) certifies that the vehicle offered in this procurement complies with 49 U.S.C. 5318, as amended by MAP-21, and FTA regulations, "Bus Testing," 49 CFR Part 665.

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

07/22/2020

Date

Authorized Signature

Commercial Sales

Title

Sonny Merryman Inc.

Company Name

NOTE: Many of the requested products literature are standard OEM components .

REQUEST FOR QUOTATION
156" Wheelbase Dual Rear Wheel (DRW) Narrow Body Cutaway

REQUIRED BID DOCUMENTATION CHECKLIST

Model Year: 2020 Model: Startrans Candidate II

Mandatory Bid Forms – must be submitted with bid:

☒ Bid Form #1: Locations of Technical Service Representatives and Parts Distribution Centers

☒ Bid Form #2: Disadvantaged Business Enterprise Vendors/Manufacturers Certification
The vendor shall also supply with bid FTA TVM DBE Goal Concurrence for the Current Fiscal Year Approval Letter.

☒ Bid Form #3: Buy America Certification Rolling Stock
Should the Vendor be declared responsive and low bid, pursuant to Pre-Award and Post Delivery Audit Requirements, the Division will require the Vendor to submit documentation (with the bid or prior to any award) that lists:

1) Component and sub-component parts of the rolling stock to be purchased identified b manufacturer of the parts, their country of origin and cost: and

2) The location of the final assembly point for the rolling stock, including a description of the activities that will take place at the final assembly point and the cost of final assembly.

☒ Bid Form #4: Federal Motor Vehicle Safety Standards Certification

Vendor shall also supply with bid a breakdown of FMVSS standards to be met with proposed vehicle.

☒ Bid Form #5: Certification of Primary Participant Regarding Debarment, Suspension, and Other Responsibility Matters

☒ Bid Form #6: Vendor's Certification of Understanding and Acceptance

☒ Bid Form #7: Certification of Restrictions on Lobbying

☒ Bid Form #8: Certification of Compliance with FTA's Vehicle Testing Requirements
A copy of the vehicle testing report should be included with the bid.

☒ Exhibit A Pricing Page (8)

DOCUMENTATION TO BE SUBMITTED WITH BID:

Section Referenced	
[X] 3.2	Chassis: product description, warranty information and product literature.
[X] 3.3	Engine shall be 3.7 Liter V-6 gasoline engine: provide product description, warranty information and product literature.
[X] 3.17.1	Radio: AM/FM/BT/SYNC Radio With 4" Display provide product description, Warranty information and product literature.
[X] 3.8	Transmission: provide product description, warranty information and product literature.
[X] 3.5	Radiator and Cooling System: provide product description, warranty information and product literature.
[X] 3.6	High Idle System, provide product description, warranty information and product literature.
[X] 3.13	Brakes: provide product description, warranty information and product literature.
[X] 3.11.4	Tilt Wheel, Cruise Control and Power Steering: provide details of water testing procedures.
[X] 3.21	Wheelbase: provide length of proposed wheelbase.
[X] 3.9.4	Rear View Back-Up Camera: provide product description, warranty information and literature.
[X] 3.14	Wheels: provide product description, warranty information and product literature.
[X] 3.15	Tires: provide product description, warranty information and product literature
[X] 3.16.6	Battery: provide product description, warranty information and product literature
[X] 3.16.5	Alternator: provide product description, warranty information and product literature
[X] 3.26	Front and Rear Heating and Air Conditioning: provide product description, warranty information, product literature.
[X] 3.19	Body Specifications: provide a description of how conversion will take place and meet the specification requirements. Provide Actual Interior height and Body length of proposed vehicle.

[X] 3.21	Sealant, Rustproofing and Undercoating: provide product description, warranty information and product literature.
[X] 3.19	Passenger Doors and Stepwells: Provide product description, dimensions, description of interlock system of all doors and locks to be provided.
[X] 3.29	Flooring: provide a description of product to be used, samples of floor covering, colors to be used and assembly process.
[X] 3.22	Seats, Grab Handles, Passenger restraints: provide product description, warranty information and product literature.
[X] 3.34	Mobility Aid/ Occupant Restraint Systems: provide product description, warranty information and product literature.
[X] 3.44	Training: submit letter of understanding to the terms in this Section.
[X] 3.35.4	Security Cameras System provide product description, warranty information and product literature.
[X] 4.12.2	Warranty on Complete Vehicle.
[X] 4.12.3	Warranty on Basic Vehicle Structure.
[X] 4.12.5	Warranty: warranties to be provide on subsystems and components.
[X] 7.3	Complete two (2) bids in binder form –one (1) marked for DPT.
[X] 9.2 A	Complete mechanical description of vehicle, its construction and equipment including manufacturer's model name and / or number.
[X] 9.2 B	Proposed interior floor plans, showing detailed dimensions including the location of the wheelchair securement system.
[X] 9.2 C	Curb weight (empty weight) and gross vehicle weight rating (GVWR of vehicle.
[X] 9.2 D	Exterior Vinyl Colors: provide samples/chart of available colors.
[X] 9.2 H	Identification of the conversion location of the van and listing of activities to take place at the location.
[X] 9.2 I	A list of five (5) users names, addresses, emails and telephone numbers who have been provided similar equipment.
[X]	Addendum Acknowledgement

Request for Quotation
156" Wheelbase Transit Van Dual Rear Wheel (DRW) Narrow Body Cutaway Vehicle
Exhibit A - Pricing Page

CLASS	ITEM DESCRIPTION	UNIT PRICE PER VEHICLE	EST QTY	EXTENDED PRICE
A	Vehicle Non-Accessible / Paratransit Package		2	$
B	Vehicle with One Wheelchair (WC) Positions/ Paratransit Package		2	$
C	Vehicle with Two Wheelchair (WC) Position / Paratransit Package		2	$
D	Vehicle/ Front Lift / 3 WC Positions		2	$
E	Vehicle/ One Wheelchair (WC)/ Fixed Route Package		2	$
F	Vehicle/Two WC / Fixed Route Package		2	$
G	Vehicle/ Front Lift / Three Wheelchair Positions/ Fixed Route Package		2	$
H	Vehicle/ One WC Position / Fixed Route Package / Full Bus Paint		2	$
I	Vehicle / 2 WC Positions / Fixed Route Package / Full Bus Paint		2	$
J	Vehicle /Front Lift / Three WC Positions/ Full Bus Paint		2	$
K	Vehicle/One WC/Fixed Route Package/ Three Quarter Body Paint with Expanded Graphics Vehicle Skirt Painting		2	$
L	Vehicle/Two WC/Fixed Route Package/ Three Quarter Body Paint with Expanded Graphics Vehicle Skirt Painting		2	$
M	Vehicle/Front Lift / Three WC/Fixed Route Package/ Three Quarter Body Paint with Expanded Graphics		2	$
N	Vehicle/One WC/Fixed Route Package/Vehicle Skirt Painting		2	$
O	Vehicle / Two WC Position/ Fixed Route Package / Vehicle Skirt Painting		2	$
P	Vehicle /Front Lift / Fixed Route Package / Vehicle Skirt Painting		2	$
				$
A1	Option to add Bus Driver Safety Barrier		2	$
	TOTAL BID AMOUNT FOR EVALUATION			$

Complete form provided.
Please note these are only estimated quantities and do not reflect any guarantee of purchase
The DPT may purchase more or less as needed.

EXHIBIT B, VINYL LOGOS AND STRIPES

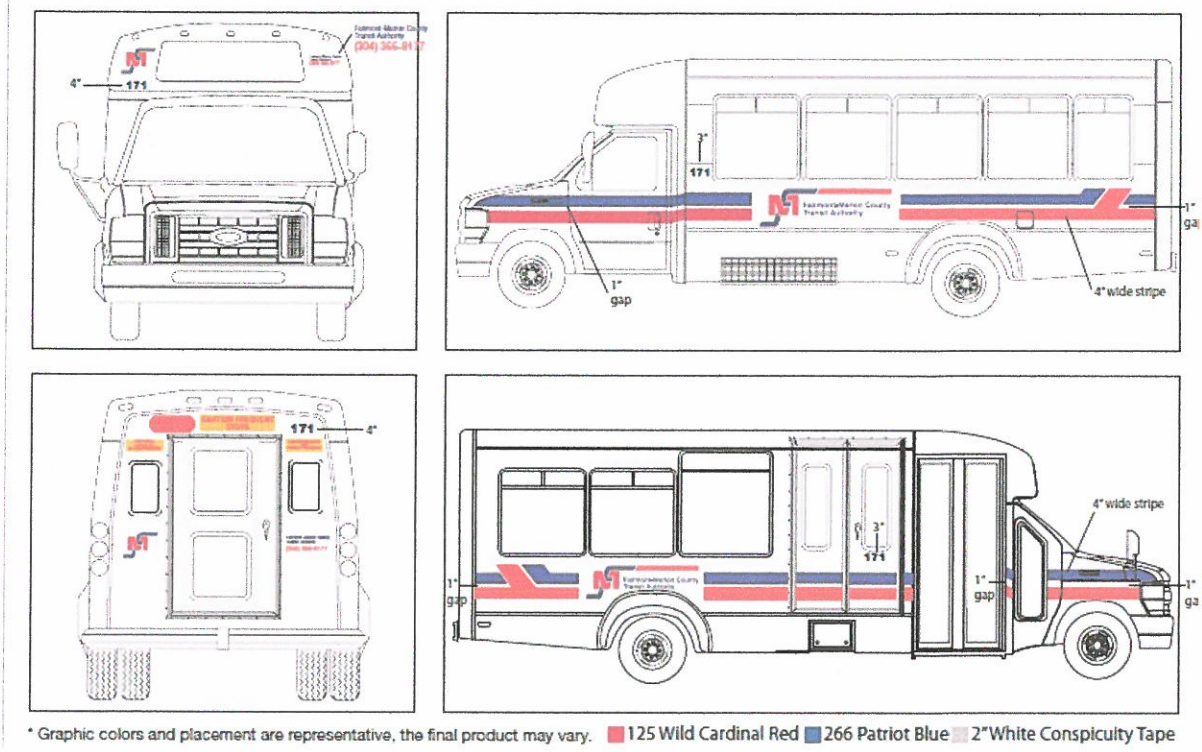
CENTRA





EXHIBIT B, VINYL LOGOS AND STRIPES

Fairmont-Marion County Transit Authority



* Graphic colors and placement are representative, the final product may vary. 125 Wild Cardinal Red 266 Patriot Blue 2"White Conspicuity Tape

EXHIBIT B, VINYL LOGOS AND STRIPES

HERE & THERE TRANSIT





EXHIBIT B, VINYL LOGOS AND STRIPES

Ohio Valley Eastern Ohio Regional Transit





OHIO VALLEY
Regional Transit
EASTERN OHIO

EXHIBIT C, EXAMPLES OF PAINT SCHEMES

Bluefield Area Transit





EXHIBIT C, EXAMPLES OF PAINT SCHEMES

Buckwheat Express





EXHIBIT C, EXAMPLES OF PAINT SCHEMES

Kanawha Valley Regional Transit Authority

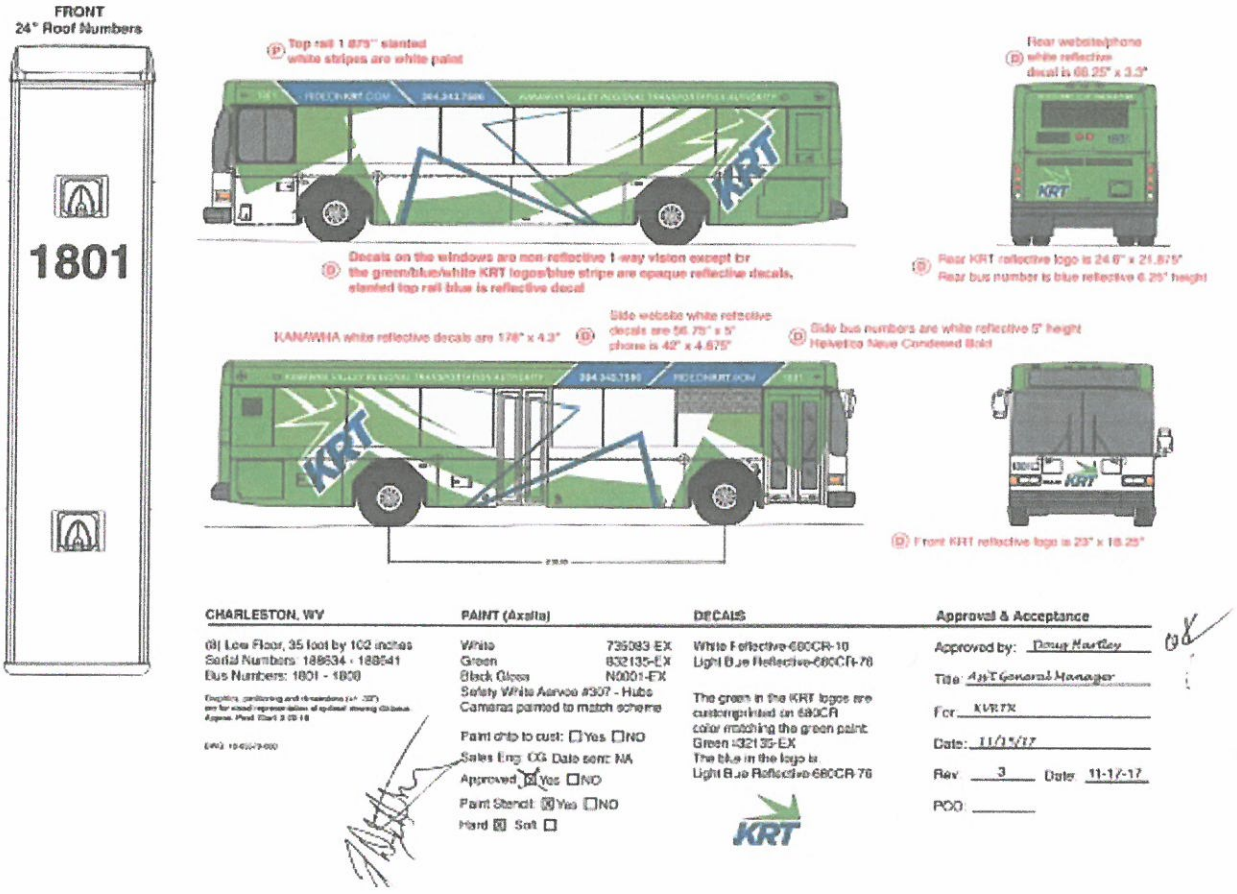


EXHIBIT C, EXAMPLES OF PAINT SCHEMES

Eastern Panhandle Transit Authority

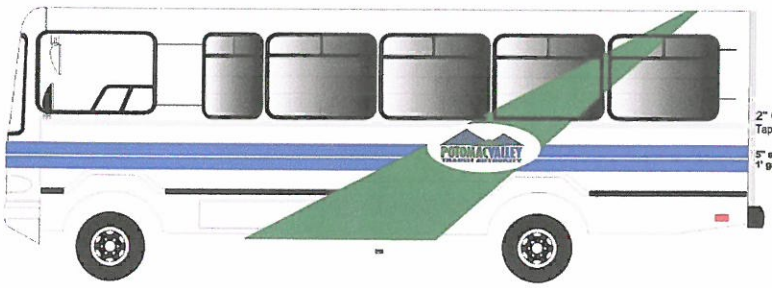


EXHIBIT C, EXAMPLES OF PAINT SCHEMES

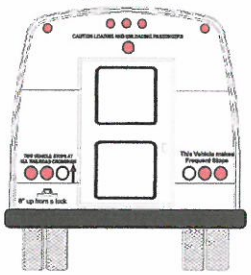
Potomac Valley Transit Authority

Paint Scheme form

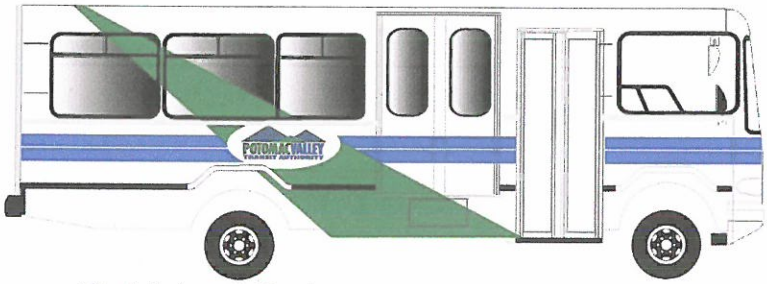
Unit # —

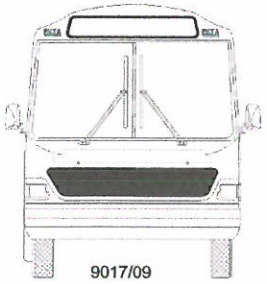


Sales: Jamie Lipka
CC.Rebecca Tyack



2" Conspicuity Tape





9017/09

Vinyl Colors & Numbers

1.) # 140 Blue

2.) _____

3.) # Spectra Everglade Green

Customer Signature

Generic form

Robin Miller
(Graphics Dept.)

February 16,06

EXHIBIT C, EXAMPLES OF PAINT SCHEMES

Little Kanawha Transit Authority



EXHIBIT C, EXAMPLES OF PAINT SCHEMES

Tri-State Transit Authority





EXHIBIT C, EXAMPLES OF PAINT SCHEMES

Mid-Ohio Valley Transit Authority



EXHIBIT C, EXAMPLES OF PAINT SCHEMES

Tri-River Transit





EXHIBIT C, EXAMPLES OF PAINT SCHEMES

Mountain Line Transit Authority





EXHIBIT C, EXAMPLES OF PAINT SCHEMES

New River Transit



EXHIBIT C, EXAMPLES OF PAINT SCHEMES

Mountain Transit Authority

Paint Scheme Mountain Transit Authority

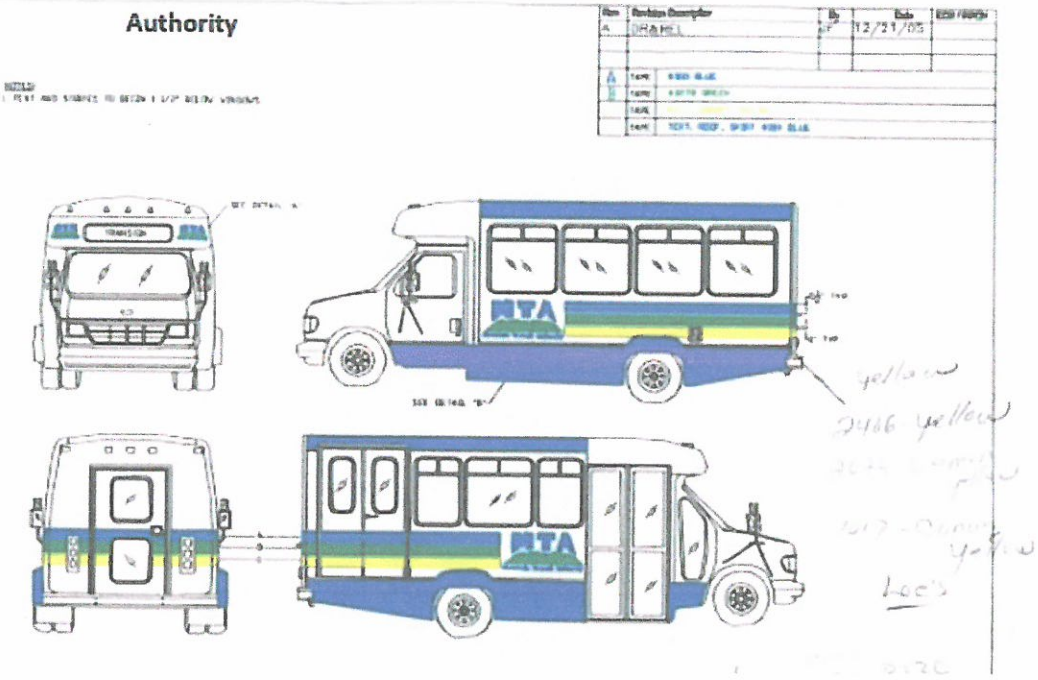
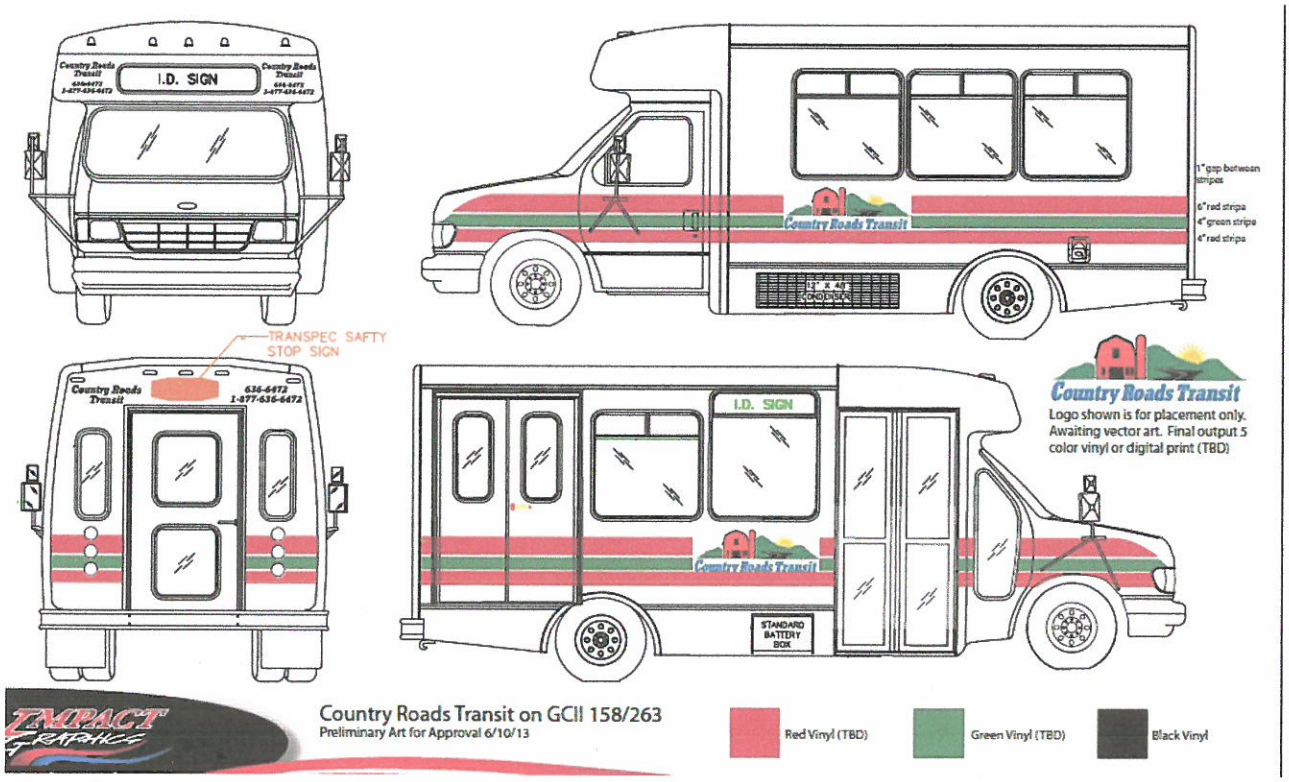


EXHIBIT C, EXAMPLES OF PAINT SCHEMES

Country Roads Transit



STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Sonny Merryman Inc.

Authorized Signature: _____ Date: 07/22/2020

State of Virginia

County of Campbell, to-wit:

Taken, subscribed, and sworn to before me this ___ day of _____, 20___.

My Commission expires _____, 20___.

AFFIX SEAL HERE

NOTARY PUBLIC _____

West Virginia Ethics Commission

Disclosure of Interested Parties to Contracts

Pursuant to *W. Va. Code* § 6D-1-2, a state agency may not enter into a contract, or a series of related contracts, that has/have an actual or estimated value of $1 million or more until the business entity submits to the contracting state agency a Disclosure of Interested Parties to the applicable contract. In addition, the business entity awarded a contract is obligated to submit a supplemental Disclosure of Interested Parties reflecting any new or differing interested parties to the contract within 30 days following the completion or termination of the applicable contract.

For purposes of complying with these requirements, the following definitions apply:

"Business entity" means any entity recognized by law through which business is conducted, including a sole proprietorship, partnership or corporation, but does not include publicly traded companies listed on a national or international stock exchange.

"Interested party" or *"Interested parties"* means:

(1) A business entity performing work or service pursuant to, or in furtherance of, the applicable contract, including specifically sub-contractors;
(2) the person(s) who have an ownership interest equal to or greater than 25% in the business entity performing work or service pursuant to, or in furtherance of, the applicable contract. (This subdivision does not apply to a publicly traded company); and
(3) the person or business entity, if any, that served as a compensated broker or intermediary to actively facilitate the applicable contract or negotiated the terms of the applicable contract with the state agency. (This subdivision does not apply to persons or business entities performing legal services related to the negotiation or drafting of the applicable contract.)

"State agency" means a board, commission, office, department or other agency in the executive, judicial or legislative branch of state government, including publicly funded institutions of higher education: Provided, that for purposes of W. Va. Code § 6D-1-2, the West Virginia Investment Management Board shall not be deemed a state agency nor subject to the requirements of that provision.

The contracting business entity must complete this form and submit it to the contracting state agency prior to contract award and to complete another form within 30 days of contract completion or termination.

This form was created by the State of West Virginia Ethics Commission, 210 Brooks Street, Suite 300, Charleston, WV 25301-1804. Telephone: (304)558-0664; fax: (304)558-2169; e-mail: ethics@wv.gov; website: www.ethics.wv.gov.

Revised June 8, 2018

West Virginia Ethics Commission

Disclosure of Interested Parties to Contracts

(Required by *W. Va. Code* § 6D-1-2)

Name of Contracting Business Entity: Sonny Merryman Inc. **Address:** 5120 Wards Road Evington, VA. 24550

Name of Authorized Agent: C. Chad Seals **Address:** Same as above

Contract Number: PTR2000000003 **Contract Description:** 156" WB DRW Narrow Body Cutaway

Governmental agency awarding contract: _____

☒ **Check here if this is a Supplemental Disclosure**

List the Names of Interested Parties to the contract which are known or reasonably anticipated by the contracting business entity for each category below *(attach additional pages if necessary)*:

1. **Subcontractors or other entities performing work or service under the Contract**
   ☐ Check here if none, otherwise list entity/individual names below.

2. **Any person or entity who owns 25% or more of contracting entity (not applicable to publicly traded entities)**
   ☐ Check here if none, otherwise list entity/individual names below.

3. **Any person or entity that facilitated, or negotiated the terms of, the applicable contract (excluding legal services related to the negotiation or drafting of the applicable contract)**
   ☐ Check here if none, otherwise list entity/individual names below.

Signature: _____ Date Signed: 07/23/2020

Notary Verification

State of _____, County of _____:

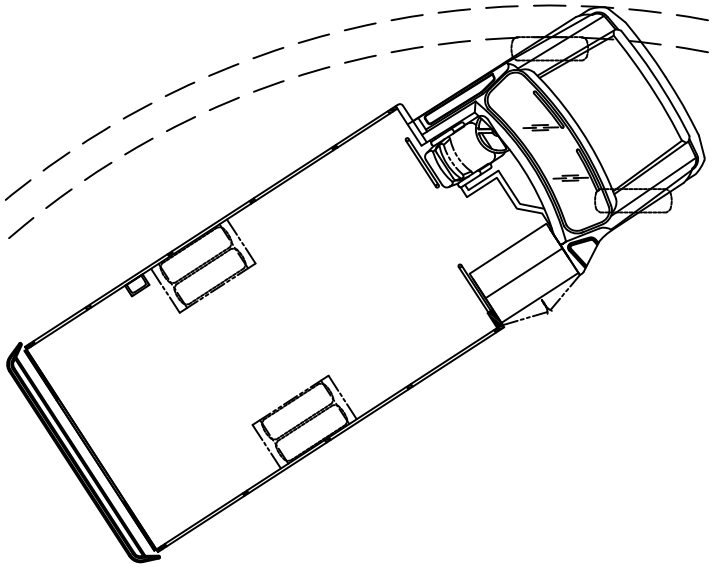
I, _____, the authorized agent of the contracting business entity listed above, being duly sworn, acknowledge that the Disclosure herein is being made under oath and under the penalty of perjury.

Taken, sworn to and subscribed before me this _____ day of _____, _____.

_____
Notary Public's Signature

To be completed by State Agency:
Date Received by State Agency: _____
Date submitted to Ethics Commission: _____
Governmental agency submitting Disclosure: _____

Revised June 8, 2018



Ⓐ CURB TO CURB

Ⓑ WALL TO WALL

FORD
1. 138" WB 20' SENATOR II A. 23'-6" B. 26'-0"
2. 158" WB 22' SENATOR II A. 27'-0" B. 28'-0"
3. 158" WB 24' SENATOR II A. 27'-0" B. 28'-6"
4. 176" WB 25' SENATOR II A. 30'-0" B. 31'-0"
5. 190" WB 26' SENATOR II A. 31'-4" B. 32'-9"
6. 208" WB 27' SENATOR II A. 34'-6" B. 36'-5"
7. 212" WB 27' SENATOR II A. 35' B. 37' *ESTIMATED*

CHEVY
1. 139" WB 20' SENATOR II A. 22'-8" B. 24'-5"
2. 159" WB 22' SENATOR II A. 26'-2" B. 28'-0"
3. 159" WB 24' SENATOR II A. 24'-2" B. 25'-3"
4. 177" WB 25' SENATOR II A. 27'-2" B. 28'-3"

FORD TRANSIT
1. 137" WB 20' CANDIDATE II A. 22'-8" B. 24'-5"
2. 156" WB 22' CANDIDATE II A. 26'-2" B. 28'-0"

NOTE: ACTUAL UNIT MAY VARY.

THIS DRAWING AND THE INFORMATION THEREON ARE THE EXCLUSIVE PROPERTY OF STARTRANS BUS, A DIVISION OF FOREST RIVER. IT SHALL NOT BE COPIED OR DUPLICATED IN ANY MANNER, NOR SHALL IT BE SUBMITTED TO OUTSIDE PARTIES FOR EXAMINATION WITHOUT OUR WRITTEN CONCENT. IT IS LOANED FOR USE WITH REFERENCE TO WORK UNDER CONTRACT WITH, OR PROPOSALS SUBMITTED TO STARTRANS BUS, A DIVISION OF FOREST RIVER.

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

TOLERANCE UNLESS OTHERWISE SPECIFIED

WOOD	OTHER
± 1/8"	± 1/16"
± 1°	± 1/2°

STARTRANS a division of Forest River, Inc.

DATE: 06/07/18

NAME: MK

TITLE: TURNING RADIUS KEY STAR TRANS

DWG. No. 31-28-0935-13

	FSTL Final Test Report	Test Facility: FSTL
Test Date: 10/17/2013	Test Procedure: FMVSS-207/210	4545 W. Augusta Blvd. Chicago, IL 60651

Description of Item Tested

All test items are obtained according to FSTL procedure LAI-011 unless otherwise noted. All items are tested for compliance with applicable standards, previously reviewed and approved by the party requesting this test, unless otherwise specifically noted:

Starcraft installed a FSC, forward facing, wall mounted, foldaway seat [32297] in a Starcraft Test Buck. Please see attached drawings.

Description of Results



Summary of FMVSS 571.207.S4.2a & Section 571.210.S5.1

A force of 5,000 lb shall be applied to each lap belts at 10° ± 5° above the horizontal plane. In addition, a separated force equal to 20 times the seat system mass was applied simultaneously through the CG of the seat. The required forces must be reached within 30 seconds from the onset of the test then, when reached must be held for 10 seconds.

Note: Full compliance with FMVSS and its Regulations, as set forth under 49 USC 301, et. seq., can only be achieved through proper in-vehicle testing. Freedman Seating Company, its agents, employees, affiliates and subsidiaries ("Freedman Seating") is not liable for damages resulting from the installation of any seat in a vehicle that has not been FMVSS tested or any installation of a seat that deviates from a FMVSS tested installation method. Freedman Seating has no responsibility for the design of any vehicle in which the subject seat may be placed, or any resulting damages.

Test Opinions and Interpretations

Note: This Test Report is provided solely for the use of the party requesting the same identified below, and for no other person, entity or purpose. Reproduction of this document is strictly prohibited without the prior written permission of FSTL in each instance.

see page 2 for results

Test Report Reviewed by:	Digitally signed by Miguel Flores DN: cn=Miguel Flores, email=miguelf@freedmanseat.com, o=Freedman Seating Co, ou=FSTL, c=US Date: 2013.10.21 09:58:48 -05'00'	Test Requested By: Larry Hall, Forest River / Starcraft 2367 Century Drive, Goshen In
Test Report Approved by:	Digitally signed by David I O'Malley DN: cn=David I O'Malley, email=davido@freedmanseat.com, o=FSTL, ou=FSTL, c=US Date: 2013.10.21 11:19:50 -05'00'	Request Received D 10/8/2013

CMVSS/FMVSS 207/210 Data Sheet

FSTL
4545 w. Augusta Blvd.
Chicago, IL.

Work Order No.: 1310C

Requirements for compliant test.	**Yes/ No / N/A**
Test artifact reached CMVSS/FMVSS loads within 30 seconds	yes
Test artifact sustained CMVSS/FMVSS loads for 10 seconds or more	yes
Seat frame released from it's adjusted position?	n/a
Seat frame or seat adjusters detach from the test platform/vehicle?	no
Seat frame detaches from seat adjuster mechanism?	n/a
Seat adjuster seperates?	n/a

Pass/Fail
Pass

Notes:

n/a

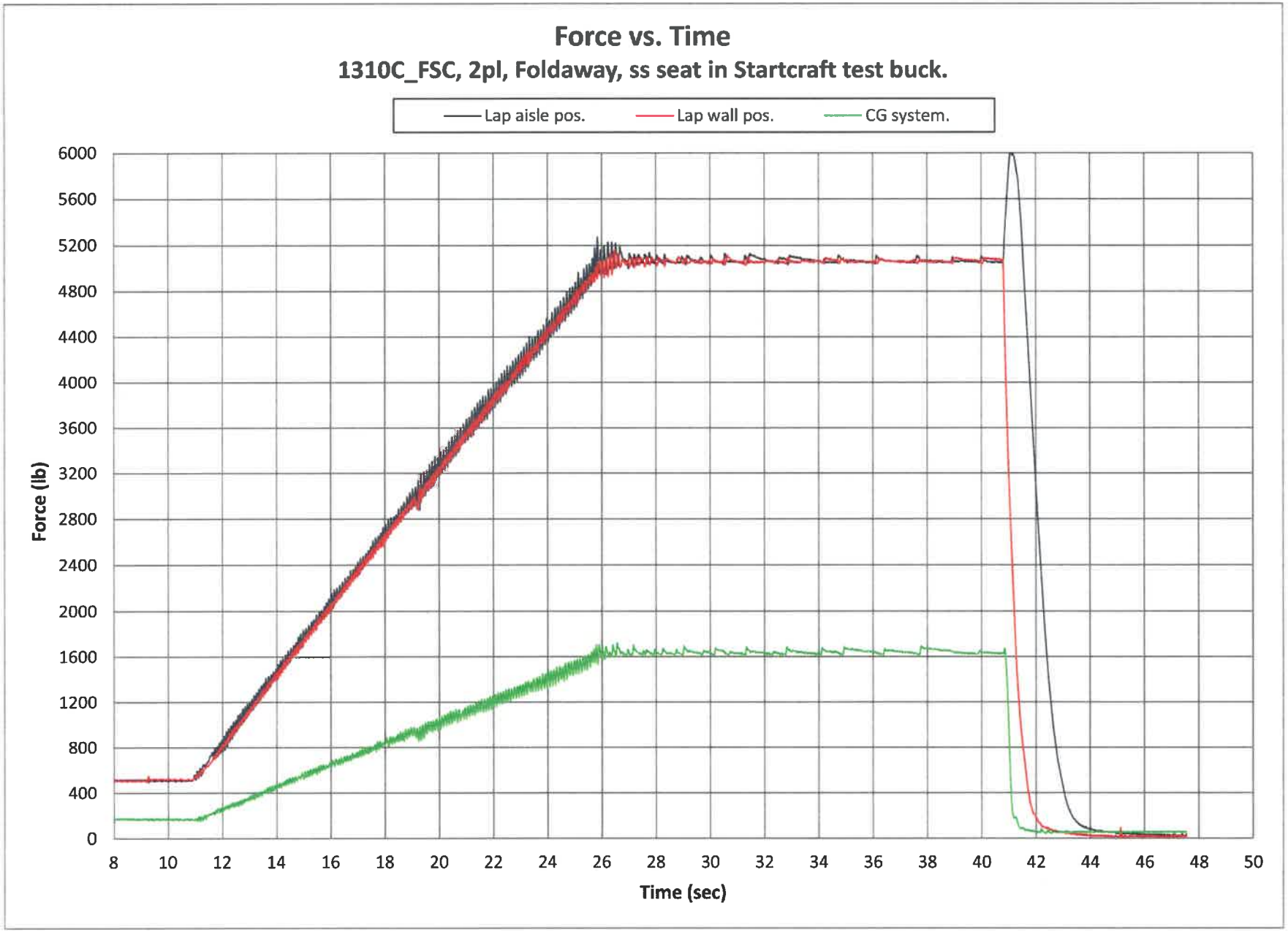
Equipment Documentation

Test Fixtures:

Fixture #:	Description
PL-001	Pull Test Machine
PL-205	Body Block

Measurement Equipment:

Equipment #:	Description	Last Calibration #
LC-002	Load Cell -15K S.N. Y51758	C1308
LC-003	Load Cell -15K S.N. Y68886	C1308
LC-008	Load Cell -15K S.N. 21062367	C1308


Force vs. Time
1310C_FSC, 2pl, Foldaway, ss seat in Startcraft test buck.
Lap aisle pos.
Lap wall pos.
CG system.
Force (lb)
6000
5600
5200
4800
4400
4000
3600
3200
2800
2400
2000
1600
1200
800
400
0
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50
Time (sec)

Pre Test Photo









Post Test Photo






FSTL
4545 W. Augusta Blvd.
Chicago, IL 60651

External Customer Artifact Test Request Work Order Form

Customer [Company]: STARCRAFT BUS Date Generated: 08/26/2013
Contact Name: LARRY HALL FSC Engineer (if Applicable):
Contact Phone Number: 800-348-7440 x252 FSC Salesperson (if Applicable):
Contact E-mail: LHALL@FORESTRIVERINC.COM

What artifact will be tested? FOLDAWAY
Postion of Artifact in Vehicle? D/S FRONT
Specific Name of Vehicle (section)? STARCRAFT BUS

What tests are requested? Tests performed

- ( ) FMVSS 207/210
- (✓) FMVSS/CMVSS 207/210
- ( ) FMVSS 210
- ( ) CMVSS/FMVSS 210
- ( ) FMVSS 49.3S - ADA
- ( ) FSTL_Tensior
- ( ) FMVSS 225 Lower Anchor
- ( ) CMVSS 210.1
- ( ) CMVSS 210.2
- ( ) FMVSS 222 Static Forward
- ( ) FMVSS/CMVSS 222 Static Forward
- ( ) FMVSS 222 Quasi Static
- ( ) FMVSS 222 Static Rearward
- ( ) CMVSS/FMVSS 222 Static Rearward
- ( ) Other

Desired completion date?

Is the test fixture a complete vehicle? ( ) Yes (✓) No

If 'Yes' is checked above, is the fixture drivable? ( ) Yes (✓) No

Required Drawing: Due to size constraints of our laboratory facilities, we require that you provide a drawing to FSTL showing the overall dimensions of the test vehicle, all locations in the vehicle of the seats to be tested, the locations of any structural tie downs and lift points for the vehicle, and the turning radius, if the vehicle is drivable

When will the test fixture be sent? 09/09/2013

When will the test fixture arrive? 09/09/2013

What carrier will deliver the test fixture?

Testing Agency Performing Work: Freedman Seat Test lab
Testing Agency Address: 4545 W Augusta Blvd.
Contact Person: Ted Kolar / Dave O'Malley
Telephone: 773-524-2440
E-mail: fstl@freedmanseat.com

Manufacturer of Item to be Tested:

Attach an assembly drawing and include the assembly drawing number, if available. If no drawing exists, include a sketch describing the assembly. List the fastener types [bolts, washers, and nuts] and sizes, torque values, as well as specific amounts and locations to be used. Include wall and floor reinforcements. Instructions for the specific mounting configuration to the test fixture must also be included [a drawing or sketch is preferred]

Production Model Artifact: (✓) Yes ( ) No **Production Built Artifact:** (✓) Yes ( ) No

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4545 W. Augusta Blvd.
Chicago, IL 60651

Item to be tested is a:

- ○ Finished Assembly - the artifact is a complete upholstered seat
- ○ Unfinished Assembly - seat frame and base frame assembly without foam or cover
- ◉ Weldment - the artifact is a complete welded piece without other attachments
- ○ Other - describe

The test fixture is a:

- ○ Complete New Vehicle
- ○ Complete Used Vehicle
- ◉ Full Scale Vehicle Body Section
- ○ Reduced - Scale Vehicle Body Section
- ○ Other describe

Reason for Test:

Customer Please Note: You are responsible for all shipping and scrap charges for the test vehicle. Test vehicles shall be ready to test before arriving at FSTL. If more than minor modifications are to be made to a test vehicle, FSTL shall perform said modifications at the prevailing hourly rate, plus materials, including but not limited to any assembly, welding, reinforcement, hardware, or supplies. Hardware used to attach the seats to the test platform

◉ Shall be provided by customer ○ As specified by the customer.

General Understanding of Tests. Tests are destructive and may damage the test vehicle structure, likely rendering the test vehicle unusable.

Customer Monitoring of Test: FSTL shall afford you or your designated representative reasonable access to relevant areas of the laboratory for the witnessing of this testing. However, FSTL may restrict the viewing of certain items in these areas in order to maintain the confidentiality of other customers. Will Monitor Testing? ○ Yes ◉ No

This section is to be filled out by FSTL personnel. Work Order Number: 1310C

Scheduled Completion Date: 11/8/13

Date Request Received: 10/8/13 Received By: D. O'Malley

Date Request Reviewed: 10/8/13 Reviewed By: D. O'Malley

Upon reviewing availability of resources and testing capabilities, FSTL is capable of performing this test as requested:

◉ Yes ○ No If not, then the reason being: N/A

This Test Request shall be performed by a competent subcontractor (ISO/IEC 17025 Accredited when Required)

Name of Subcontractor: N/A Chosen By. ○ FSTL ○ Customer ◉ n/a

If chosen by FSTL, the reason being ○ Unforeseen Reason ○ Continuing Base/Arrangement ◉ n/a

Upon receiving a copy of this Review the Customer has been notified in writing of the Testing being Subcontracted: ○ Yes ○ No ◉ n/a

Date Reviewed Request was Submitted to Customer: 10/8/13

Customer review signature: [signature] Date 10/09/13

Test Setup Review Checklist

FSTL
4545 W. Augusta Blvd.
Chicago, IL 60651

OK	DOES NOT APPLY	
✓		Artifact is built to print [welds, gussets, brackets, accessories, etc.]
✓		Artifact has correct fasteners, torques, and fastener engagement.
✓		The correct fasteners and their quantity/location are used to connect the artifact to the test platform or vehicle section.
✓		The artifact is adjusted correctly and engaged [back angle, pedestal height, slide track position, etc.]
✓		Testing fixtures placed correctly. [body and shoulder blocks, SFAD, pushing bars, belt routing, etc.]
✓		Artifact is setup according to supplied setup drawings.
✓		The target loads and holding times are correct.
✓		The ramp rates are correct.
✓		The angles of force application are correct.
✓		The target accelerations, peak to peak displacement, frequencies, time duration, etc. are correct [specific to Vibration tests]

Additional Notes: MA

NOTE : Please provide test lab personnel with specific location[s] to include photographs.

MA

By my signature, I have reviewed the seat assembly to be tested and the test parameters, and find them to be correct. Correcting information gathered on FSTL Records requires the originator to correct the error by lining out the error, provide the correction, and then initial and date the correction.

Seat Designer/Project Engineer Matt Date: 10/17/13

FSTL Personnel D. O'Malley Date: 10/17/13

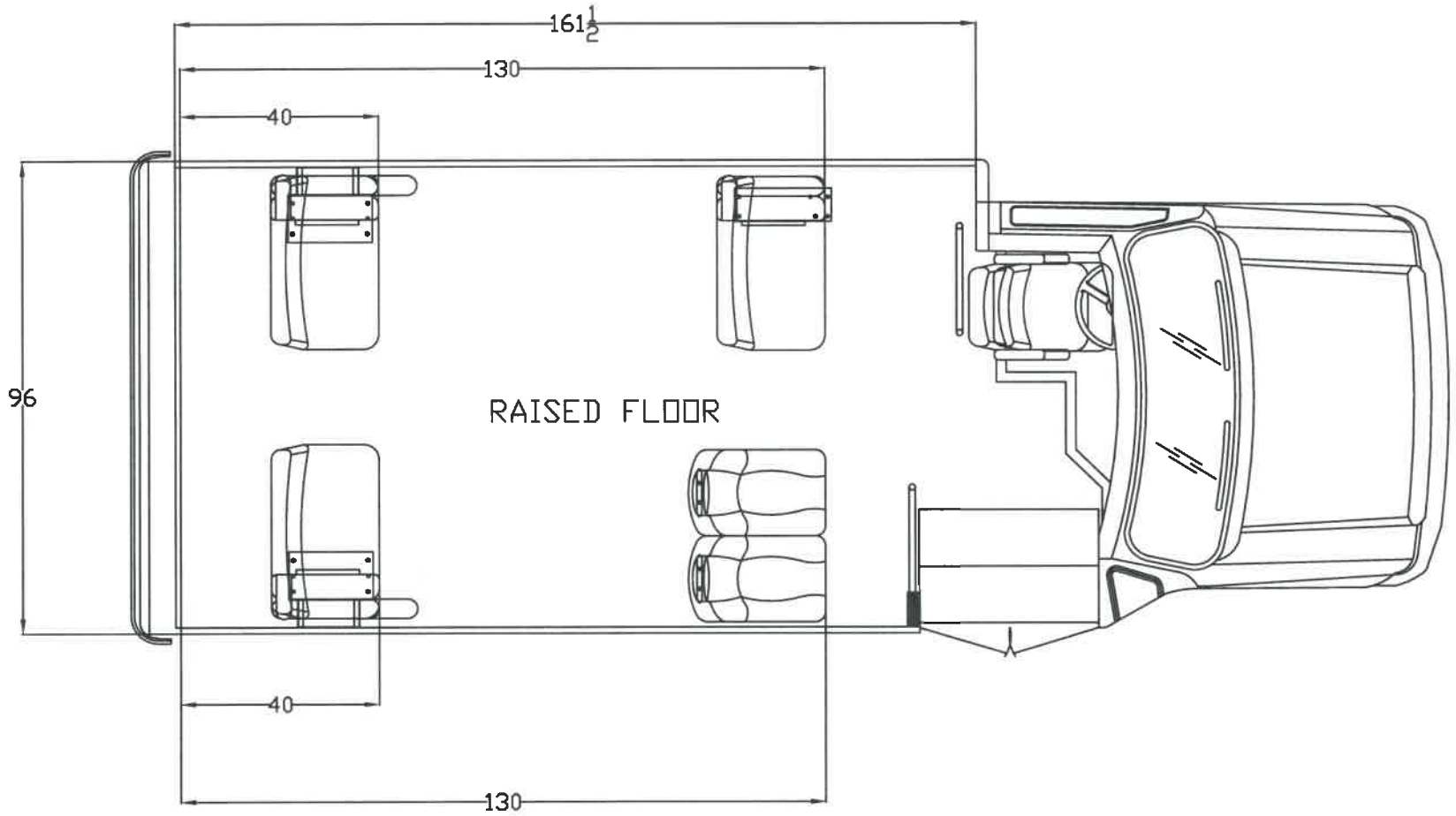
Note: Tests will not be conducted without a copy of this form signed, dated, and completed by the designated seat designer or project engineer.

Test Performed By: Miguel Date: 10/17/13

Test Witnessed By: MA Date: MA

Work Order No.: 1310C

Post test option: Simplified Test Report : Yes ☐ No ☐ n/a ☒



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

TOLERANCE UNLESS OTHERWISE SPECIFIED

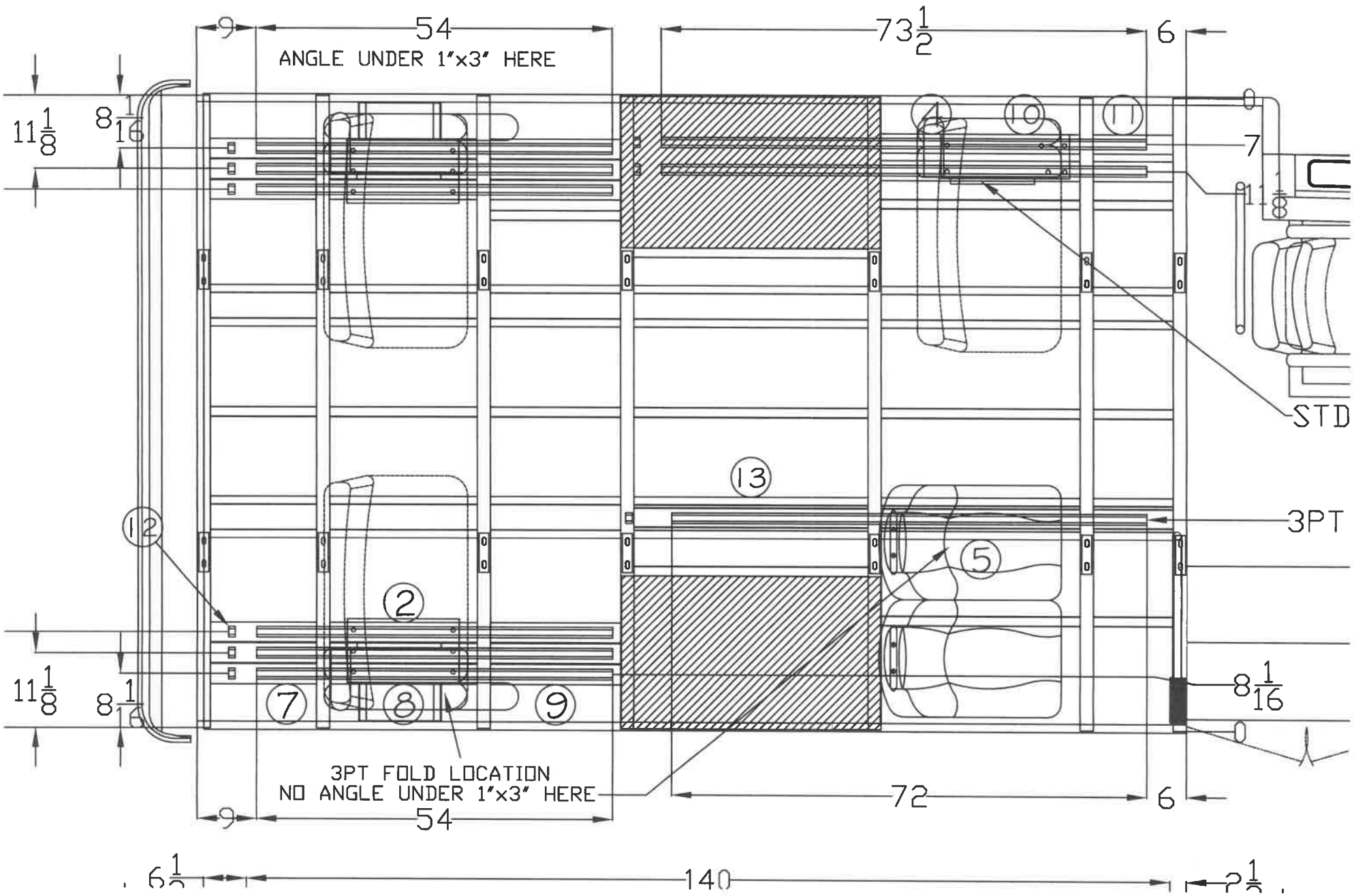
WOOD	OTHER
± 1/8"	±1/16"
± 1°	±1/2°

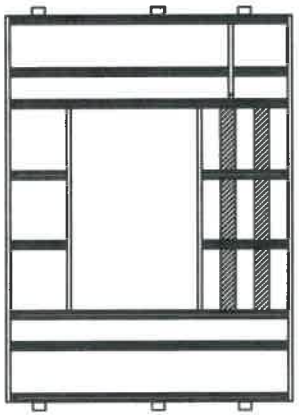
STARCRAFT BUS
a division of Forest River, Inc.

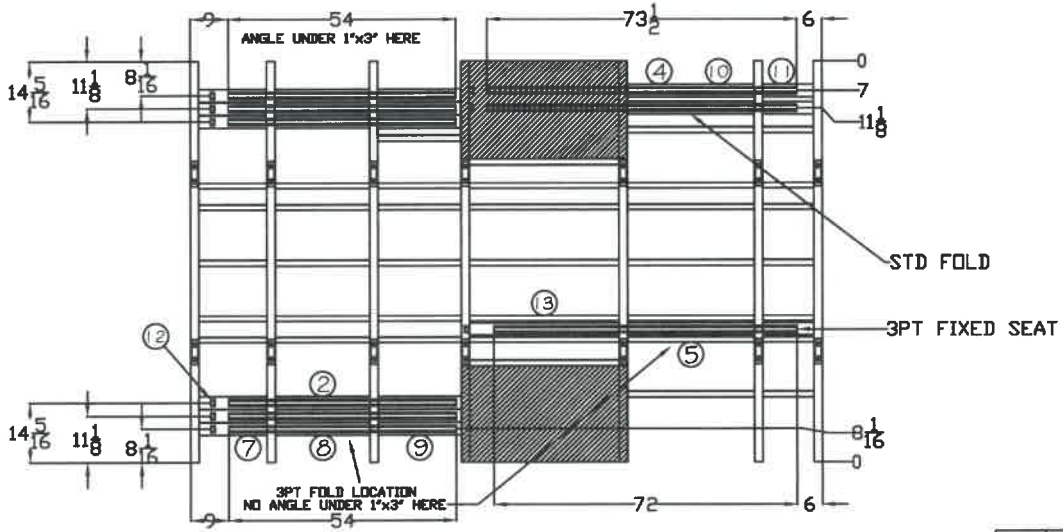
DATE: 06/17/13 NAME: MKLINE

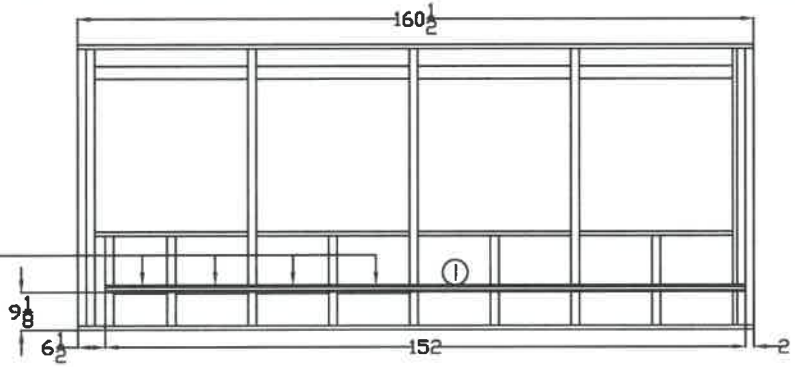
TITLE: FOLDAWAYS MOUNTED IN SEAT TRACK TEST BUCK

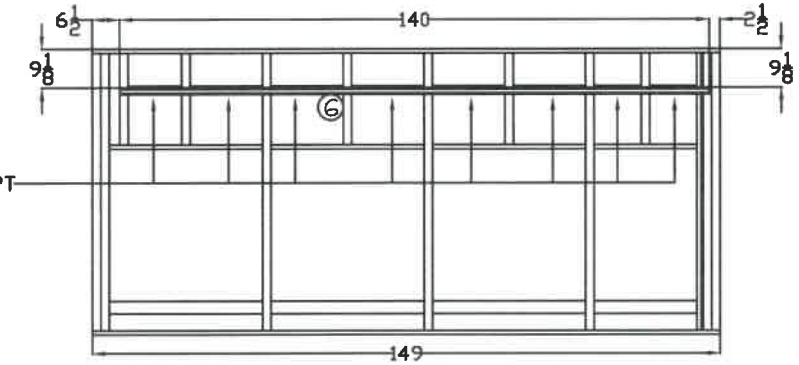
DWG. No. 84080 TEST BUCK SEAT TRACK FOLDS


9
54
ANGLE UNDER 1"x3" HERE
73 1/2
6
11 1/8
8 1/16
7
STD
13
12
3PT
2
5
11 1/8
8 1/16
7
8
9
3PT FOLD LOCATION
NO ANGLE UNDER 1"x3" HERE
9
54
72
6
6 1/2
140
2 1/2









13	1	TUBE: 11ga. 1" x 3" x 35-1/2" Lg.
12	6	SEAT TRACK: 1" Lg.
11	3	TUBE: 11ga. 1" x 3" x 12-1/8" Lg.
10	3	TUBE: 11ga. 1" x 3" x 30-1/8" Lg.
9	5	TUBE: 11ga. 1" x 3" x 19-3/4" Lg.
8	5	TUBE: 11ga. 1" x 3" x 22-3/8" Lg.
7	5	TUBE: 11ga. 1" x 3" x 16-1/8" Lg.
6	1	SEAT TRACK: 140" Lg.
5	1	SEAT TRACK: 72" Lg.
4	2	SEAT TRACK: 136" Lg.
3	2	SEAT TRACK: 26" Lg.
2	3	SEAT TRACK: 54" Lg.
1	1	SEAT TRACK: 152" Lg.

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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: 08/15/13
NAME: MKLINE

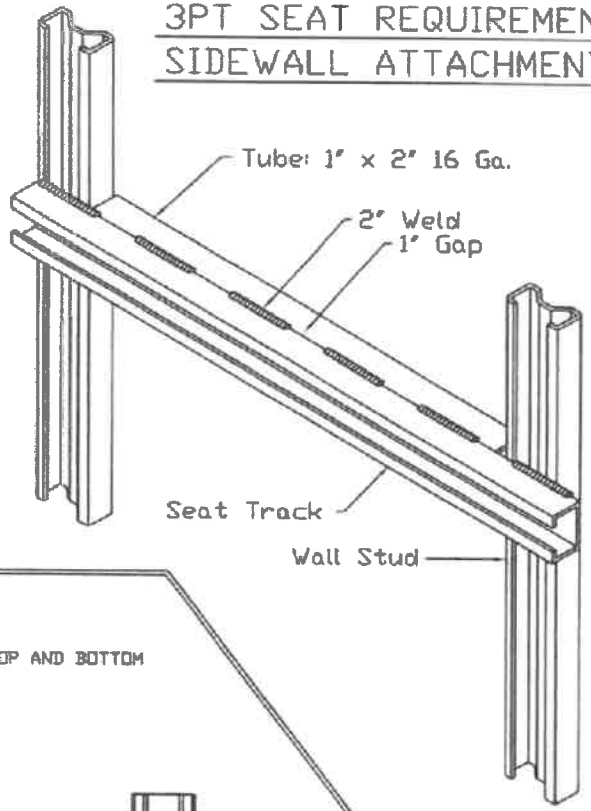
TITLE: FOLDAWAYS MOUNTED IN SEAT TRACK & 3PT TEST BUCK

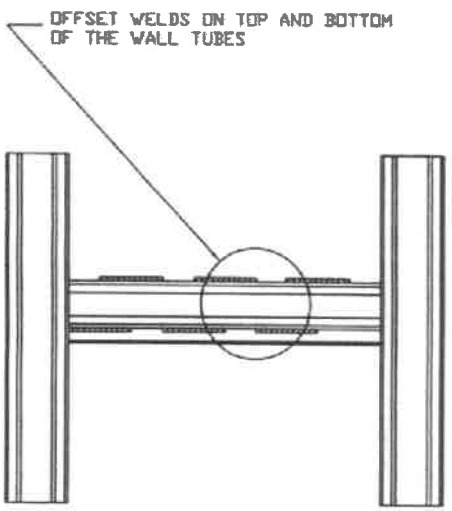
DWG. No. 84080 TEST BUCK SEAT TRACK FOLDS 2 OF 2



(END VIEW)

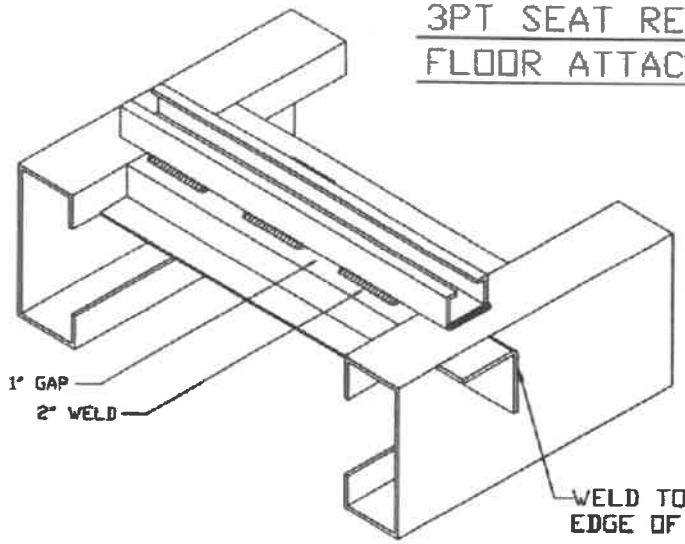
3PT SEAT REQUIREMENTS SIDEWALL ATTACHMENT

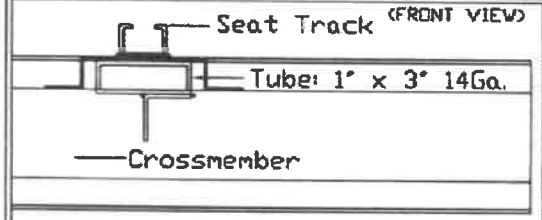


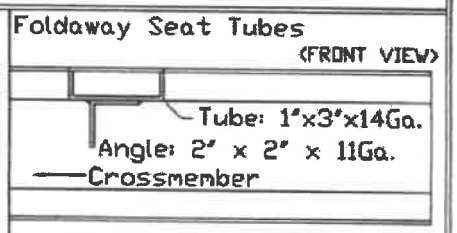


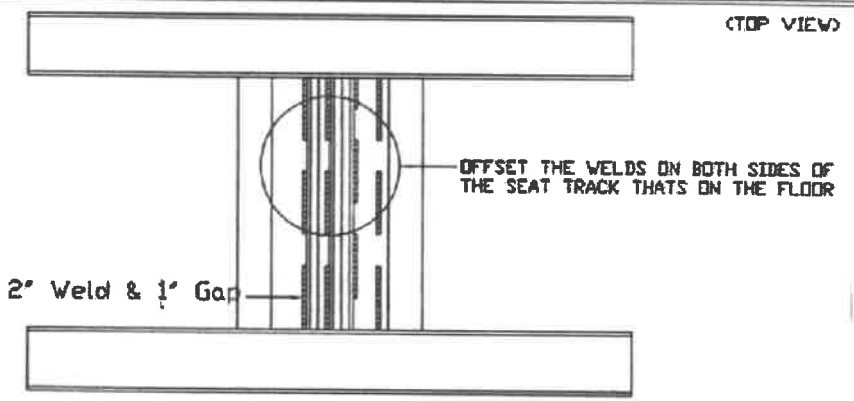
(SIDE VIEW)

3PT SEAT REQUIREMENTS FLOOR ATTACHMENT









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

STARCRAFT BUS

TOLERANCE UNLESS OTHERWISE SPECIFIED		DATE: 08/15/13	TITLE: 3 POINT SEAT REINFORCEMENT 2012 STYLE CUT N BUTT
± .00	± .030	DFTSM: MDK	
± .000	± .015	CHKR:	DWG. No. 84080 SPECIAL 3PT DWG
± .0000	± .005	APRVD:	DISK No. SHEET 2 OF 2

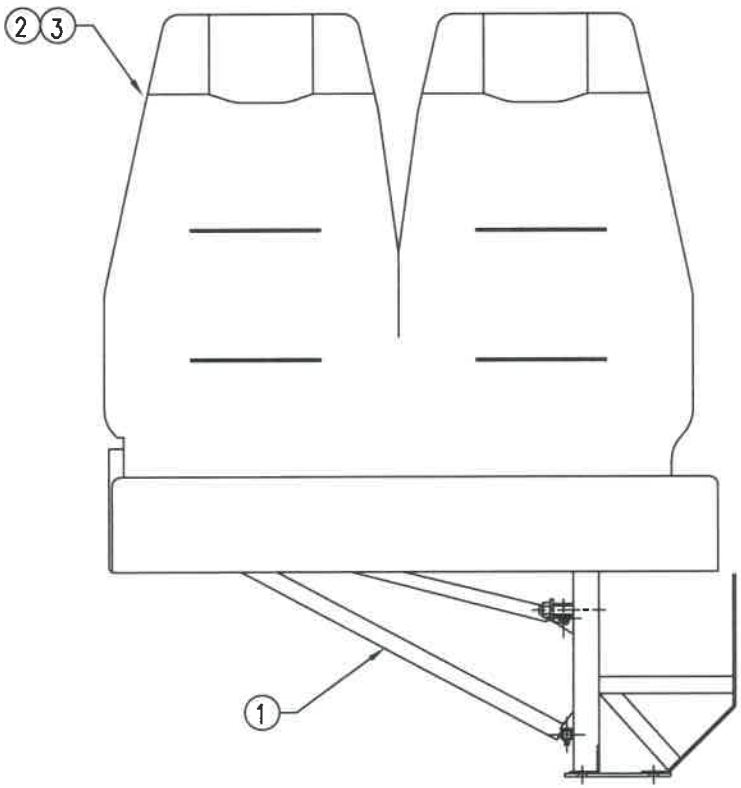
32297

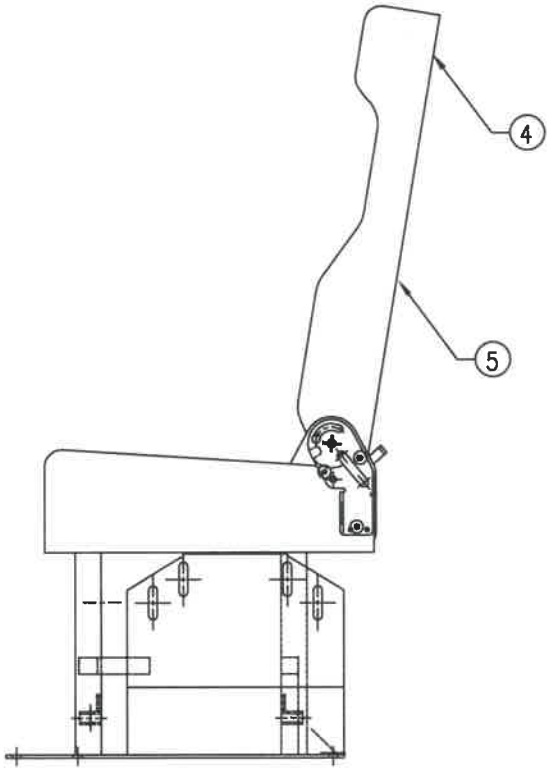
Work Order No.: 1310C

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PROPERTY OF THE FREEDMAN SEATING COMPANY.

ITEM	QTY	PART #	DESCRIPTION
1	1	32187	ASSY, AM2 FOLDAWAY, 2PL, SS
2	1	31238	WELDMENT, FOLDAWAY, HI BACK, BV
3	1	31517	ASSY, FOAM, HI BACK, FRONT FACE, BV
4	1	31398	FOAM, HEADREST, REAR FACE, FOLDAWAY, HI BACK
5	1	31519	FOAM, NOTCH BACK, REAR FACE, BV

NOTE(S) 1) USE DWG. OF ASSY. 32187 AS REF. FOR ASSY 32297,
2) REPLACE SEAT BACK WLDMNT (31313) ON ITEM 1, 32297, WITH ITEM #2.
3) REPLACE SEAT BACK FOAM (31462) ON ITEM 7, 32297, WITH ITEM #3.
4) REPLACE REAR FACE FOAM (31465) ON ITEM 8, 32297, WITH ITEM #4 AND #5.





Rev. Level	Description of Change	By	Date	ECN #
A	RELEASE TO PRODUCTION	JTH	3/06	4584

Tolerance Unless Otherwise Specified
FRAC. 1/X ±1/32
DECIMAL .XX ±0.02"
.XXX ±0.005"
ANGULAR ±1°

Material:
Specifications:
Drawn by: AS
Date: 11/30/05

Freedman Seating Co.
4545 W. Augusta
Chicago, IL 60651

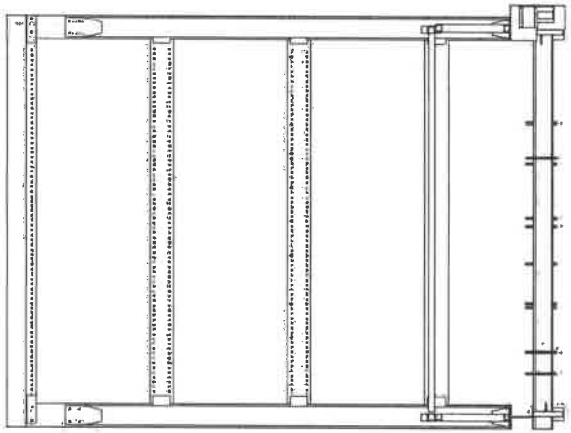
Part Name: SEAT, ASSY, 2PL, FLDWY, AM2, HIBACK, SS

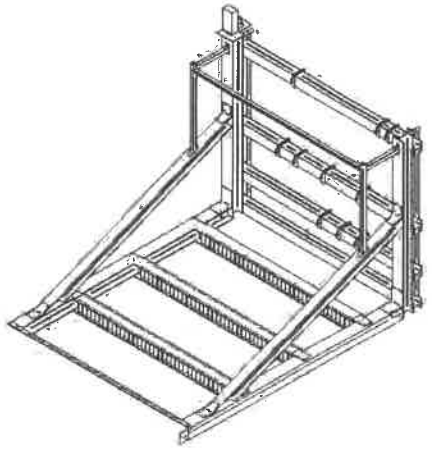
DO NOT SCALE DRAWING

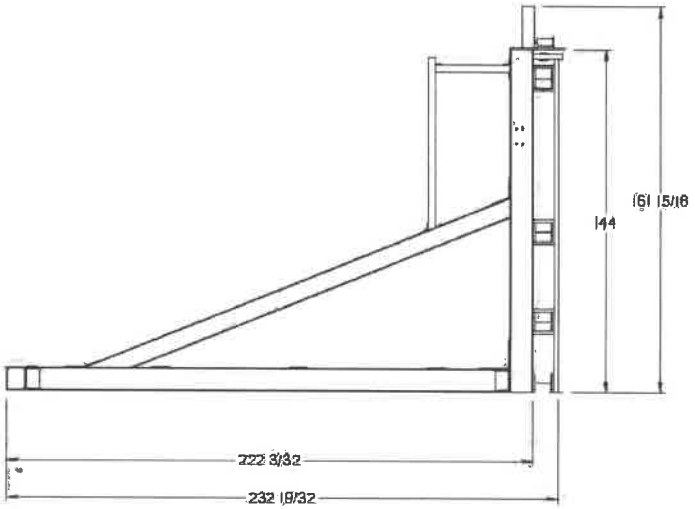
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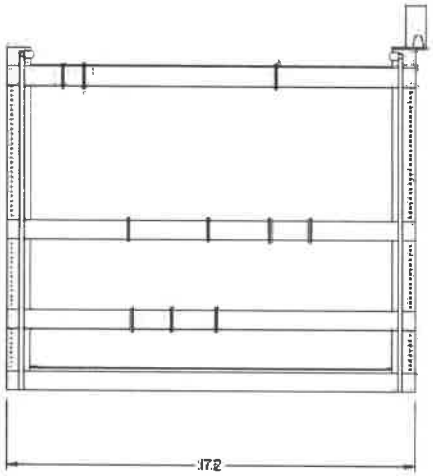
Rev. A

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PROPERTY OF FREEDMAN SEATING COMPANY









Tolerances (Unless Otherwise Specified)
Fractional (X.X) ± .125"
Decimal .XXX ± 0.02"
.XXXX ± 0.005"
Angular ± 1 Degree
Uncontrolled Radii ± .125"

FL-02

SIZE D

SCALE: 1:10 WEIGHT: SHEET 1 OF 1

American Association for Laboratory Accreditation

Accredited Laboratory

A2LA has accredited

FSTL

Chicago, IL

for technical competence in the field of

Mechanical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 24th day of May 2013.

President & CEO
For the Accreditation Council
Certificate Number 2324.01
Valid to June 30, 2015

For the tests to which this accreditation applies, please refer to the laboratory's Mechanical Scope of Accreditation.

American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

FSTL
4545 W. Augusta Blvd.
Chicago, IL 60625
Dave Klopp (773) 524 2440

MECHANICAL

Valid To: June 30, 2015 Certificate Number: 2324.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on transportation seating products:

Test	**Test Methods**
Seating Systems*: Tension (0 to 9000) pounds	FMVSS 571.207; CMVSS 207; FSTL Tension Test Procedures LP03, LP25, LP28
Seat Belt Assembly Anchorages*: Tension (0 to 9000) pounds	FMVSS 571.210; CMVSS 210; FSTL Tension Test Procedures LP03, LP25, LP28
Child Restraint Anchorage Systems*: Tension (0 to 9000) pounds	FMVSS 571.225; CMVSS 210.1, 210.2; FSTL Tension Test Procedures LP03, LP25, LP28
School Bus Passenger Seating and Crash Protection*: Tension (0 to 9000) pounds Compression (0 to 5000) pounds Displacement (0 to 36) inches Seat performance forward and reward. Seat cushion latching and retention. Quasi-static test of compartmentalization and Type 2 seat belt performance.	FMVSS 571.222; CMVSS 222
Compression*: (0 to 5000) lbs	FSTL Compression Test Procedures LP04, LP23, LP25, LP28

5301 Buckeystown Pike, Suite 350 | Frederick, Maryland 21704-8373 | Phone: 301 644 3248 | Fax: 301 662 2974 | www.A2LA.org

Test	**Test Methods**
Cyclic Fatigue*: (100 ± 250) pounds (0 ± 12) inches (0 ± 10) hertz	FSTL Fatigue Test Procedures LP02, LP24
Displacement*: (0 to 36) inches	FSTL Displacement Test Procedures LP01
Vibration (Hydraulic Single Axis)*: (0 ± 3) inches (0 ± 10) hertz (0 ± 30) g	FSTL Vibration Test Procedures LP29, LP30, LP31
Devices for Use in Defining and Measuring Vehicle Seating Accommodation – Hpoint: Displacement (0 to 36) inches	SAE J826 (November 2008)

**Also using similar test methods based on the parameters listed above.*

Certificate Of Calibration

Equipment Calibration was performed at the address below for

FSTL

4545 W. AUGUSTA BLVD.

CHICAGO, IL 60651-

QA Reviewed by
Aug-23-2013

Date of Calibration

Wednesday, August 07, 2013

Calibration Performed By

Cal~Rite Corporation, Naperville, IL

ACCREDITED
Certificate # 866.01
Calibration

Machine Profile

Customer # : LC-002

Manufacturer:	*RICE LAKE*	**Capacity:**	*9000*	**Next Calibration:**	*07-Feb-2014*
Model:	*RL20001-T10-15K*	**Serial #:**	*Y51758-T*	**Temp/Humidity:**	*82.1 F/58.3%*

Language: Lbs

Force Calibration Result

Accuracy 0.5 %

Range	Verified Range Force	Uncertainty %	Maximum Error %
9000.000	1000.000 - 9000.000	0.30	0.19

CAL-RITE CORPORATION HAS CALIBRATED THE TESTING EQUIPMENT DESCRIBED ABOVE IN ACCORDANCE WITH THE LATEST SPECIFICATIONS (10-CFR-21, ISO/IEC 17025 AND ISO 10012-1 AND MIL-STD 45662A). ALL VERIFICATION DEVICES CALIBRATED IN ACCORDANCE WITH ASTM-E74 PRACTICES AND ARE TRACEABLE TO NIST. THIS CERTIFICATE RELATES ONLY TO THE ITEMS CALIBRATED.
THE UNCERTAINTY OF THE CALIBRATION PROCESS WAS ESTIMATED AT THE 95% CONFIDENCE LEVEL (K=2).
THE EQUIPMENT LISTED ABOVE HAS MET ALL APPLICABLE CLAUSES OF THE GOVERNING SPECIFICATION UNLESS NOTED BELOW.

☐ 10.1 Lower Limit below 200X Resolution
☐ 10.3 Less than 5 readings taken below 10% FS
☐ 10.5 Does not return to zero in 30 seconds
☐ 18.3 Does not meet +/- 1 % accuracy requirement.

Specification: **ASTM E 4-10** ***QMS Revision:*** **01-13**

Service Comments: Inspected load cell. Performed a calibration procedure in accordance with ASTM specifications from 1,000 Lbs to 9,000 Lbs in tension. All readings were within the established 0.5% tolerance and repeatable. Unit is in good working condition at this time.

As Found Condition: In Tolerance

8/26/2013

SERVICE ENGINEER ***DATE***

Service Order #: 13317 - 25

As a mutual protection to the purchaser, the public, and ourselves, all Cal-Rite calibration reports are submitted as the confidential property of the purchaser, and any authorization for publication of statements, conclusions, or extractions from or regarding our reports is reserved pending our prior written approval.

Certificate Of Calibration

Equipment Calibration was performed at the address below for

FSTL

4545 W. AUGUSTA BLVD.

CHICAGO, IL 60651-

QA Reviewed by
Aug-23-2013

Date of Calibration

Wednesday, August 07, 2013

Calibration Performed By

Cal~Rite Corporation, Naperville, IL

A2LA ACCREDITED
Certificate # 866.01
Calibration

Customer # : LC-003

Machine Profile

Manufacturer:	*RICE LAKE*	**Capacity:**	*2000*	**Next Calibration:**	*07-Feb-2014*
Model:	*RL20001-T10-15K*	**Serial #:**	*Y68886-T-L*	**Temp/Humidity:**	*80.8 F/63.2%*

Language: Lbs

Force Calibration Result

Accuracy 0.5 %

Range	Verified Range Force	Uncertainty %	Maximum Error %
2000.000	200.000 - 2000.000	0.30	0.13

CAL-RITE CORPORATION HAS CALIBRATED THE TESTING EQUIPMENT DESCRIBED ABOVE IN ACCORDANCE WITH THE LATEST SPECIFICATIONS (10-CFR-21, ISO/IEC 17025 AND ISO 10012-1 AND MIL-STD 45662A). ALL VERIFICATION DEVICES CALIBRATED IN ACCORDANCE WITH ASTM-E74 PRACTICES AND ARE TRACEABLE TO NIST. THIS CERTIFICATE RELATES ONLY TO THE ITEMS CALIBRATED.
THE UNCERTAINTY OF THE CALIBRATION PROCESS WAS ESTIMATED AT THE 95% CONFIDENCE LEVEL (K=2).
THE EQUIPMENT LISTED ABOVE HAS MET ALL APPLICABLE CLAUSES OF THE GOVERNING SPECIFICATION UNLESS NOTED BELOW.

☐ 10.1 Lower Limit below 200X Resolution
☐ 10.3 Less than 5 readings taken below 10% FS
☐ 10.5 Does not return to zero in 30 seconds
☐ 18.3 Does not meet +/- 1 % accuracy requirement.

Specification: **ASTM E 4-10** ***QMS Revision:*** **01-13**

Service Comments: Inspected load cell. Performed a calibration procedure in accordance with ASTM specifications from 200 Lbs to 2,000 Lbs in tension. All readings were within the established 0.5% tolerance and repeatable. Unit is in good working condition at this time.

As Found Condition: In Tolerance

Service Order #: 13317 - 24

SERVICE ENGINEER ***DATE*** *8/26/2013*

As a mutual protection to the purchaser, the public, and ourselves, all Cal-Rite calibration reports are submitted as the confidential property of the purchaser, and any authorization for publication of statements, conclusions, or extractions from or regarding our reports is reserved pending our prior written approval.

Certificate Of Calibration

Equipment Calibration was performed at the address below for

FSTL

4545 W. AUGUSTA BLVD.

CHICAGO, IL 60651-

QA Reviewed by
Aug-23-2013

Date of Calibration

Wednesday, August 07, 2013

Calibration Performed By

Cal~Rite Corporation, Naperville, IL

ACCREDITED
Certificate # 866.01
Calibration

Machine Profile

Customer # : LC-008

Manufacturer:	*RICE LAKE*	**Capacity:**	*9000*	**Next Calibration:**	*07-Feb-2014*
Model:	*RL20001-T10-15K*	**Serial #:**	*21062367-T*	**Temp/Humidity:**	*79.9 F/61.2%*

Language: Lbs

Force Calibration Result

Accuracy 0.5 %

Range	Verified Range Force	Uncertainty %	Maximum Error %
9000.000	1000.000 - 9000.000	0.30	0.20

CAL-RITE CORPORATION HAS CALIBRATED THE TESTING EQUIPMENT DESCRIBED ABOVE IN ACCORDANCE WITH THE LATEST SPECIFICATIONS (10-CFR-21, ISO/IEC 17025 AND ISO 10012-1 AND MIL-STD 45662A). ALL VERIFICATION DEVICES CALIBRATED IN ACCORDANCE WITH ASTM-E74 PRACTICES AND ARE TRACEABLE TO NIST.
THIS CERTIFICATE RELATES ONLY TO THE ITEMS CALIBRATED.
THE UNCERTAINTY OF THE CALIBRATION PROCESS WAS ESTIMATED AT THE 95% CONFIDENCE LEVEL (K=2).
THE EQUIPMENT LISTED ABOVE HAS MET ALL APPLICABLE CLAUSES OF THE GOVERNING SPECIFICATION UNLESS NOTED BELOW.

☐ 10.1 Lower Limit below 200X Resolution
☐ 10.3 Less than 5 readings taken below 10% FS
☐ 10.5 Does not return to zero in 30 seconds
☐ 18.3 Does not meet +/- 1 % accuracy requirement.

Specification: **ASTM E 4-10** ***QMS Revision:*** **01-13**

Service Comments: Inspected load cell. Performed a calibration procedure in accordance with ASTM specifications from 1,000 Lbs to 9,000 Lbs in tension. All readings were within the established 0.5% tolerance and repeatable. Unit is in good working condition at this time.

As Found Condition: In Tolerance

8/26/2013

SERVICE ENGINEER ***DATE***

Service Order #: 13317 - 5

As a mutual protection to the purchaser, the public, and ourselves, all Cal-Rite calibration reports are submitted as the confidential property of the purchaser, and any authorization for publication of statements, conclusions, or extractions from or regarding our reports is reserved pending our prior written approval.



This quote is strictly for pricing purposes. It is your obligation to validate with the body manufacturer that it is a suitable vehicle for their conversion

2020 U6P 3.5L ECOBOOST 156 WB 11000# GVWR KT070 MID-OHIO SMI

Order No: 0001 Priority: J4 Ord FIN: KT070 Order Type: 5B Price Level: 040
Ord PEP: 501A Cust/Flt Name: SMI PO Number:

		RETAIL	DLR INV
U6P	LR CUTAWAY RWD		
	156" WHEELBASE		
YZ	OXFORD WHITE		
V	VINYL		
K	PALAZZO GRAY		
501A	PREF EQUIP PKG		
	.XL TRIM		
57B	.MANUAL A/C	NC	NC
99G	3.5L ECOBOOST		
44U	.10-SPEED TRANS		
TQH	.205/75R16C BSW		
X7L	3.73 LS	NC	
	JOB #2 ORDER		
	FLEET SPCL ADJ	NC	
18L	EXT UPG PKG-DRW	NC	NC
153	.FRT LICENSE BKT		
63E	.DUAL BATTERIES		
87E	.AUX FUSE PANEL		
53D	TOW/HAUL WIRING		
54X	MIRROR DELETE	NC	NC
55D	FRONT FOG LAMPS		
58T	RADIO PREP PKG	NC	NC
60X	RT DOOR DELETE	()	
61A	RR CAM PREP KIT		
62A	AUX HEAT PKG		
794	PRICE CONCESSN		
	REMARKS TRAILER		
85D	DUAL-NOTE HORN		
942	DAYTIME LAMPS		
	SP DLR ACCT ADJ		
91B	.WIP ACT HEADLMP		
20L	11000# GVWR	NC	NC
21J	2W DRV PLZ VNYL		
41H	ENG BLK HEATER		
425	50 STATE EMISS	NC	NC
43Q	LED TAILLAMPS		
47S	SHUTTLE BUS PKG		
	THIS IS NOT AN INVOICE		
	SP FLT ACCT CR		
	FUEL CHARGE		
B4A	NET INV FLT OPT	NC	
	DEST AND DELIV		
	TOTAL		

SUBURBAN
Suburban Ford of Sterling Heights

DTL REPORT NUMBER
110250008

Since 1903

DETROIT TESTING LABORATORY, INC.

PREPARED FOR
FLINT HILLS RESOURCES
501 BRUNNER STREET
PERU IL 61354

ATTENTION
DENNIS PANIER

CUSTOMER PURCHASE ORDER NUMBER
PEP10524

REPORT DATE
JUNE 7, 2011

Detroit Testing Laboratory, Inc.
27485 George Merrelli Drive
Warren, Michigan 48092 USA
Phone: 586.754.9000
Fax: 586.754.9045
www.dtl-inc.com

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REPORTED / APPROVED BY:

DETROIT TESTING LABORATORY, INC.

David Smith, Department Manager
Materials Testing

Timothy R. Geiger, Group Manager
Materials Testing

DS/TRG/bsj

PURPOSE

The purpose of this test report is to present the test results obtained during the performance of a test program. This report includes a brief description of the samples presented for test, a list of the documents presented as test instructions, and a summary of the testing performed and the results obtained. Applicable requirements and conclusions are based on the criteria provided by our client, or as specified in the reference document(s).

WORK REQUESTED / REFERENCE DOCUMENT(s)

Compression (As Received) per ASTM D1621-10
Compression (After Heating) per ASTMD1621-10
Flammability (As Received) per FMVSS 302-98

SAMPLE DESCRIPTION

Eleven foams identified as:

5454 101P25013 1.0 PCF density
5454 101P25013 2.0 PCF density
5454 101P25013 3.0 PCF density
5654 101P15002 1.0 PCF density
5654 101P15002 2.0 PCF density
5654 101P15002 3.0 PCF density
7654 101P17001 1.0 PCF density
7654 101P17001 2.0 PCF density
7654 101P17001 3.0 PCF density
S7454 101P27002S 1.2 PCF density
S7454 101P27002S 2.0 PCF density

SAMPLE CONDITIONING

Prior to testing, the samples were conditioned at 23 °C ±2 °C and 50% ±5% relative humidity, as applicable.

TESTING PERFORMED

COMPRESSION (AS RECEIVED) PER ASTM D1621-10

Procedure — Foam specimens were tested as received. The samples measured three inches wide by three inches long and were one inch thick. The test speed was 2.5mm/min.

Results

Specimen	Compressive strength at 10% strain (MPa)	Compressive strength at 25% strain (MPa)	Compressive strength at 50% strain (MPa)
5454 101P25013 1.0 PCF density	0.0990	0.1240	0.1750
5454 101P25013 2.0 PCF density	0.1900	0.2260	0.2930
5454 101P25013 3.0 PCF density	0.3960	0.4470	0.5470
5654 101P15002 1.0 PCF density	0.0933	0.1150	0.1720
5654 101P15002 2.0 PCF density	0.2360	0.2720	0.3500
5654 101P15002 3.0 PCF density	0.4400	0.4880	0.5910
7654 101P17001 1.0 PCF density	0.0888	0.1110	0.1650
7654 101P17001 2.0 PCF density	0.2580	0.2950	0.3690
7654 101P17001 3.0 PCF density	0.4710	0.5480	0.6830
S7454 101P27002S 1.2 PCF density	0.1390	0.1670	0.2170
S7454 101P27002S 2.0 PCF density	0.2300	0.2700	0.3420

Requirements — No specific criteria provided.

Conclusion — To be determined by Flint Hills Resources.

COMPRESSION (AFTER HEATING) PER ASTMD1621-10

Procedure — Foam specimens were tested after heat aging, 24 hours at 82°C. The samples measured three inches wide by three inches long and were one inch thick. The test speed was 2.5mm/min.

Results

Specimen	Compressive strength at 10% strain (MPa)	Compressive strength at 25% strain (MPa)	Compressive strength at 50% strain (MPa)
5454 101P25013 1.0 PCF density	0.1030	0.1290	0.1820
5454 101P25013 2.0 PCF density	0.2060	0.2440	0.3150
5454 101P25013 3.0 PCF density	0.4200	0.4760	0.5850
5654 101P15002 1.0 PCF density	0.1020	0.1250	0.1850
5654 101P15002 2.0 PCF density	0.2500	0.2920	0.3800
5654 101P15002 3.0 PCF density	0.4480	0.5040	0.6150
7654 101P17001 1.0 PCF density	0.0947	0.1190	0.1730
7654 101P17001 2.0 PCF density	0.2810	0.3220	0.4010
7654 101P17001 3.0 PCF density	0.5020	0.5820	0.7290
S7454 101P27002S 1.2 PCF density	0.1440	0.1720	0.2230
S7454 101P27002S 2.0 PCF density	0.2440	0.2840	0.3610

Requirements — No specific criteria provided.

Conclusion — To be determined by Flint Hills Resources.

FLAMMABILITY (AS RECEIVED) PER FMVSS 302-98

Results

5454 101P25013 1.0 PCF density:

Specimen	Burn Time (sec)	Burn Length (mm)	Burn Rate (mm/min)
1	0	0	DNI
2	0	0	DNI
3	0	0	SE
4	0	0	DNI
5	0	0	SE

5454 101P25013 2.0 PCF density:

Specimen	Burn Time (sec)	Burn Length (mm)	Burn Rate (mm/min)
1	0	0	SE
2	0	0	SE
3	0	0	SE
4	0	0	SE
5	0	0	SE

5454 101P25013 3.0 PCF density:

Specimen	Burn Time (sec)	Burn Length (mm)	Burn Rate (mm/min)
1	0	0	SE
2	0	0	SE
3	0	0	SE
4	0	0	SE
5	0	0	SE

5654 101P15002 1.0 PCF density:

Specimen	Burn Time (sec)	Burn Length (mm)	Burn Rate (mm/min)
1	0	0	SE
2	0	0	SE
3	0	0	SE
4	0	0	SE
5	0	0	SE

FLAMMABILITY (AS RECEIVED) PER FMVSS 302-98 CONTINUED

5654 101P15002 2.0 PCF density:

Specimen	Burn Time (sec)	Burn Length (mm)	Burn Rate (mm/min)
1	0	0	SE
2	0	0	SE
3	0	0	SE
4	0	0	SE
5	0	0	SE

5654 101P15002 3.0 PCF density:

Specimen	Burn Time (sec)	Burn Length (mm)	Burn Rate (mm/min)
1	0	0	SE
2	0	0	SE
3	0	0	SE
4	0	0	SE
5	0	0	SE

7654 101P17001 1.0 PCF density:

Specimen	Burn Time (sec)	Burn Length (mm)	Burn Rate (mm/min)
1	0	0	DNI
2	0	0	DNI
3	0	0	SE
4	0	0	SE
5	0	0	DNI

7654 101P17001 2.0 PCF density:

Specimen	Burn Time (sec)	Burn Length (mm)	Burn Rate (mm/min)
1	0	0	SE
2	0	0	SE
3	0	0	SE
4	0	0	SE
5	0	0	SE

FLAMMABILITY (AS RECEIVED) PER FMVSS 302-98 CONTINUED

7654 101P17001 3.0 PCF density:

Specimen	Burn Time (sec)	Burn Length (mm)	Burn Rate (mm/min)
1	0	0	SE
2	0	0	SE
3	0	0	SE
4	0	0	SE
5	0	0	SE

S7454 101P27002S 1.2 PCF density:

Specimen	Burn Time (sec)	Burn Length (mm)	Burn Rate (mm/min)
1	0	0	SE
2	0	0	SE
3	0	0	DNI
4	0	0	SE
5	0	0	SE

S7454 101P27002S 2.0 PCF density:

Specimen	Burn Time (sec)	Burn Length (mm)	Burn Rate (mm/min)
1	0	0	SE
2	0	0	SE
3	0	0	DNI
4	0	0	SE
5	0	0	SE

SE = Self extinguished
DNI = Did not ignite

Requirements Maximum Burn Rate of 102 mm/minute

Conclusion Specimens met the stated requirement.

SAMPLE DISPOSITION

Samples will be retained at Detroit Testing Laboratory, Inc. for 30 days and then disposed of, unless otherwise specified by client.

TEST EQUIPMENT

Detroit Testing Laboratory, Inc.'s calibration system meets the requirements of ISO 17025:2005.

DTL ID	Description	Manufacturer	Model Number	Cal Due
12876	Stop Watch	VWR	62379460	09/11
12190	Thermohumidigraph	Newport Electronics Inc/	CT485B	06/11
08462	Flammability Chamber	Sunspot Products	None	NCR
00850	Oven	Blue M	OV-490A-2	NCR
10890	Hydra Data Bucket	Fluke	2625A	02/12
07570	DIGITAL CALIPERS	Mitutoyo	CD-6" P	06/11
07258	Load Cell	Instron	2518-805	07/11
07095	T/C TEST MACHINE (100 kN)	Instron	4505	07/11

NCR -- No Calibration Required

APPENDICES: Appendix A: Test Data

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Friday, May 13, 2011

Tested By: Dave Marlett

Material identification: 5454 101P25013 1.0 PCF density

Material conditioning: As received

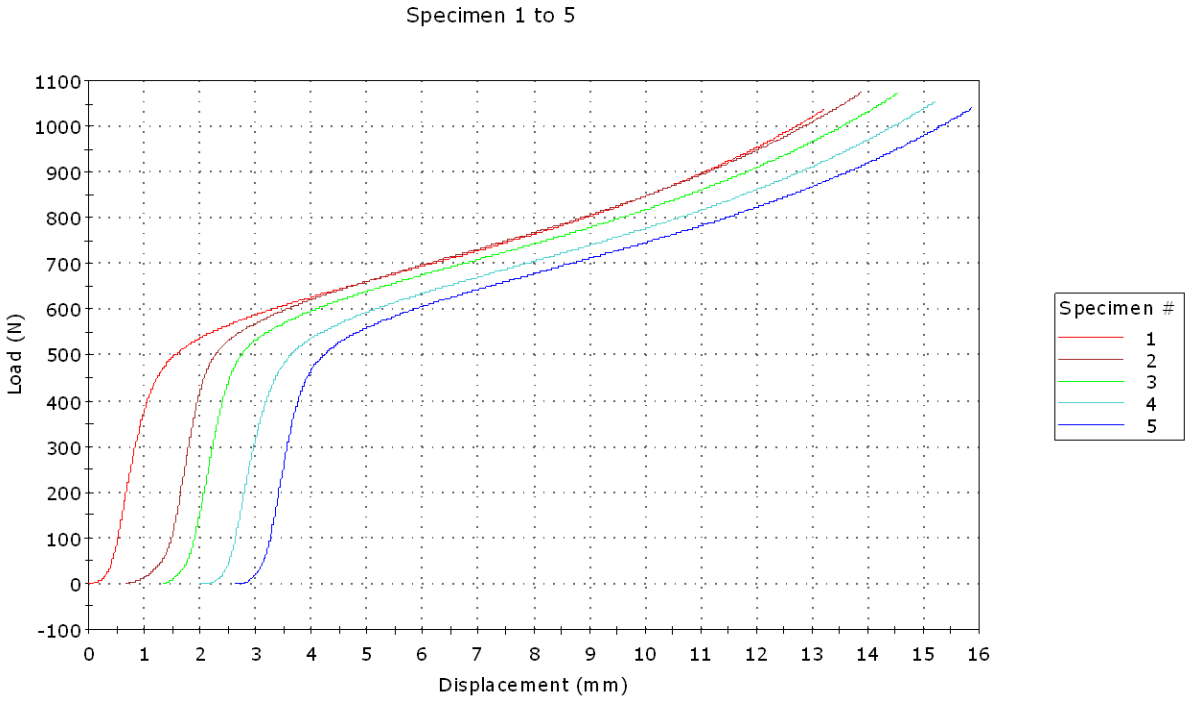
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.0976	0.121	0.172
2	0.100	0.126	0.178
3	0.101	0.126	0.178
4	0.0980	0.123	0.175
5	0.0980	0.122	0.173
Mean	0.0990	0.124	0.175
Std. Dev.	0.00	0.00	0.00

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Friday, May 13, 2011

Tested By: Dave Marlett

Material identification: 5454 101P25013 2.0 PCF density

Material conditioning: As received

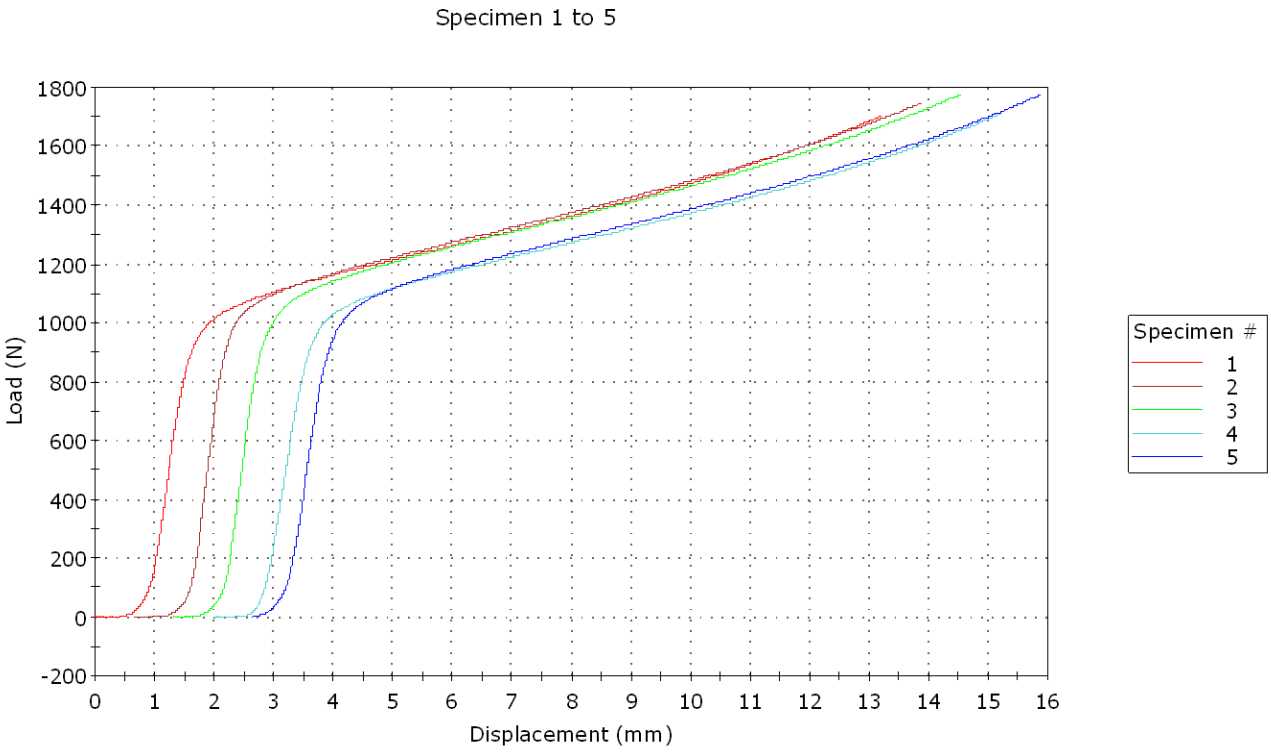
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.184	0.221	0.286
2	0.192	0.228	0.294
3	0.195	0.231	0.298
4	0.186	0.222	0.287
5	0.194	0.230	0.298
Mean	0.190	0.226	0.293
Std. Dev.	0.00	0.00	0.01

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Friday, May 13, 2011

Tested By: Dave Marlett

Material identification: 5454 101P25013 3.0 PCF density

Material conditioning: As received

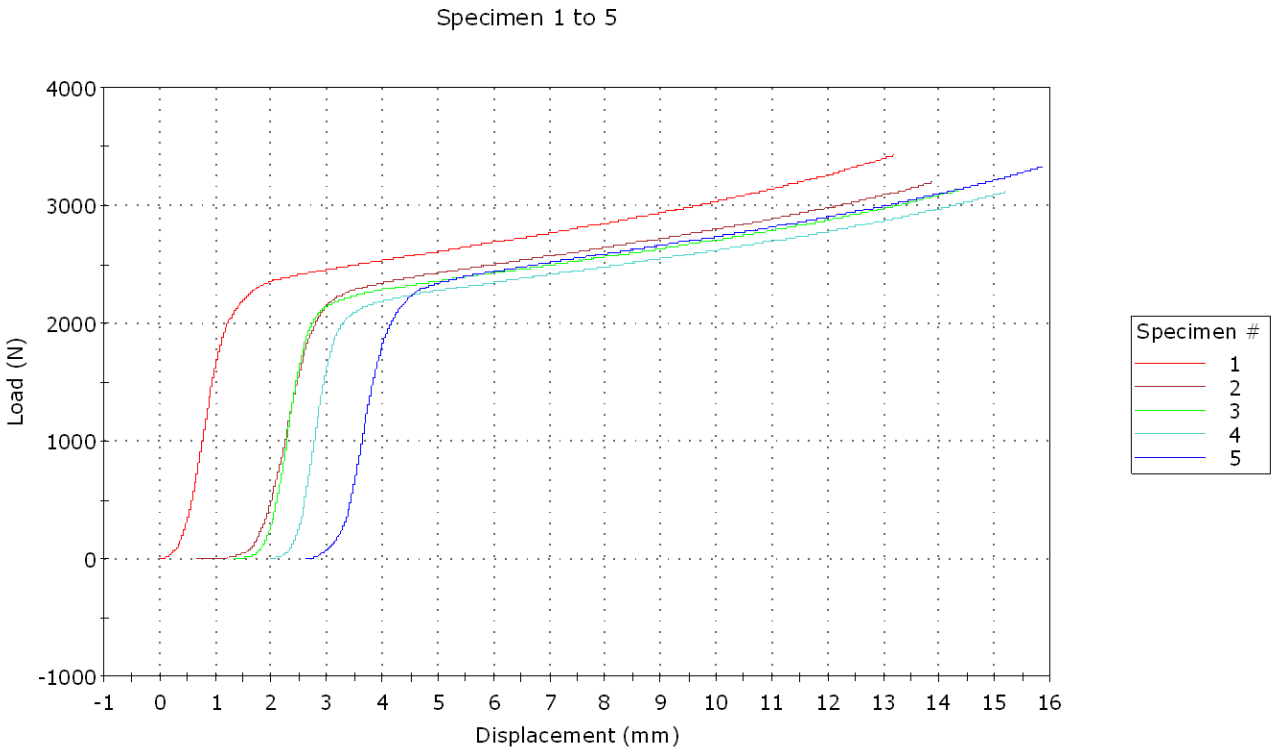
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.416	0.467	0.578
2	0.383	0.443	0.539
3	0.391	0.437	0.532
4	0.386	0.431	0.525
5	0.407	0.458	0.561
Mean	0.396	0.447	0.547
Std. Dev.	0.01	0.02	0.02

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Friday, May 13, 2011

Tested By: Dave Marlett

Material identification: 5654 101P15002 1.0 PCF density

Material conditioning: As received

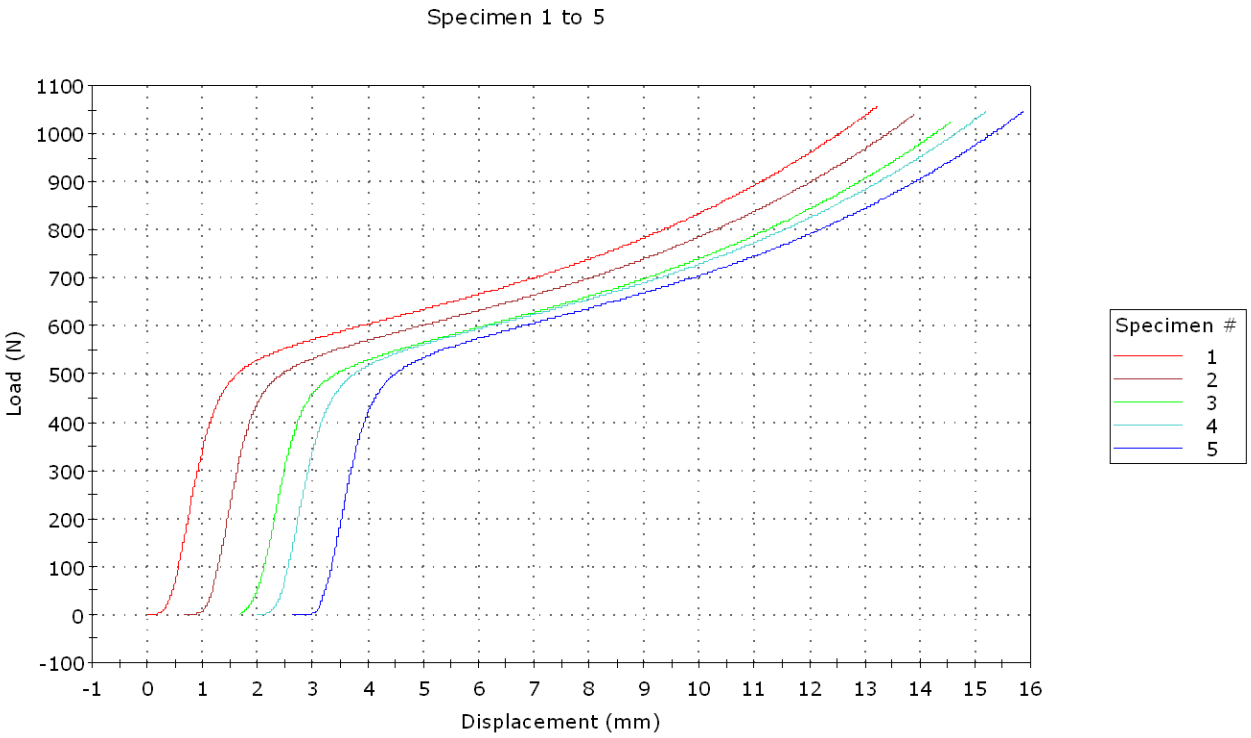
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.0956	0.117	0.174
2	0.0933	0.114	0.172
3	0.0902	0.112	0.169
4	0.0937	0.115	0.173
5	0.0936	0.115	0.173
Mean	0.0933	0.115	0.172
Std. Dev.	0.00	0.00	0.00

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Friday, May 13, 2011

Tested By: Dave Marlett

Material identification: 5654 101P15002 2.0 PCF density

Material conditioning: As received

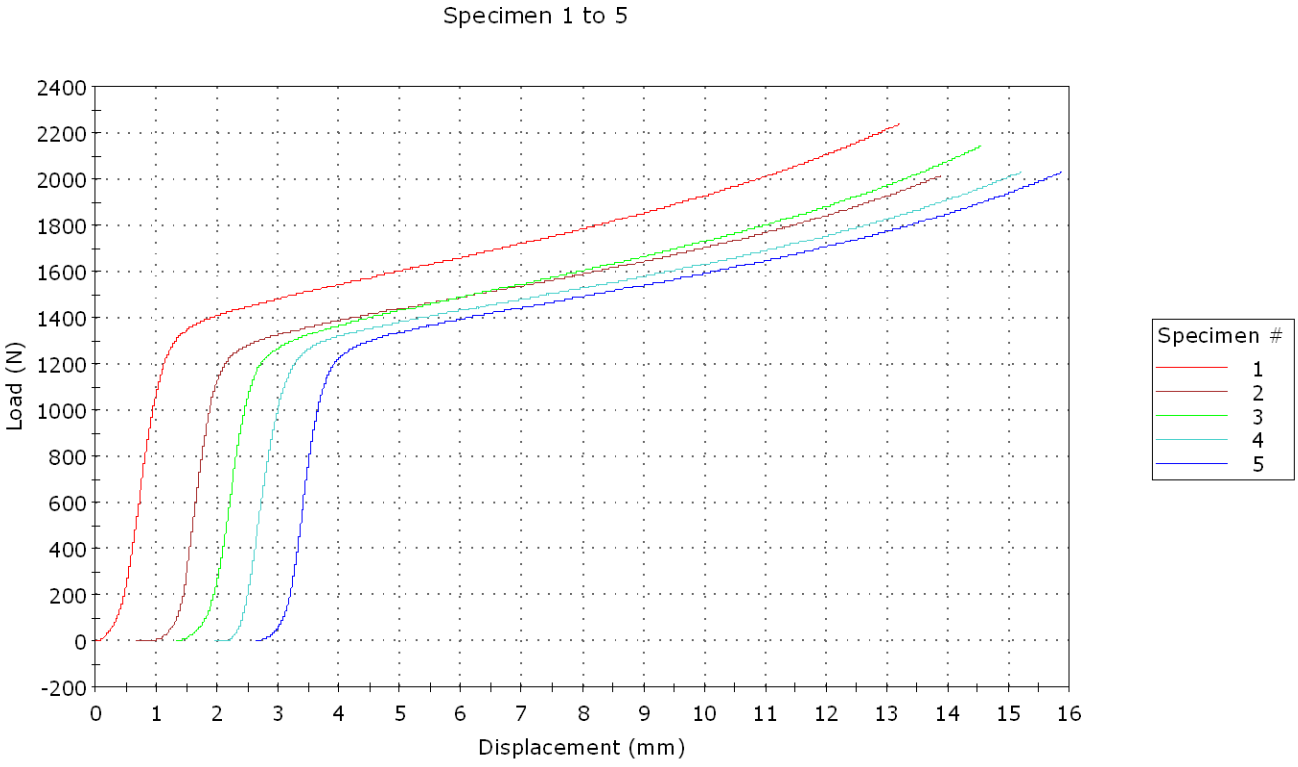
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.250	0.290	0.375
2	0.231	0.265	0.337
3	0.233	0.273	0.358
4	0.233	0.266	0.340
5	0.232	0.265	0.340
Mean	0.236	0.272	0.350
Std. Dev.	0.01	0.01	0.02

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Friday, May 13, 2011

Tested By: Dave Marlett

Material identification: 5654 101P15002 3.0 PCF density

Material conditioning: As received

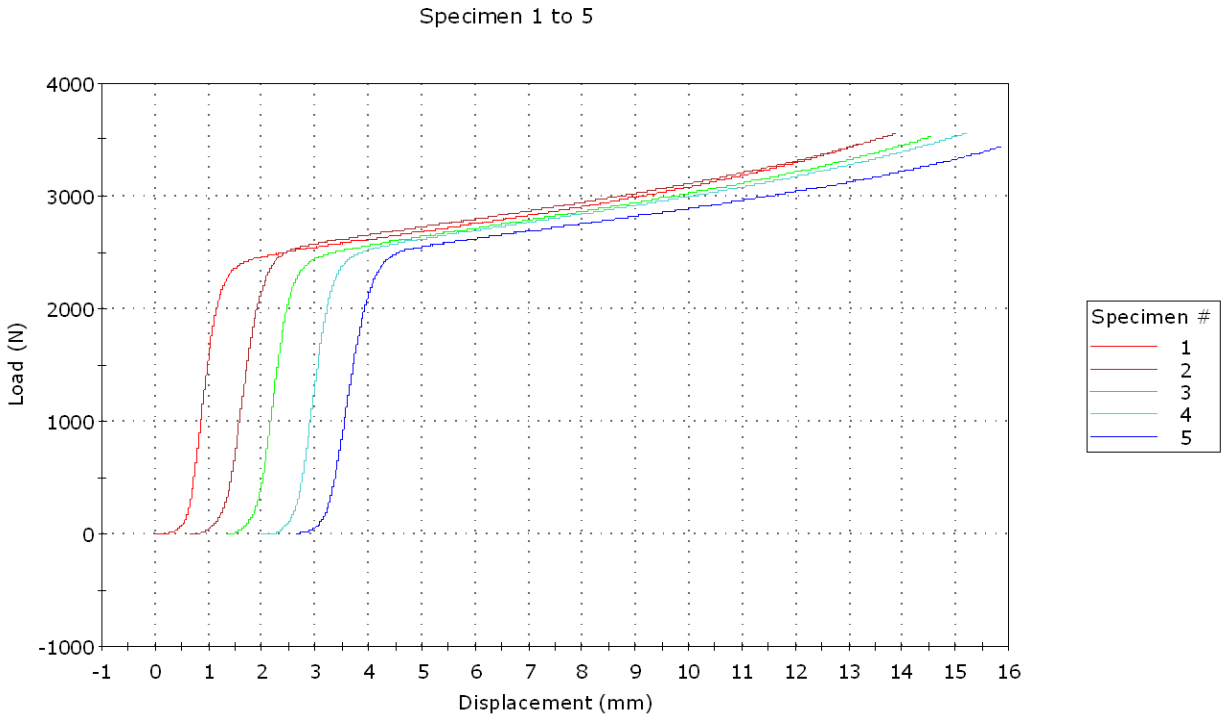
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.432	0.478	0.583
2	0.446	0.494	0.599
3	0.439	0.488	0.594
4	0.444	0.493	0.600
5	0.441	0.485	0.580
Mean	0.440	0.488	0.591
Std. Dev.	0.01	0.01	0.01

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Thursday, May 12, 2011

Tested By: Dave Marlett

Material identification: 7654 101P17001 1.0 PCF density

Material conditioning: As received

Test conditions: 23° C / 50% RH

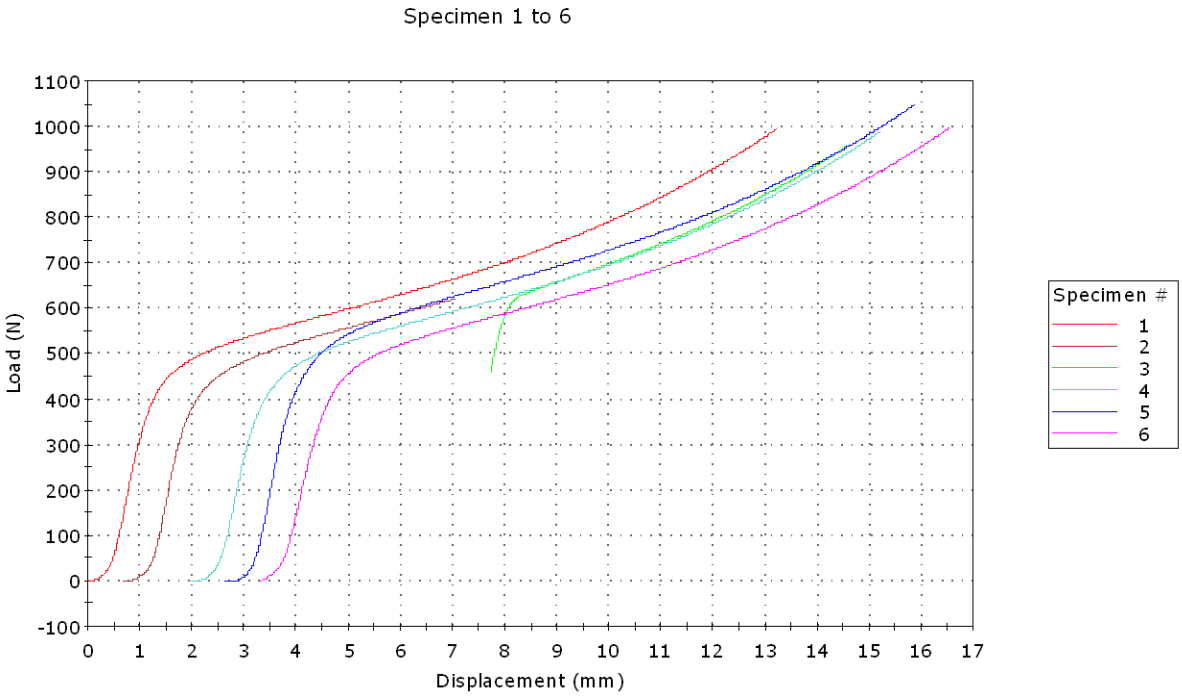
Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Tests #2 and #3 are for the same specimen.

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.0888	0.110	0.164
2	0.0848	0.107	-----
3	-----	-----	0.158
4	0.0870	0.109	0.163
5	0.0953	0.119	0.174
6	0.0883	0.110	0.165
Mean	0.0888	0.111	0.165
Std. Dev.	0.00	0.00	0.01

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Thursday, May 12, 2011

Tested By: Dave Marlett

Material identification: 7654 101P17001 2.0 PCF density

Material conditioning: As received

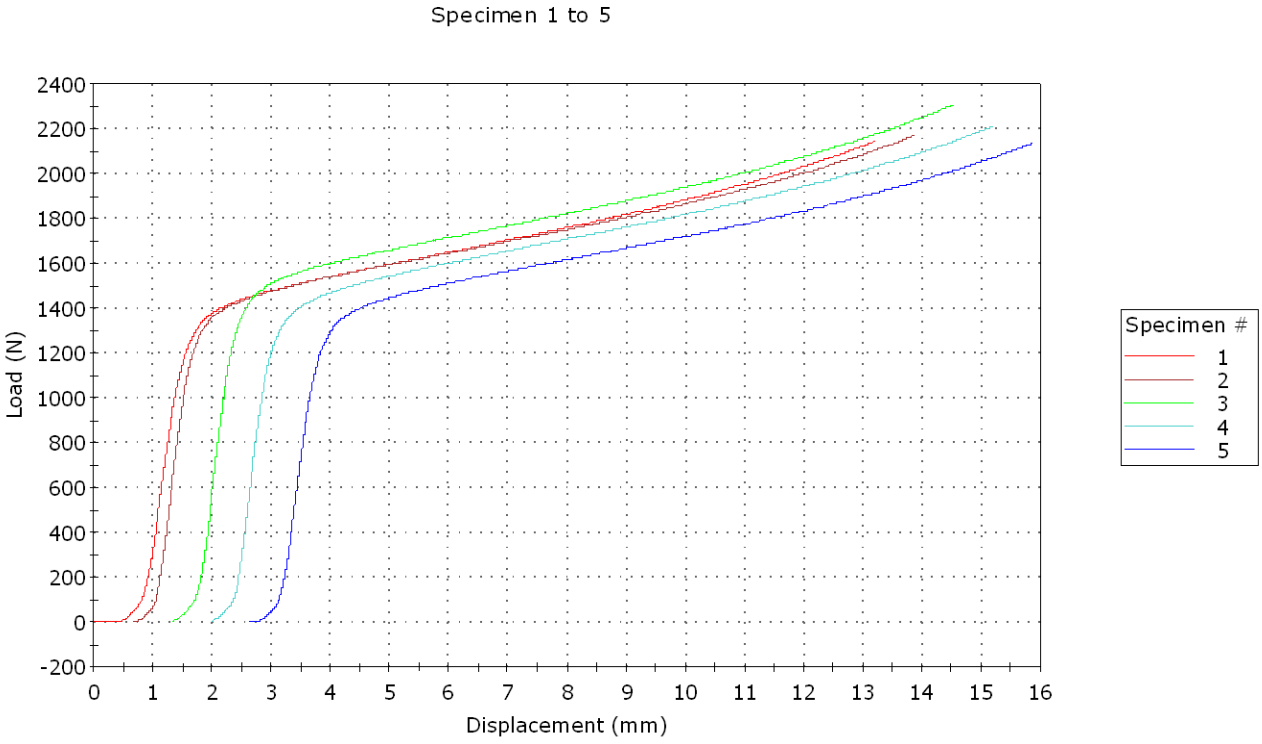
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.248	0.287	0.360
2	0.256	0.292	0.365
3	0.274	0.310	0.388
4	0.260	0.297	0.372
5	0.251	0.287	0.359
Mean	0.258	0.295	0.369
Std. Dev.	0.01	0.01	0.01

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Friday, May 13, 2011

Tested By: Dave Marlett

Material identification: 7654 101P17001 3.0 PCF density

Material conditioning: As received

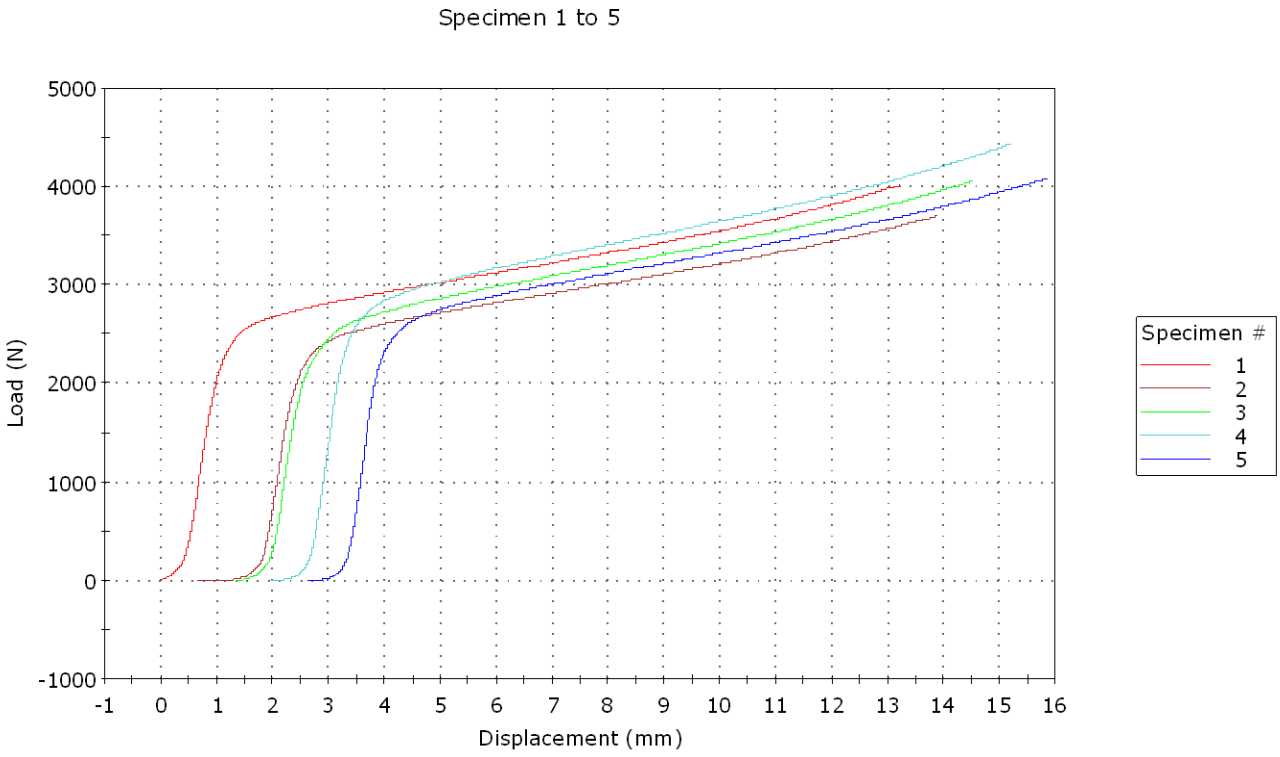
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.475	0.544	0.676
2	0.427	0.503	0.624
3	0.466	0.545	0.683
4	0.509	0.593	0.746
5	0.479	0.554	0.689
Mean	0.471	0.548	0.683
Std. Dev.	0.03	0.03	0.04

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Thursday, May 12, 2011

Tested By: Dave Marlett

Material identification: S7454 101P27002S 1.2 PCF density

Material conditioning: As received

Test conditions: 23° C / 50% RH

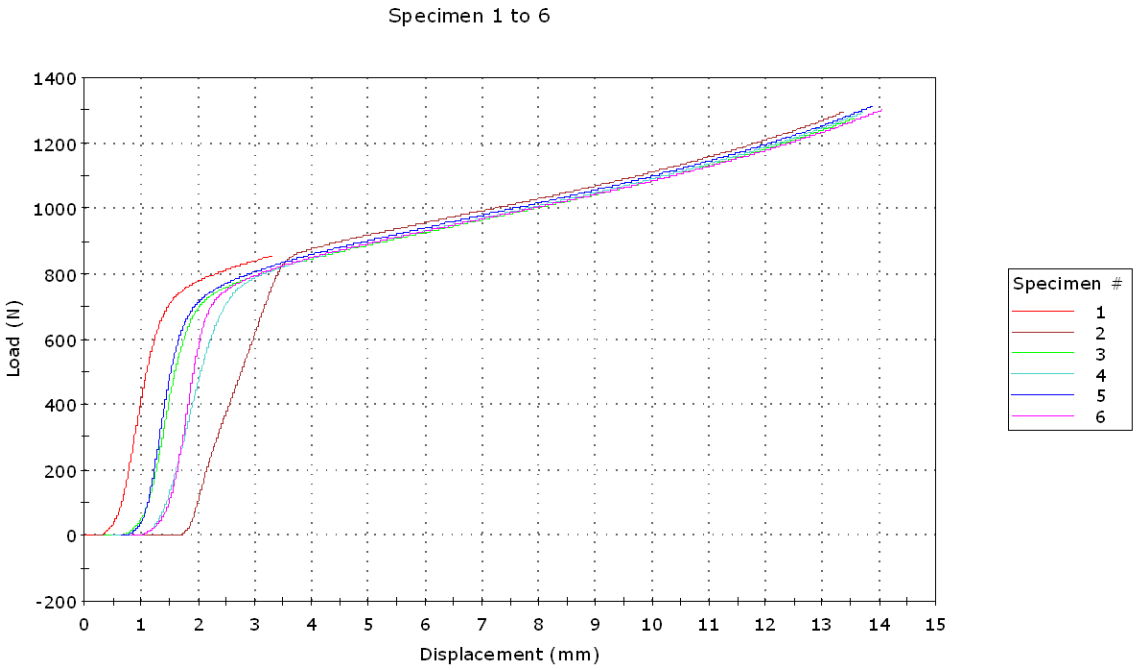
Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

The 10% strain measurment for specimen #1 should be 0.140 MPa. The test did not continue past 13% strain and there were no extra samples so that specimen had to be run twice. The test averages for 10% strain are not corrected for this error on this sheet.

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
X 1	0.140	-----	-----
2	0.0815	0.168	0.217
3	0.135	0.164	0.214
4	0.136	0.166	0.217
5	0.141	0.169	0.220
6	0.141	0.168	0.218
Mean	0.127	0.167	0.217
Std. Dev.	0.03	0.00	0.00

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Thursday, May 12, 2011

Tested By: Dave Marlett

Material identification: S7454 101P27002S 2.0 PCF density

Material conditioning: As received

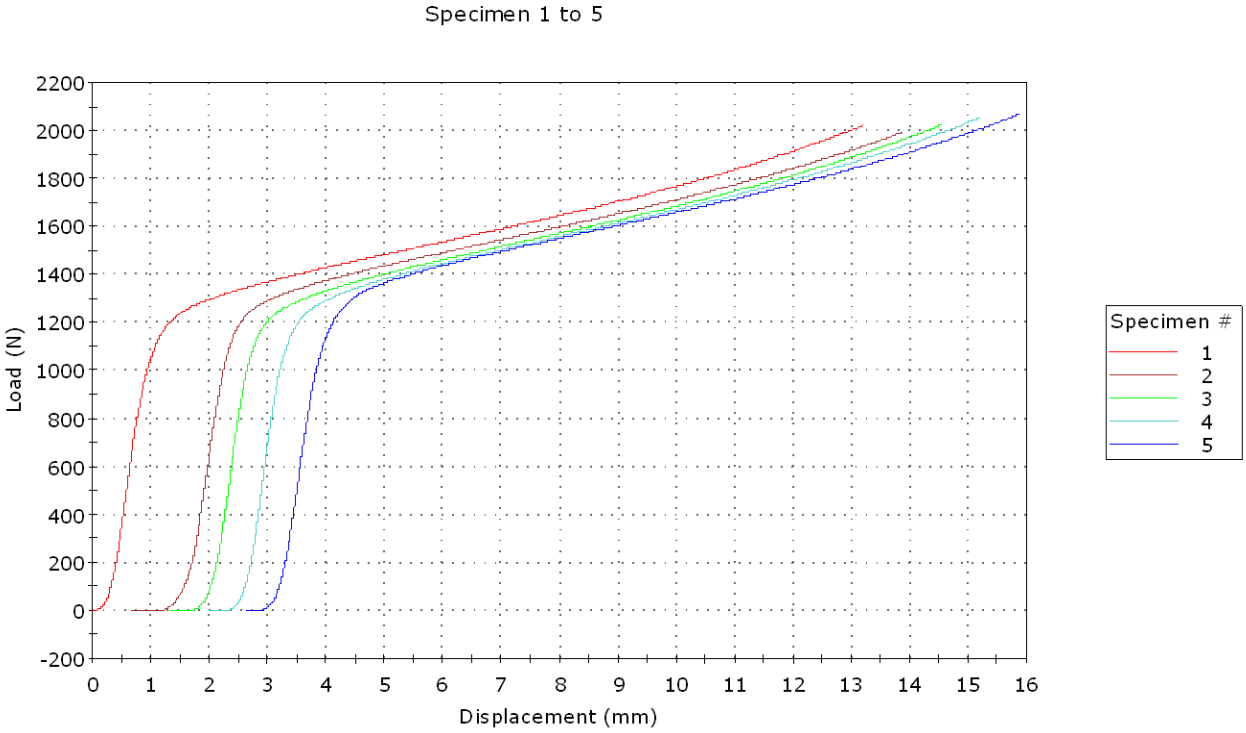
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.230	0.268	0.340
2	0.226	0.266	0.335
3	0.227	0.267	0.340
4	0.231	0.271	0.345
5	0.238	0.276	0.348
Mean	0.230	0.270	0.342
Std. Dev.	0.00	0.00	0.00

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Wednesday, May 18, 2011

Tested By: Dave Marlett

Material identification: S7454 101P27002S 2.0 PCF density

Material conditioning: Post heat aging 24Hrs at 82° C

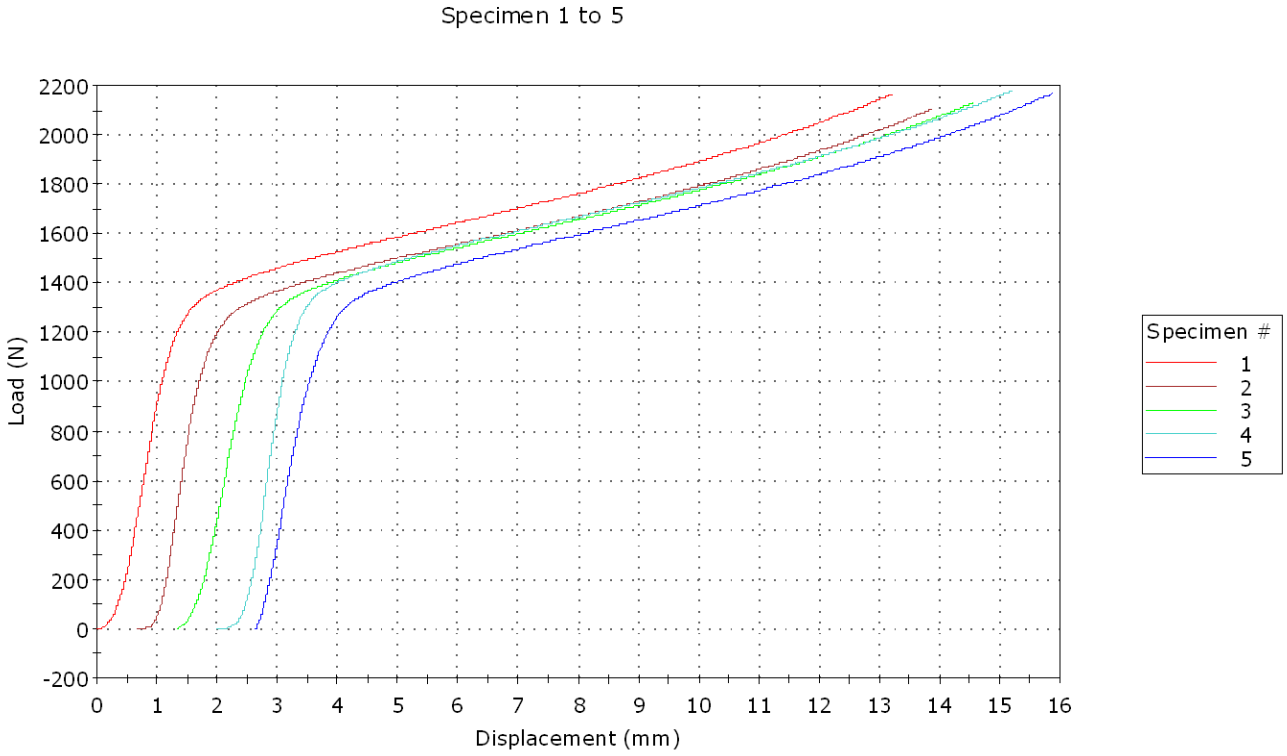
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.245	0.287	0.364
2	0.239	0.278	0.354
3	0.241	0.282	0.358
4	0.250	0.290	0.366
5	0.245	0.285	0.364
Mean	0.244	0.284	0.361
Std. Dev.	0.00	0.00	0.01

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Wednesday, May 18, 2011

Tested By: Dave Marlett

Material identification: 5454 101P25013 1.0 PCF density

Material conditioning: Post heat aging 24Hrs at 82° C

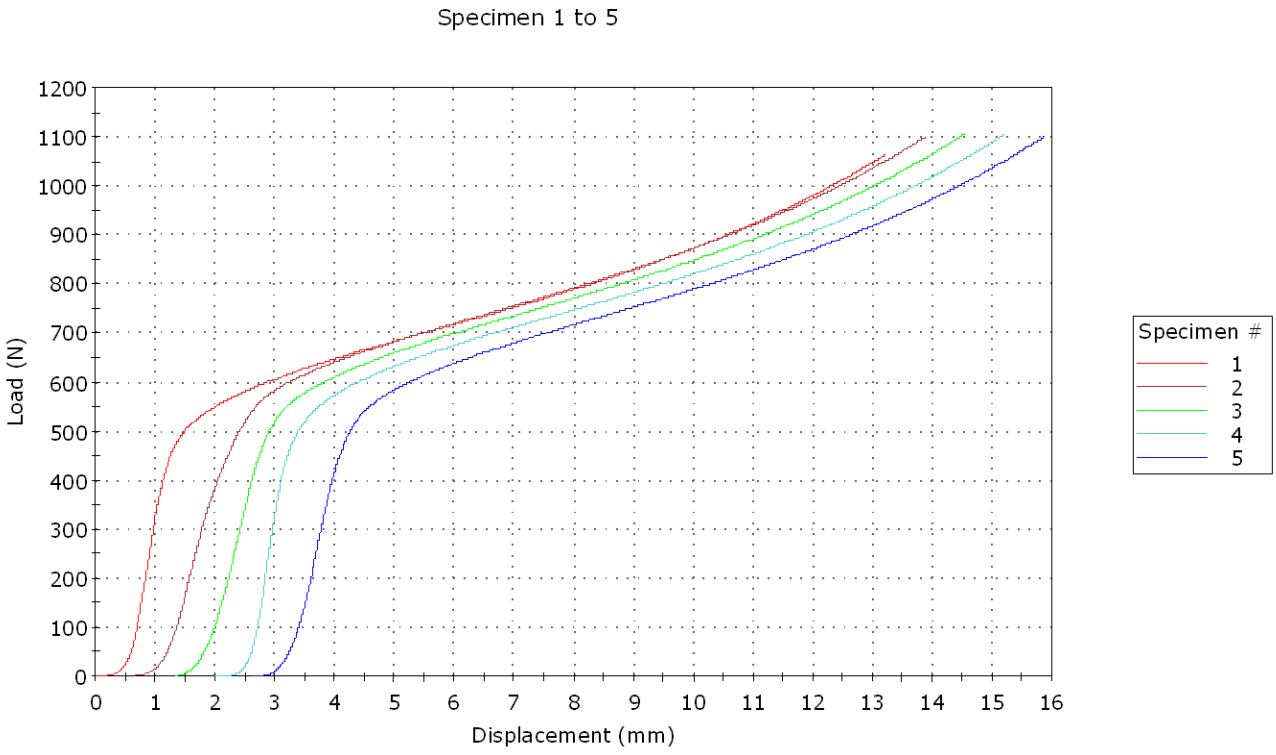
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.100	0.126	0.177
2	0.103	0.130	0.183
3	0.104	0.131	0.184
4	0.105	0.131	0.183
5	0.103	0.129	0.183
Mean	0.103	0.129	0.182
Std. Dev.	0.00	0.00	0.00

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Wednesday, May 18, 2011

Tested By: Dave Marlett

Material identification: 5454 101P25013 2.0 PCF density

Material conditioning: Post heat aging 24Hrs at 82° C

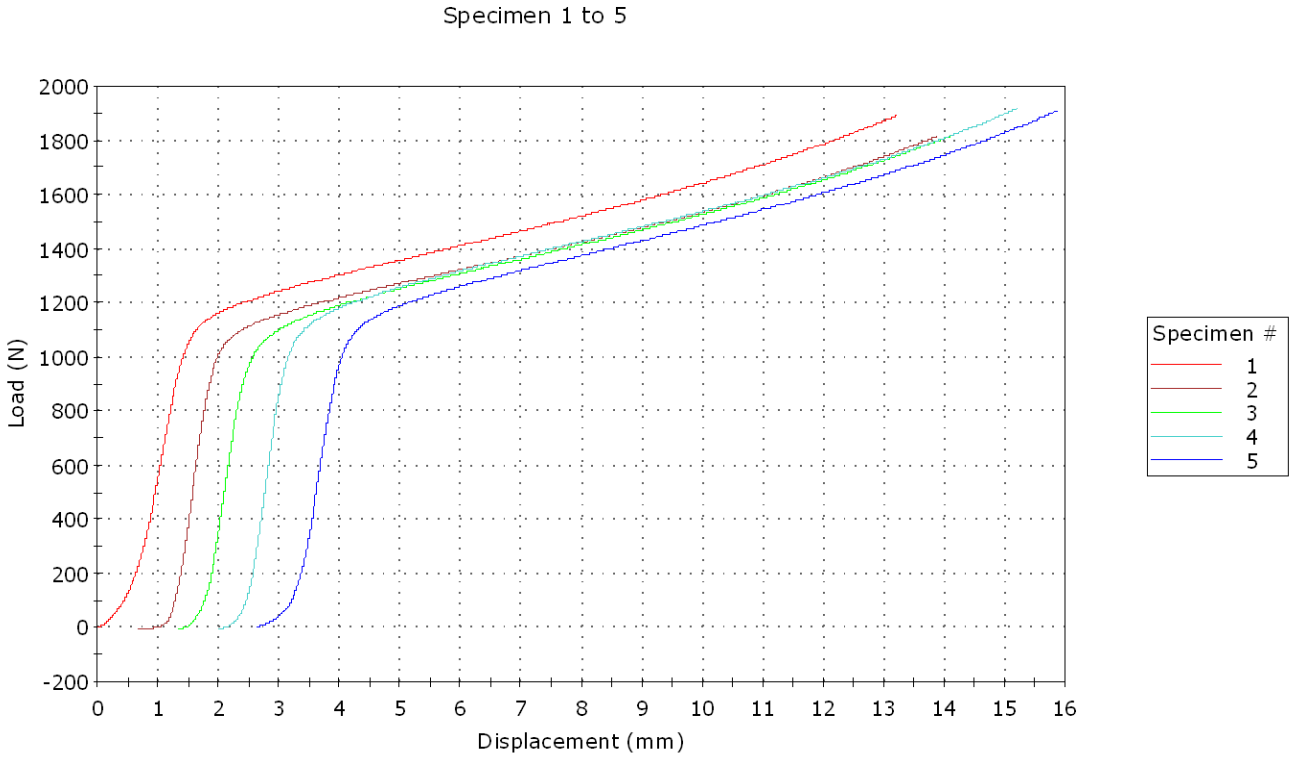
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.208	0.246	0.317
2	0.201	0.236	0.304
3	0.203	0.240	0.311
4	0.211	0.249	0.321
5	0.207	0.246	0.320
Mean	0.206	0.244	0.315
Std. Dev.	0.00	0.00	0.01

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Wednesday, May 18, 2011

Tested By: Dave Marlett

Material identification: 5454 101P25013 3.0 PCF density

Material conditioning: Post heat aging 24Hrs at 82° C

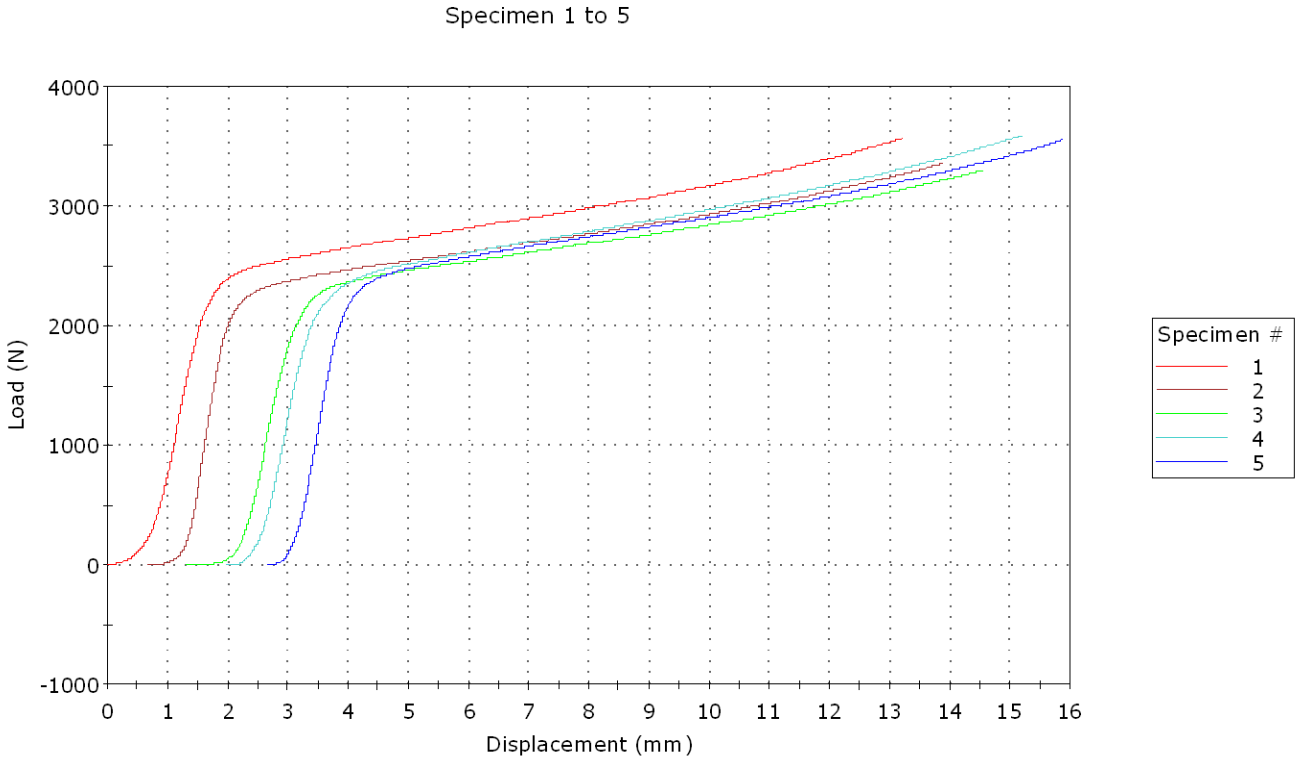
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.431	0.489	0.601
2	0.412	0.463	0.565
3	0.404	0.458	0.556
4	0.423	0.485	0.604
5	0.430	0.486	0.597
Mean	0.420	0.476	0.585
Std. Dev.	0.01	0.01	0.02

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Wednesday, May 18, 2011

Tested By: Dave Marlett

Material identification: 5654 101P15002 1.0 PCF density

Material conditioning: Post heat aging 24Hrs at 82° C

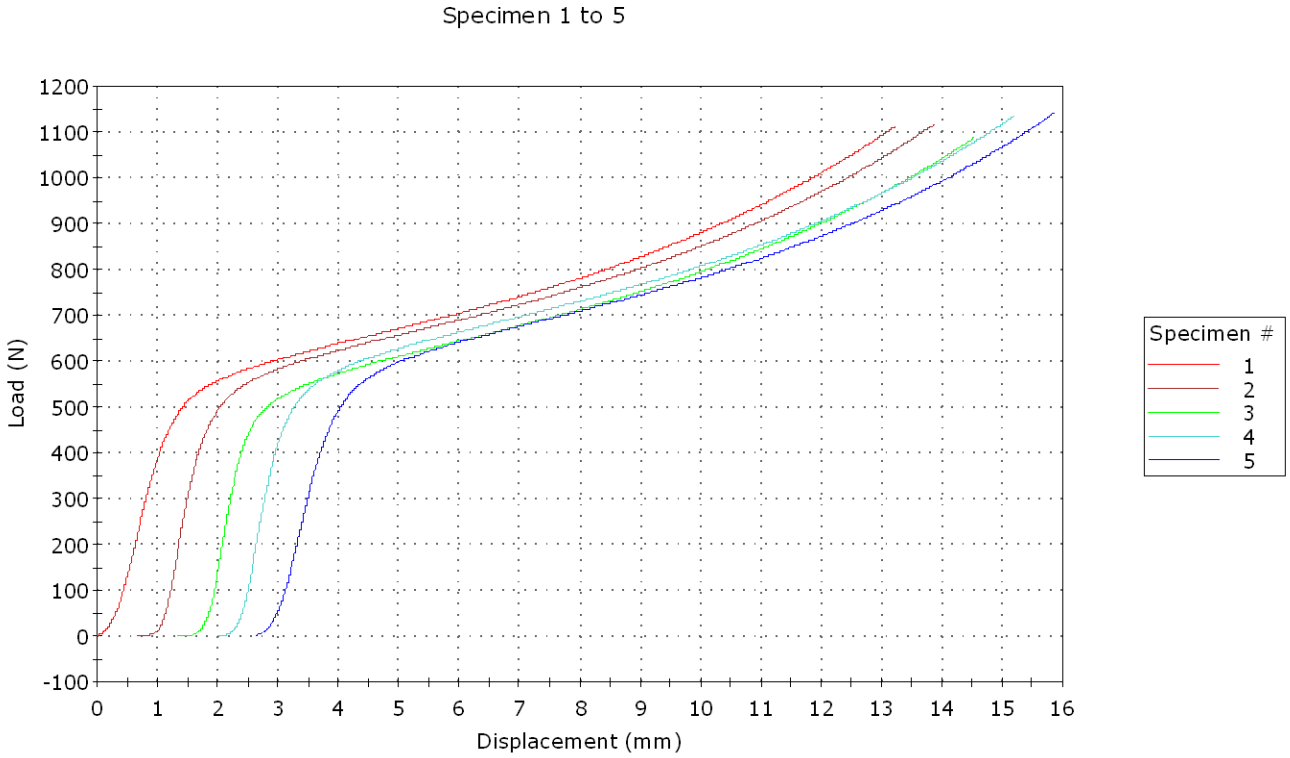
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.101	0.123	0.184
2	0.102	0.125	0.185
3	0.0976	0.121	0.180
4	0.105	0.128	0.188
5	0.105	0.128	0.189
Mean	0.102	0.125	0.185
Std. Dev.	0.00	0.00	0.00

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Wednesday, May 18, 2011

Tested By: Dave Marlett

Material identification: 5654 101P15002 2.0 PCF density

Material conditioning: Post heat aging 24Hrs at 82° C

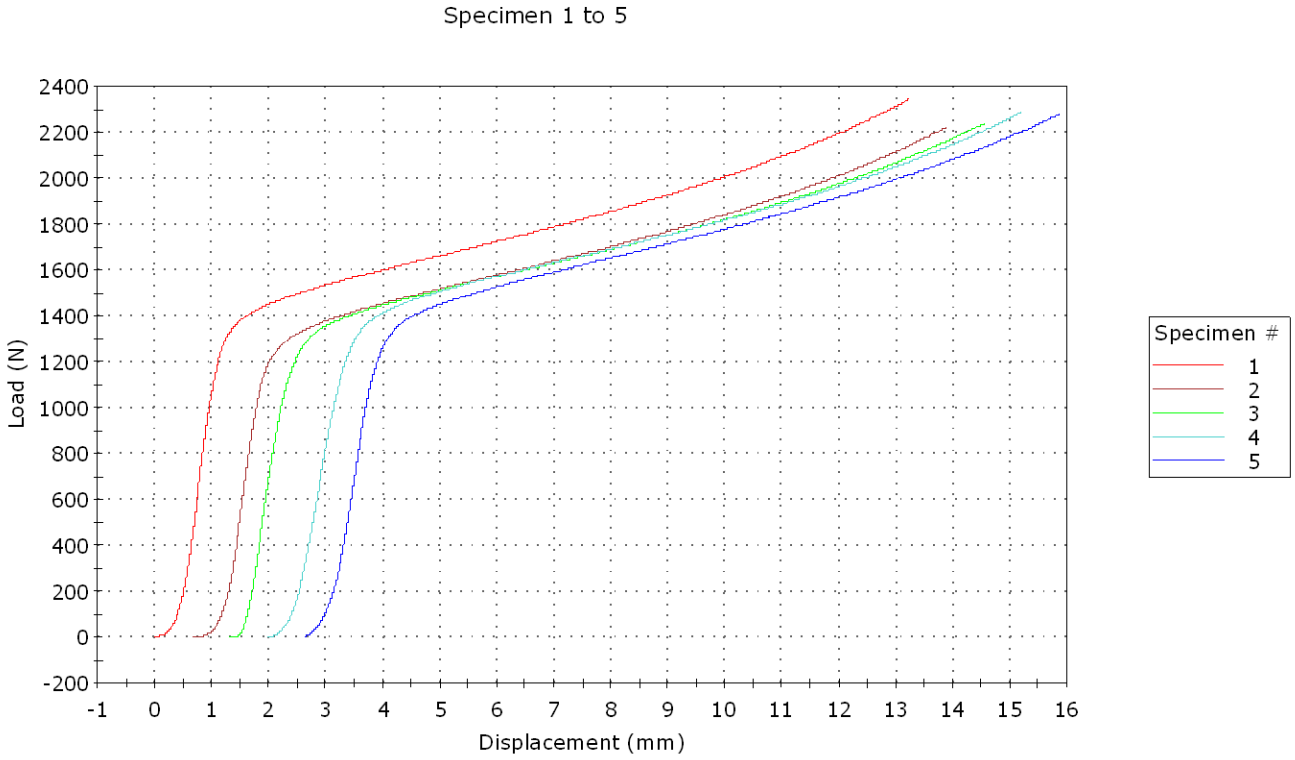
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.258	0.300	0.392
2	0.240	0.282	0.371
3	0.247	0.287	0.374
4	0.252	0.294	0.383
5	0.252	0.295	0.382
Mean	0.250	0.292	0.380
Std. Dev.	0.01	0.01	0.01

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Wednesday, May 18, 2011

Tested By: Dave Marlett

Material identification: 5654 101P15002 3.0 PCF density

Material conditioning: Post heat aging 24Hrs at 82° C

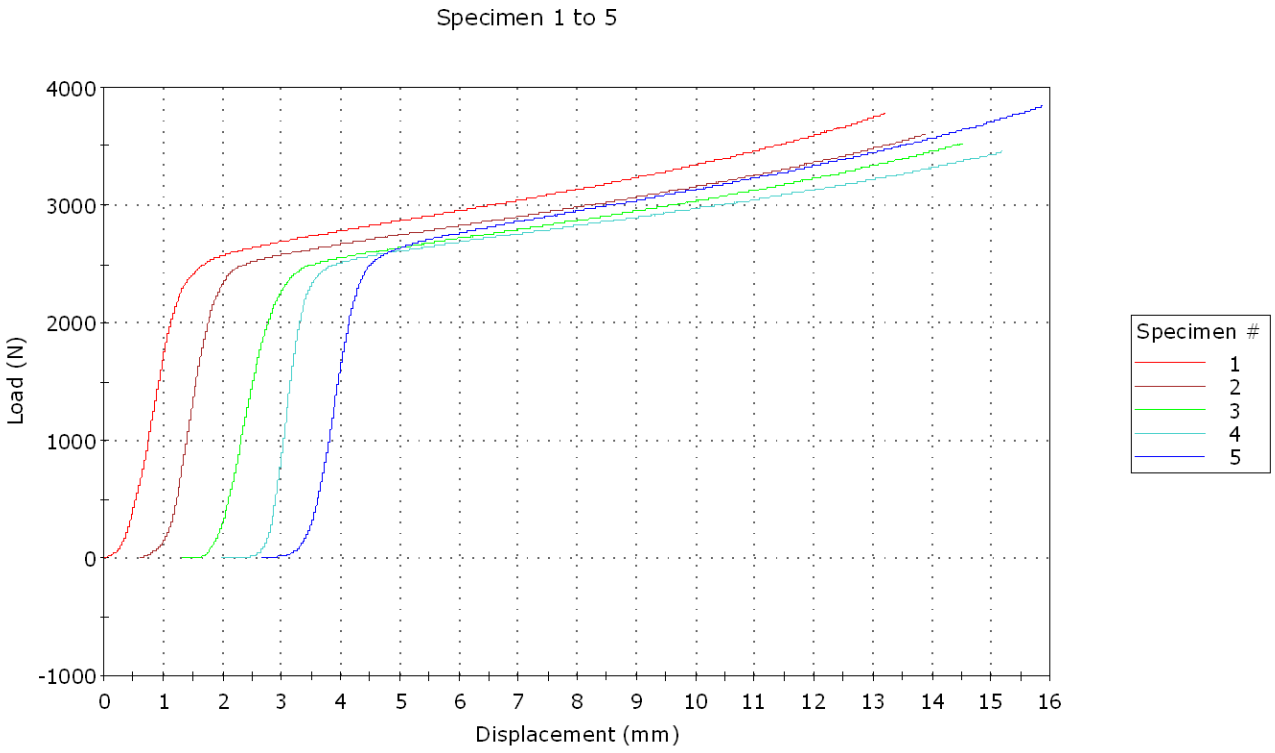
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.455	0.514	0.636
2	0.447	0.500	0.607
3	0.437	0.490	0.596
4	0.443	0.491	0.585
5	0.459	0.523	0.648
Mean	0.448	0.504	0.615
Std. Dev.	0.01	0.01	0.03

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Thursday, May 19, 2011

Tested By: Dave Marlett

Material identification: 7654 101P17001 1.0 PCF density

Material conditioning: Post heat aging 24Hrs at 82° C

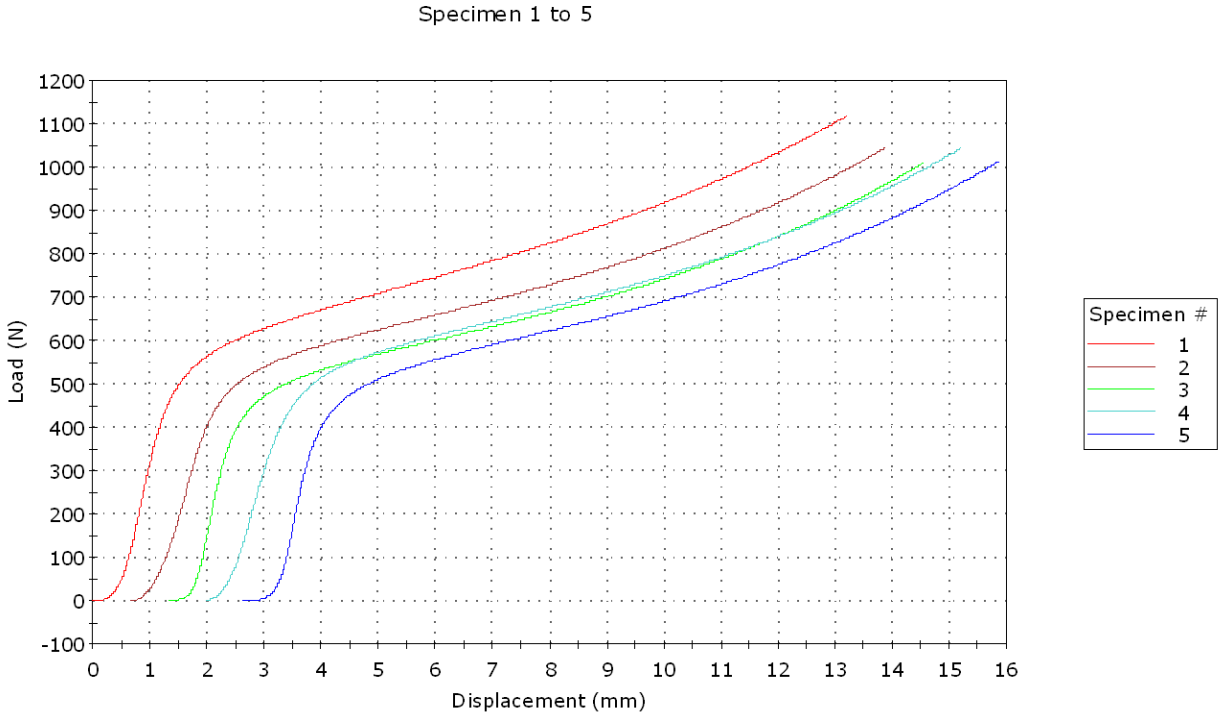
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.104	0.131	0.186
2	0.0949	0.119	0.173
3	0.0904	0.113	0.167
4	0.0947	0.118	0.173
5	0.0897	0.113	0.168
Mean	0.0947	0.119	0.173
Std. Dev.	0.01	0.01	0.01

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Thursday, May 19, 2011

Tested By: Dave Marlett

Material identification: 7654 101P17001 2.0 PCF density

Material conditioning: Post heat aging 24Hrs at 82° C

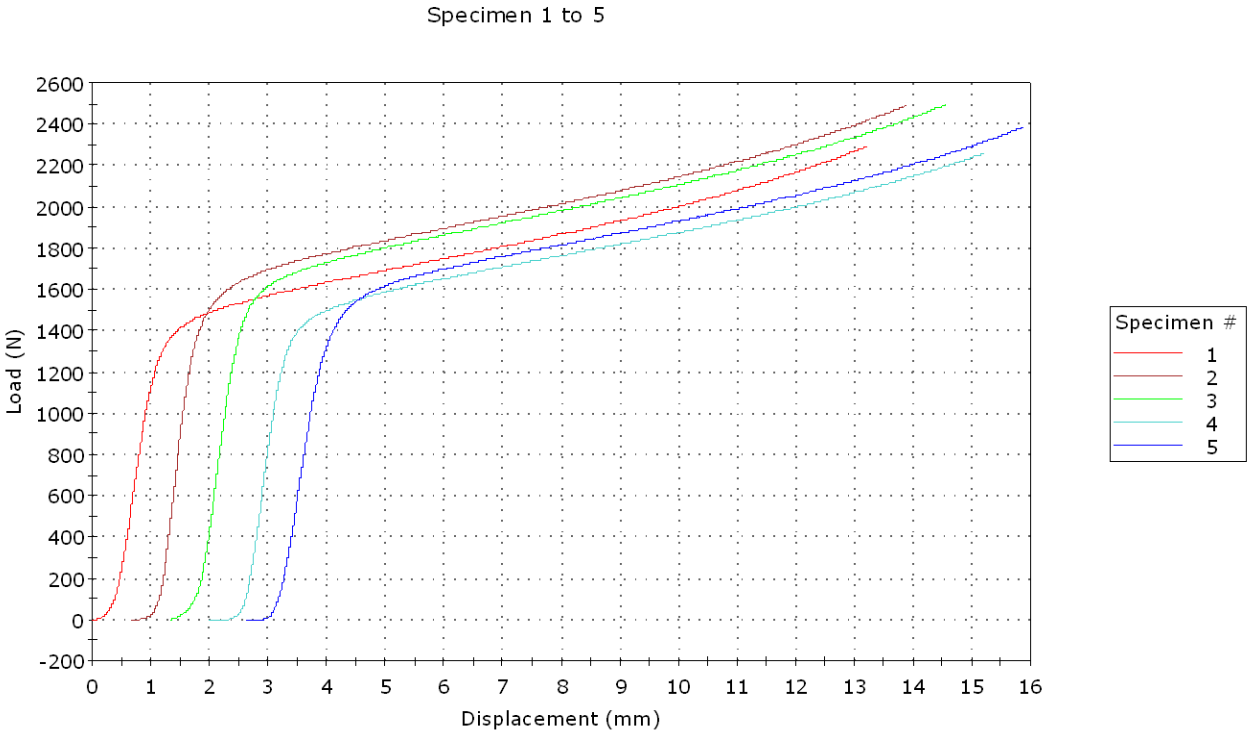
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.264	0.305	0.385
2	0.295	0.336	0.419
3	0.296	0.338	0.419
4	0.267	0.307	0.380
5	0.282	0.322	0.401
Mean	0.281	0.322	0.401
Std. Dev.	0.02	0.02	0.02

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Thursday, May 19, 2011

Tested By: Dave Marlett

Material identification: 7654 101P17001 3.0 PCF density

Material conditioning: Post heat aging 24Hrs at 82° C

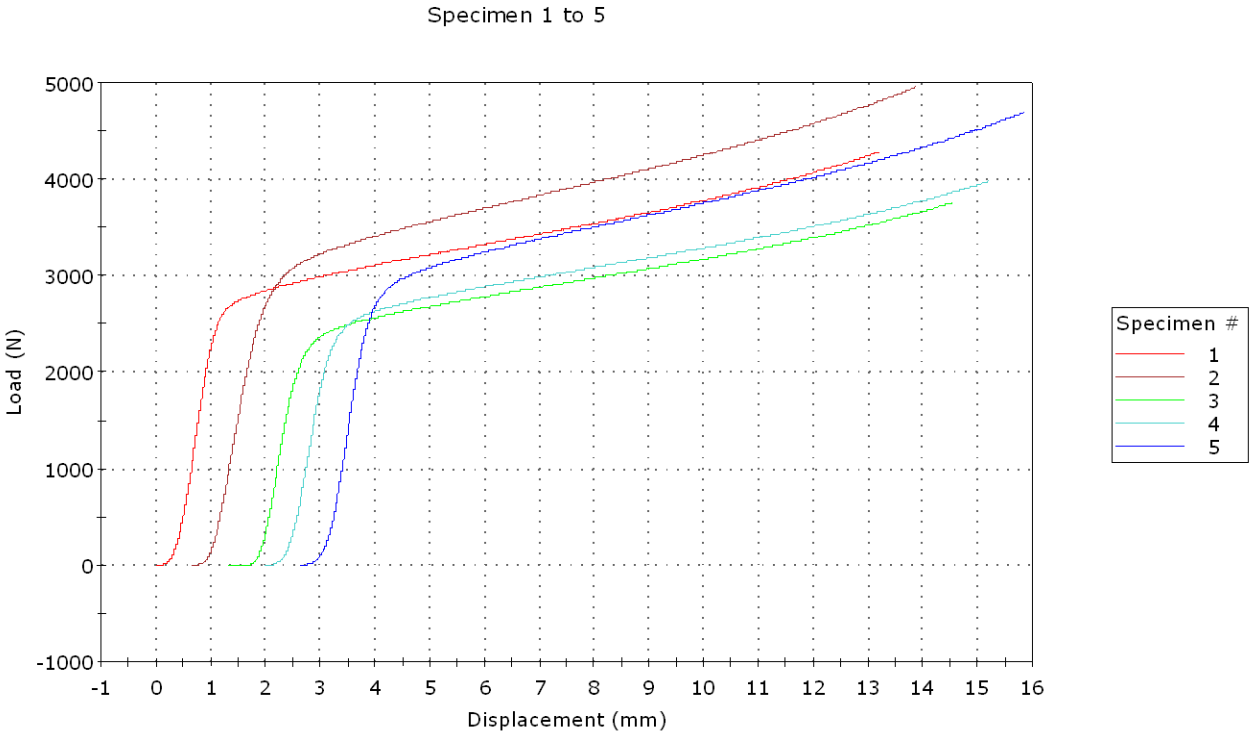
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.504	0.579	0.721
2	0.563	0.661	0.834
3	0.439	0.507	0.632
4	0.467	0.537	0.669
5	0.537	0.625	0.789
Mean	0.502	0.582	0.729
Std. Dev.	0.05	0.06	0.08

Compression Deflection per D1621-10
Customer: Flint Hills Resources
Job#: 110250008

Date: Wednesday, May 18, 2011

Tested By: Dave Marlett

Material identification: S7454 101P27002S 1.2 PCF density

Material conditioning: Post heat aging 24Hrs at 82° C

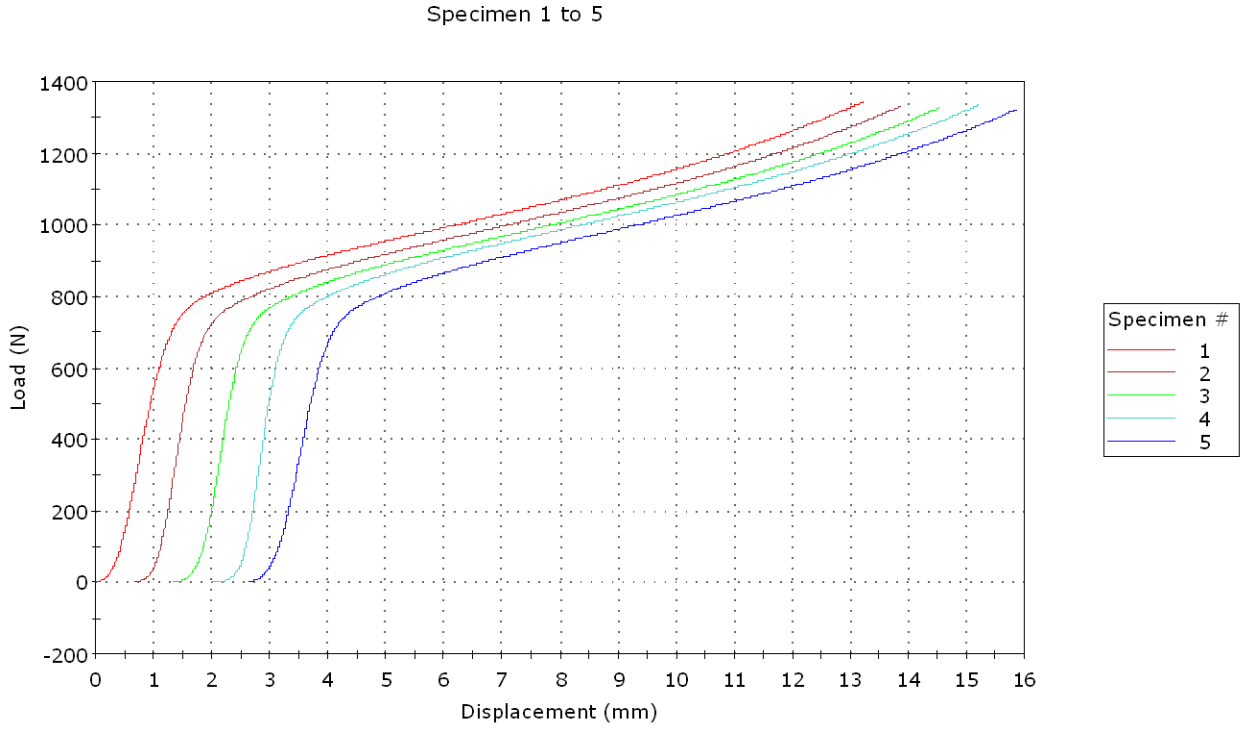
Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07258

Graph 1



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.145	0.173	0.225
2	0.144	0.172	0.223
3	0.143	0.171	0.223
4	0.144	0.172	0.224
5	0.141	0.170	0.222
Mean	0.144	0.172	0.223
Std. Dev.	0.00	0.00	0.00

REVISED DTL REPORT NUMBER
110450085Rev.1

Since 1903

DETROIT TESTING LABORATORY, INC.

PREPARED FOR
FLINT HILLS RESOURCE
501 BRUNNER STREET
PERU IL 61354

ATTENTION
DENNIS PANIER

CUSTOMER PURCHASE ORDER NUMBER
PEP10677

REPORT DATE
JULY 14, 2011

Detroit Testing Laboratory, Inc.
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Warren, Michigan 48092 USA
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REPORTED / APPROVED BY:

DETROIT TESTING LABORATORY, INC.

David Smith, Department Manager
Materials Testing

Timothy R. Geiger, Group Manager
Materials Testing

DS/TRG/krs

PURPOSE

The purpose of this test report is to present the test results obtained during the performance of a test program. This report includes a brief description of the samples presented for test, a list of the documents presented as test instructions, and a summary of the testing performed and the results obtained. Applicable requirements and conclusions are based on the criteria provided by our client, or as specified in the reference document(s).

WORK REQUESTED / REFERENCE DOCUMENT(s)

Compression (As Received) per ASTM D1621-10
Compression (After Heating) per ASTM D1621-10
Flammability (As Received) per FMVSS 302-98
Compression (As Received) per ASTM D1621-10, Re-test
Compression (After Heating) per ASTM D1621-10, Re-test

SAMPLE DESCRIPTION

Three (3) foam materials identified as 5354 104P75040 1.0pcf, 2.0pcf and 3.0pcf
Additional samples of 104P75040 2.0 pcf received 6/24/11.

SAMPLE CONDITIONING

Prior to testing, the samples were conditioned at 23 °C ±2 °C and 50% ±5% relative humidity, as applicable.

TESTING PERFORMED

COMPRESSION (AS RECEIVED) PER ASTM D1621-10

Procedure — Foam specimens were tested as received. The samples measured three inches wide by three inches long and were one inch thick. The test speed was 2.5mm/min.

Results

Specimen	Average Compressive strength at 10% strain (MPa)	Average Compressive strength at 25% strain (MPa)	Average Compressive strength at 50% strain (MPa)
5354 104P75040 1.0 PCF density	0.0795	0.1050	0.1490
5354 104P75040 2.0 PCF density	0.1690	0.2030	0.2560
5354 104P75040 3.0 PCF density	0.3590	0.4020	0.4780

Requirements — No specific criteria provided.

Conclusion — To be determined by Flint Hills Resource.

COMPRESSION (AFTER HEATING) PER ASTM D1621-10

Procedure — Foam specimens were tested after 24 hours of heat aging at 82° C. The samples measured three inches wide by three inches long and were one inch thick. The test speed was 2.5mm/min.

Results

Specimen	Average Compressive strength at 10% strain (MPa)	Average Compressive strength at 25% strain (MPa)	Average Compressive strength at 50% strain (MPa)
5354 104P75040 1.0 PCF density	0.0840	0.1080	0.1540
5354 104P75040 2.0 PCF density	0.1830	0.2180	0.2720
5354 104P75040 3.0 PCF density	0.3930	0.4380	0.5240

Requirements — No specific criteria provided.

Conclusion — To be determined by Flint Hills Resource.

FLAMMABILITY (AS RECEIVED) PER FMVSS 302-98

Results

5354 104P75040 1.0 PCF density:

Specimen	Burn Time (sec)	Burn Length (mm)	Burn Rate (mm/min)
1	0	0	SE
2	0	0	SE
3	0	0	SE
4	0	0	SE
5	0	0	SE

5354 104P75040 2.0 PCF density:

Specimen	Burn Time (sec)	Burn Length (mm)	Burn Rate (mm/min)
1	0	0	SE
2	0	0	SE
3	0	0	SE
4	0	0	SE
5	0	0	SE

5354 104P75040 3.0 PCF density:

Specimen	Burn Time (sec)	Burn Length (mm)	Burn Rate (mm/min)
1	0	0	SE
2	0	0	SE
3	0	0	SE
4	0	0	SE
5	0	0	SE

SE= Self Extinguishing

Requirements Maximum Burn Rate of 102 mm/min

Conclusion Specimens met the stated requirement.

COMPRESSION (AS RECEIVED) PER ASTM D1621-10, RE-TEST

Procedure Foam specimen 5354 104P75040 2.0 PCF density was tested as received. The samples measured three inches wide by three inches long and were one inch thick. The test speed was 2.5 mm/min..

Results

Specimen	Average Compressive strength at 10% strain (MPa)	Average Compressive strength at 25% strain (MPa)	Average Compressive strength at 50% strain (MPa)
5354 104P75040 2.0 PCF density	0.1990	0.2370	0.3060

Requirements No specific criteria provided.

Conclusion To be determined by Flint Hills Resource.

COMPRESSION (AFTER HEATING) PER ASTM D1621-10, RE-TEST

Procedure Foam specimen 5354 104P75040 2.0 PCF density was tested after 24 hours of heat aging at 82 °C. The samples measured three inches wide by three inches long and were one inch thick. The test speed was 2.5 mm/min

Results

Specimen	Average Compressive strength at 10% strain (MPa)	Average Compressive strength at 25% strain (MPa)	Average Compressive strength at 50% strain (MPa)
5354 104P75040 2.0 PCF density	0.2070	0.2450	0.3130

Requirements No specific criteria provided.

Conclusion To be determined by Flint Hills Resource.

SAMPLE DISPOSITION

Samples will be retained at Detroit Testing Laboratory, Inc. for 30 days and then disposed of, unless otherwise specified by client.

Remark: This test report was revised to include retest data from samples received 6/24/11.

TEST EQUIPMENT

Detroit Testing Laboratory, Inc.'s calibration system meets the requirements of ISO 17025:2005.

DTL ID	Description	Manufacturer	Model Number	Cal Due
07298	DIGITAL THERMOMETER	Omega	HH81	01/12
EC109	Environmental Chamber	Thermotron	1.2	NCR
07257	LOAD CELL (20000LB/100kN)	Instron	2518-801	07/11
07095	T/C TEST MACHINE (100 kN)	Instron	4505	07/11
07570	DIGITAL CALIPERS	Mitutoyo	CD-6" P	06/11
07258	Load Cell	Instron	2518-805	07/11
07133	TensileTester	Instron	4201	07/11
14286	Stop Watch	VWR / Control Company	62379-460	11/11
12190	Thermohumidigraph	Newport Electronics Inc.	CT485B	06/11
08462	Flammability Chamber	Sunspot Products	None	NCR
00850	Oven	Blue M	OV-490A-2	NCR
10890	Hydra Data Bucket	Fluke	2625A	02/12

NCR -- No Calibration Required

APPENDICES: Appendix A: Test Data

Customer: Flint Hills Resource

Job#: 110450085

Compression Deflection per D1621-10

Tested By: Dave Marlett

Material identification: 5354 104P75040 1.0 PCF density

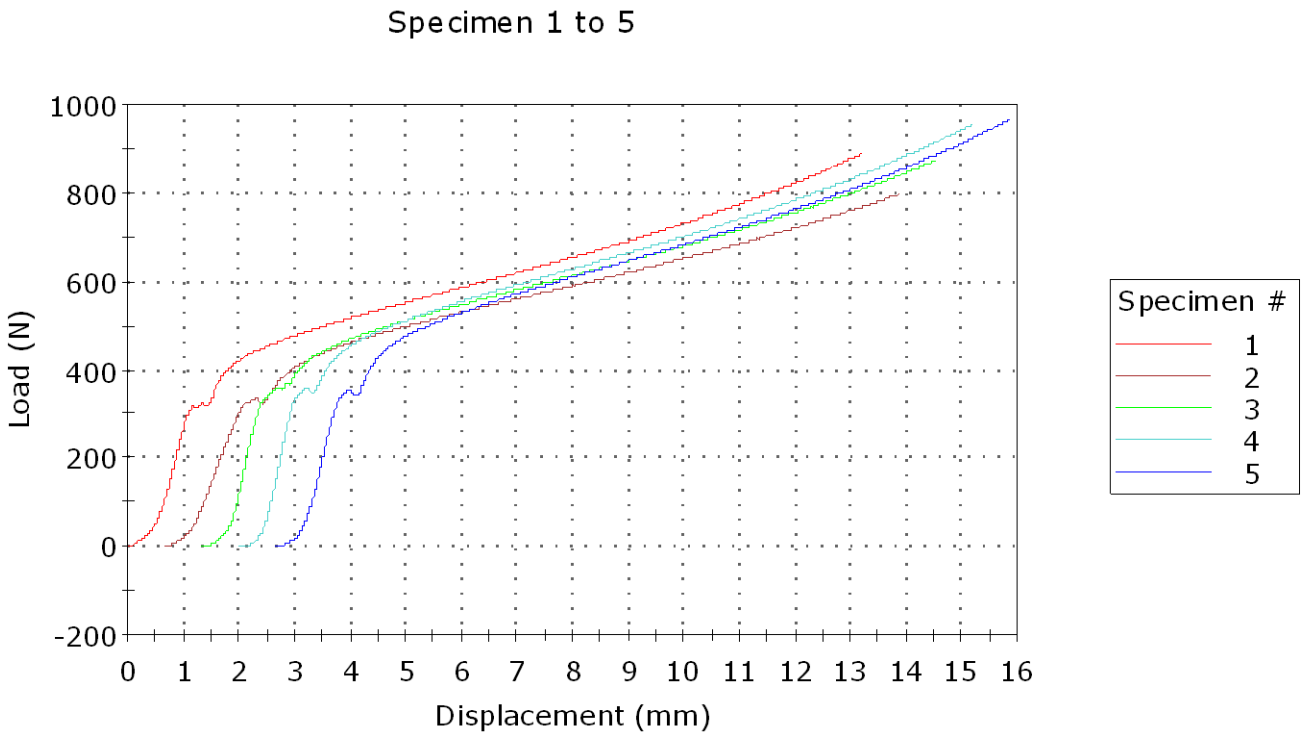
Material conditioning: As received

Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07133

Load cell: 07258



Customer: Flint Hills Resource

Job#: 110450085

Compression Deflection per D1621-10

Tested By: Dave Marlett

Material identification: 5354 104P75040 2.0 PCF density

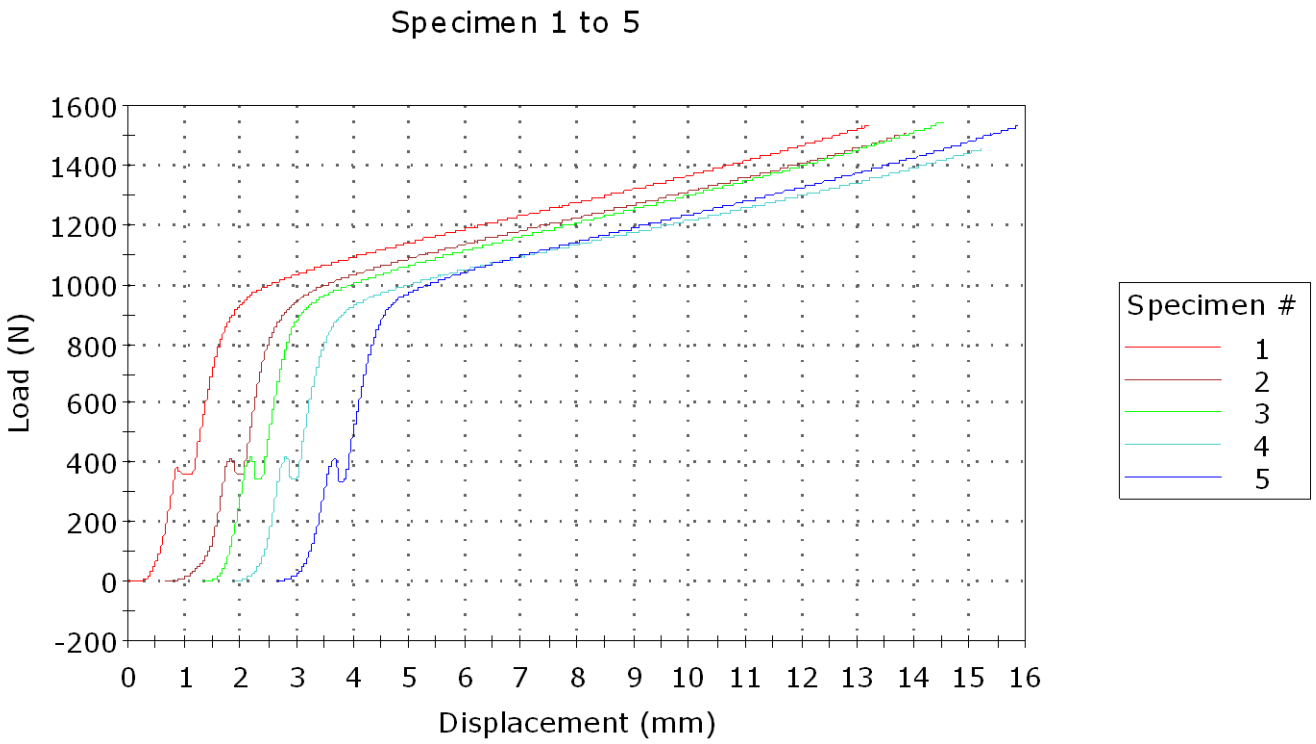
Material conditioning: As received

Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07133

Load cell: 07258



Customer: Flint Hills Resource

Job#: 110450085

Compression Deflection per D1621-10

Tested By: Dave Marlett

Material identification: 5354 104P75040 3.0 PCF density

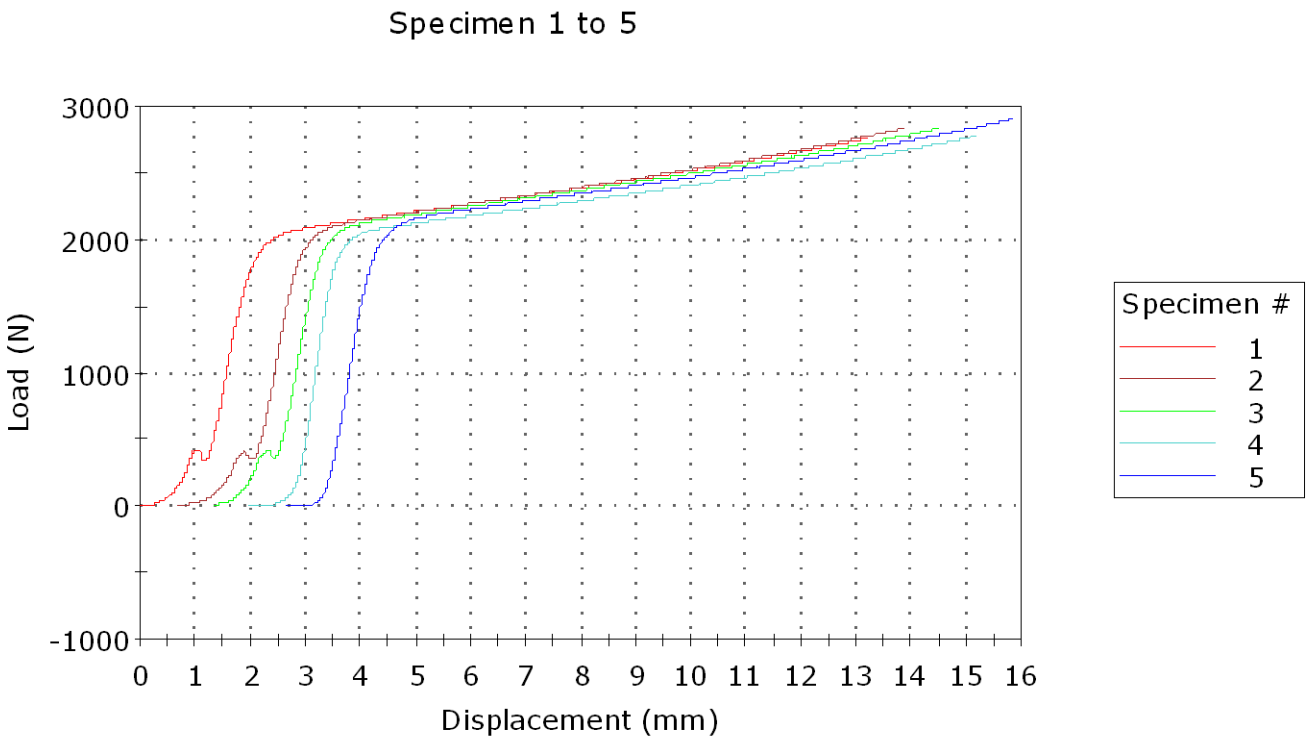
Material conditioning: As received

Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07133

Load cell: 07258



Customer: Flint Hills Resource

Job#: 110450085

Compression Deflection per D1621-10

Tested By: Dave Marlett

Material identification: 5354 104P75040 1.0 PCF density

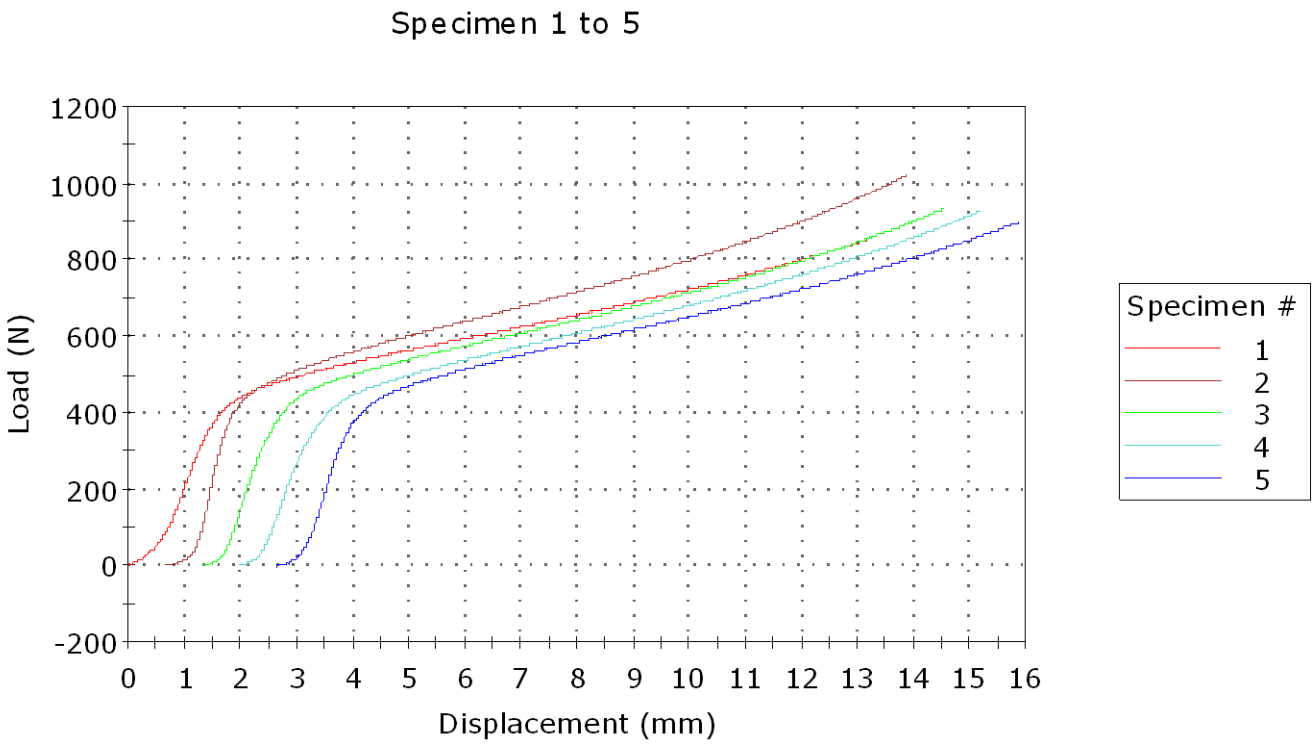
Material conditioning: Heat aged

Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07257



Customer: Flint Hills Resource

Job#: 110450085

Compression Deflection per D1621-10

Tested By: Dave Marlett

Material identification: 5354 104P75040 2.0 PCF density

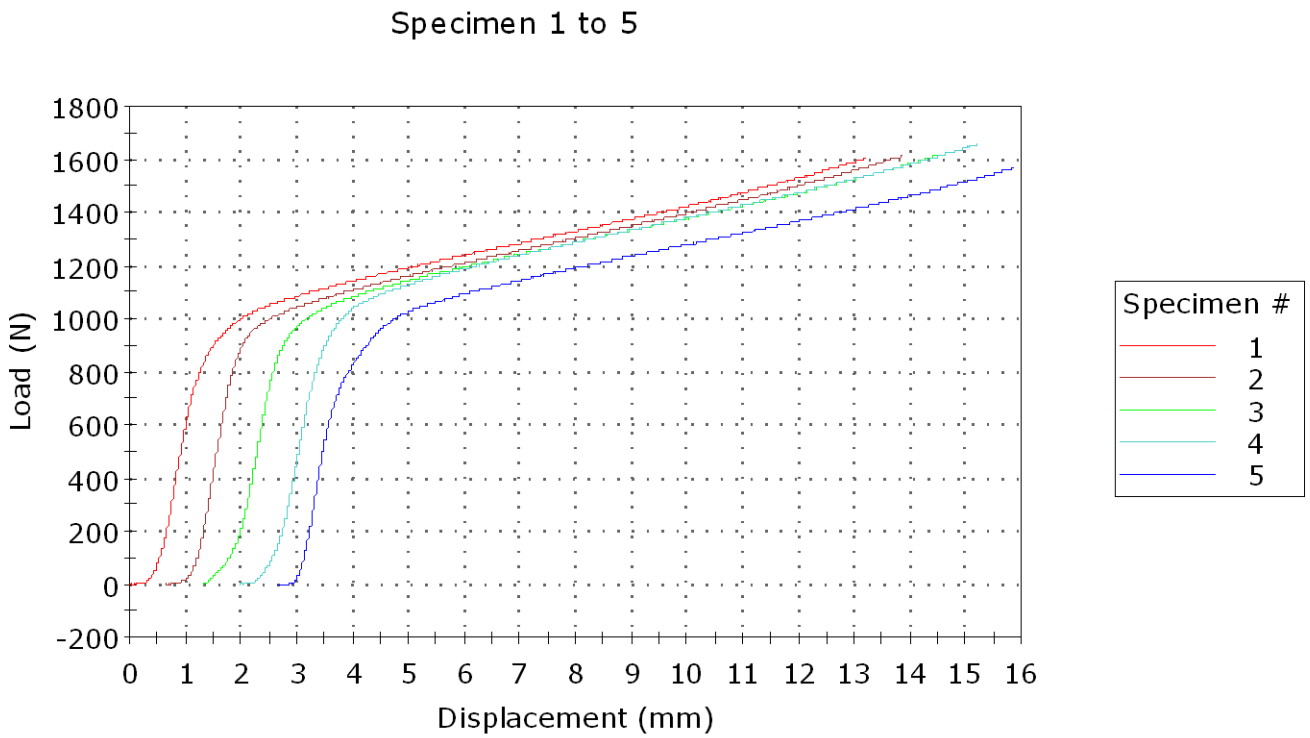
Material conditioning: Heat aged

Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07257



Customer: Flint Hills Resource

Job#: 110450085

Compression Deflection per D1621-10

Tested By: Dave Marlett

Material identification: 5354 104P75040 3.0 PCF density

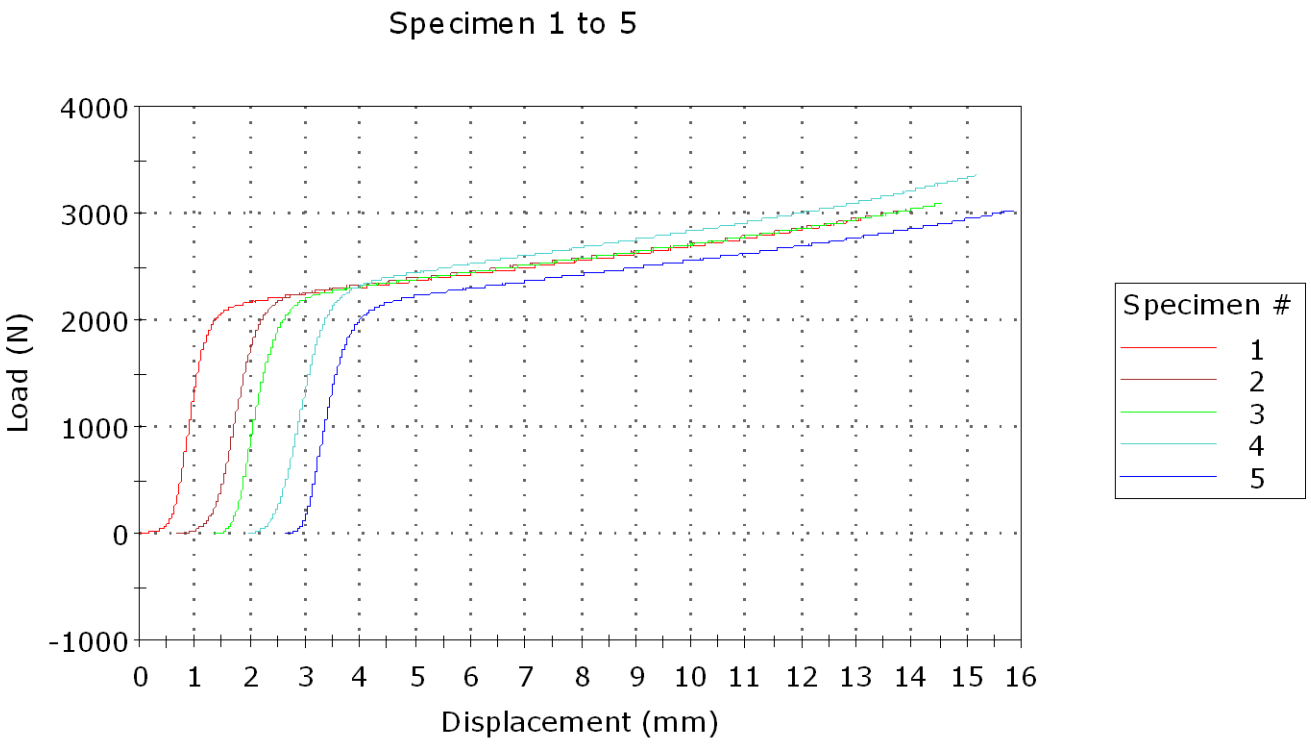
Material conditioning: Heat aged

Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07257



Customer: Flint Hills Resources

Job#: 110450085

Compression Deflection per D1621-10

Tested By: Dave Marlett

Material identification: 5354 104P75040 2.0 PCF density

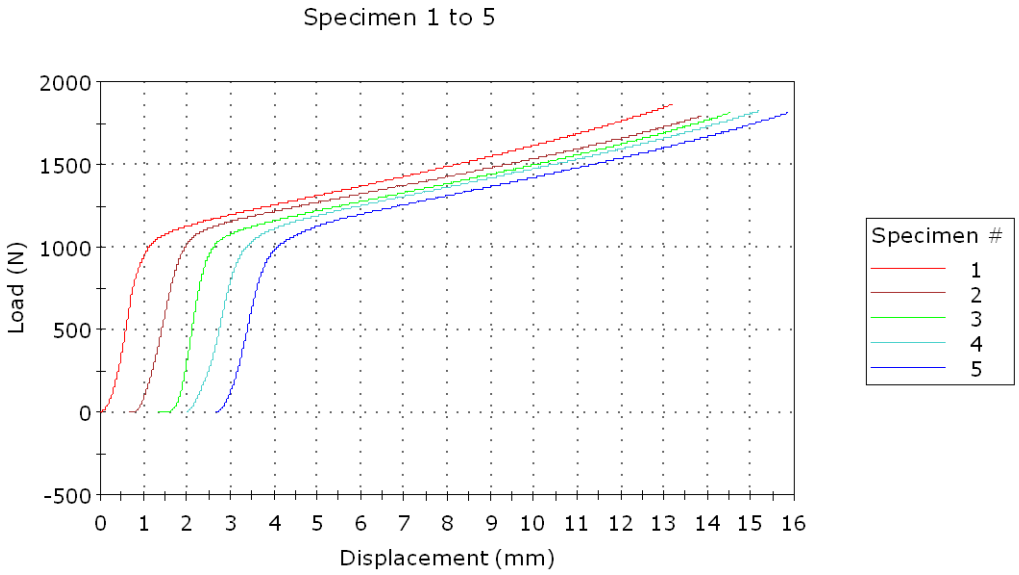
Material conditioning: As received

Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07257



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.201	0.239	0.313
2	0.201	0.237	0.302
3	0.198	0.235	0.304
4	0.199	0.238	0.307
5	0.196	0.235	0.304
Mean	0.199	0.237	0.306
Std. Dev.	0.00	0.00	0.00

Customer: Flint Hills Resources

Job#: 110450085

Compression Deflection per D1621-10

Tested By: Dave Marlett

Material identification: 5354 104P75040 2.0 PCF density

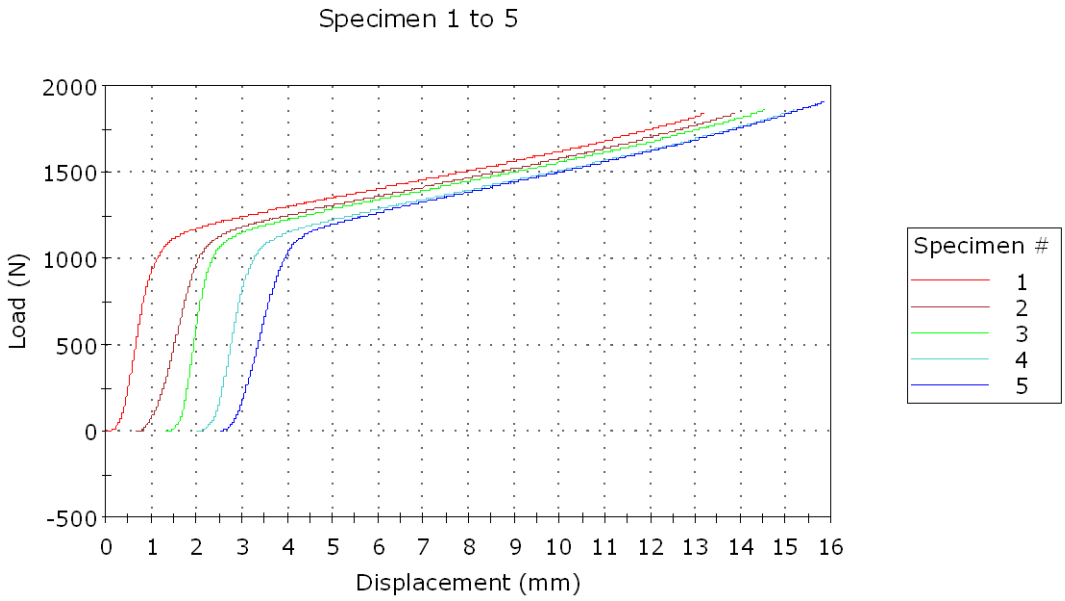
Material conditioning: Heat Aged

Test conditions: 23° C / 50% RH

Speed: 2.5mm/min

Load frame: 07095

Load cell: 07257



	Compressive strength at 10 % strain (MPa)	Compressive strength at 25 % strain (MPa)	Compressive strength at 50 % strain (MPa)
1	0.209	0.245	0.310
2	0.206	0.244	0.310
3	0.209	0.246	0.313
4	0.205	0.243	0.313
5	0.208	0.248	0.321
Mean	0.207	0.245	0.313
Std. Dev.	0.00	0.00	0.00

AngelTrax Vulcan™ Series VULCANV12

12 Channel HD/IP Mobile DVR Specifications for Mass Transit Applications

The twelve (12) channel transit bus surveillance system requested must meet the following minimum requirements:

- The vendor is permitted to propose multiple systems within their response.
- The vendor is to include pricing for the AngelTrax Vulcan Series twelve (12) channel HD mobile digital video recording system.

SYSTEM REQUIREMENTS

- The system must be capable of recording twelve (12) channels of audio and video in 1080P simultaneously, at up to 30fps, including up to eight (8) HD cameras capable of 1080P video and audio and up to four (4) IP HD cameras capable of up to 1080P (at 1920x1080).
- The MDVR must be capable of the following recording resolutions:
  - NTSC: 1080P (1920x1080), 720P (1280x720), WD1 (928x480), WHD1 (928x240), WCIF (464x240), D1 (704x480), HD1 (704x240), CIF (352x240)
  - PAL 1080P (1920x1080), 720P (1280x720), WD1 (928x576), WHD1 (928x288), WCIF (464x288), D1 (704x576), HD1 (704x288), CIF (352x288).
- The system must be capable of optimizing high quality video and recording time by selecting frame rates, recording quality and resolution for each camera independently.
- The system must have a 4-7 second brownout protection during a loss of power to protect media. Duration will be determined by power consumption at time of power loss.
- The front of the MDVR must have status indicator lights to include HDD, SD, GPS, NET, HTR, PWR, REC, VLOSS, ALM and ERR. The front of the MDVR must also have an IR receiver. These lights and IR receiver must remain visible when the front door of the MDVR is closed and locked. An optional light indicator box must be available for easy viewing by the driver.
- The system must also continue to record while being viewed remotely or wirelessly downloading video by multiple users.
- The MDVR system must operate utilizing an embedded Linux platform for stability and reliability.

MDVR FEATURES

- The MDVR must have a mounted extension cable for connection to an optional touchscreen monitor used for setup and troubleshooting without removing the front door panel.
- The MDVR must have a “plug and play” connection on the rear panel for an onboard live monitor.
- The MDVR “panic button” located near the driver’s seat must have hard drive location “marking” capabilities and serve as a live recording indicator.
- The MDVR must have one alarm input, one output and six (6) sensor inputs for marking events defined by the customer such as right turn, left turn, reverse, brake, door 1 and door 2.
- The hot-swappable SATA hard drive shall have a minimum storage capacity of 1TB of high quality video. The term “hot-swappable” shall mean that the hard drive may be removed and/or replaced while the MDVR is in full powered operation, without any damage.
- Once the hard drive is full, the system will overwrite the oldest data first.
- The hard drive must be easily accessible from the front panel.
- The hard drive housing must include a heater.
- The MDVR must have one (1) SD card slot for redundant recording, as desired by the user. The SD recorder must have separate settings to allow for increased recording time when in redundant mode.
- The MDVR must have slots to accept two (2) SIM cards for dual cellular network capabilities. This feature must be included within the MDVR housing.
- The MDVR must have a USB port on the front of the unit for removable storage to be able to download video or images directly from the MDVR or upgrade the firmware of the device, the CP4 monitor, IPC or GPS. The USB port must also accommodate a mouse or the Vulcan™ Series Easy Check device management software and Wi-Fi module.
- All recording on the MDVR must utilize H.264 compression.

AngelTrax Vulcan™ Series VULCANV12

- The MDVR must have the capability to connect to an Ethernet port at 10/100M/1000M, for connecting the MDVR to a wired Ethernet connection or for connecting IP cameras.
- The MDVR must power up based on an 8-36V ignition trigger under continuous record, alarm record, motion record and schedule recording options. In addition, the MDVR must be able to be programmed to stay powered on and recording for up to 24 hours after the vehicle is off.
- The MDVR must be capable of onboard viewing, downloading video and setting up the MDVR via a laptop or touchscreen monitor directly connected to the MDVR.
- The HD cameras must connect directly to the rear of the MDVR via DB44 cable with 4 pin aviation grade connectors.
- The MDVR must have the ability to adjust the brightness, contrast, color and saturation individually on each camera and must also be able to electronically mirror or flip the camera displays.
- The MDVR must have the ability to store alarm events without the events being overwritten.
- The MDVR must have an integrated 3-axis accelerometer and must be capable of tagging the video and/or sending alerts if the vehicle exceeds a pre-determined G-Force threshold. An additional connection must be available for an external accelerometer for use in driver behavior reporting.
- The MDVR must have the ability to provide the following, available for immediate download:
  - A programmed channel snapshot, taken when the panic button is pressed or when an alarm or event is triggered, and
  - Video clips, recorded in pre-defined lengths, of the camera view before and after the snapshot is taken.
- The MDVR must have the ability to detect video loss, motion or a camera being covered and be able to trigger an alarm or event independently.
- The MDVR must have the ability to upgrade the device firmware, CP4, IPC or GPS, either directly from a USB drive plugged into the MDVR or remotely using an active Internet connection.
- The MDVR will be capable of recording optional Virtual Synchronized Mapping™ as a permanently embedded video record simultaneously recorded with the video, providing a court-ready GPS map for evidence without the use of an Internet connection or the Google Maps™ mapping service.

MDVR WIRELESS CONNECTIVITY

- The MDVR must have a connection on the rear panel for an optional GPS antenna.
- The MDVR must include a port for an optional Wi-Fi or cellular antenna on the rear panel.
- The MDVR must have the ability to connect up to two (2) internal cellular modems without requiring any external hardware other than antennas. The cellular connections must be able to be set to 2G/3G/4G or a mix of the networks; must have a place to enter an APN number, user name and password; and must work with both CHAP and PAP certifications.
- The MDVR must be able to connect to a Pro 8™ Central Management System (CMS) server for live tracking, remote view, MDVR health, remote playback and remote video download.
- The MDVR must be able to switch from cellular download to Wi-Fi download when in range of the Wi-Fi network or be able to be programmed for video download using Wi-Fi only.

MECHANICAL REQUIREMENTS

- The MDVR shall have a lockable, hinged front door panel with rounded edges for safe access to any removable components such as the hard drive.
- The lockable front door must provide protection from front access by unauthorized personnel, with no exposed controls, and must offer a wireless remote control for easy setup and programming by authorized personnel.
- The MDVR must have a rear cover to prevent tampering with connections.
- The MDVR casing must be of extruded aluminum and built for MIL-STD-810F shock resistance and must operate between -40 degrees and 158 degrees Fahrenheit without additional enclosures.
- The MDVR must have user-selectable settings to shut down operations autonomously when temperature or voltage limits are exceeded. Temperature and voltage limits may be set by user, within the MDVR's recommended operating limits.

AngelTrax Vulcan™ Series VULCANV12

- The MDVR must have user-selectable settings to shut down operations autonomously when temperature or voltage limits are exceeded. Temperature and voltage limits may be set by user, within the MDVR's recommended operating limits.
- The MDVR must pass Random Vibration Test, Test Method/Specification ISO 16750-3:2012 Clause 4.1.2.8.2.
- The MDVR must pass Mechanical Shock Test, Test Method/Specification ISO 16750-3:2012 Clause 4.2.2.2.
- The MDVR shall be rated MIL-STD-810F.
- The MDVR must be of the following dimensions: 8.7"W x 3.5"H x 11.6"D.

ELECTRICAL REQUIREMENTS

- The MDVR must operate within a power input range of 8-36V DC and must be connected with a wire that is a minimum of 16-gauge, with inline fuses, and be internally and continually protected from power surges, voltage spikes and reverse polarity. The MDVR power consumption must not exceed 30 watts.
- A separate, external UPS must be available to regulate fluctuations in vehicle voltage and to provide for operation of all functions at full capacity in the event of an interruption in power to the MDVR.

ENVIRONMENTAL REQUIREMENTS

- The MDVR unit must have high and low temperature protection including a heater and fan.
- The MDVR must have startup protection to prevent damage from voltage fluctuations.

PLAYBACK SOFTWARE

- Playback software must be provided without charge, including upgrades, for the life of the system.
- The playback software must be simple to use and, from one window, allow the user to access live or recorded video from multiple sources.
- The playback sources must include but not be limited to the following:
  - An MDVR hard drive connected to a PC.
  - An MDVR connected to the Pro 8 CMS server via an active Internet connection aboard the vehicle.
  - A PC connected directly to the MDVR via the LAN aboard the vehicle or a server and a live stream from selected vehicles.
- The playback software must be capable of displaying video utilizing zoom, blur, selected camera views and selected microphone audio from all playback sources stated above. Organizing the display to pertinent and specific channel display must be done with a mouse click.
- The playback software must be capable of requesting wireless downloads, when equipped with an active Internet connection.
- The playback software must be capable of easy download for viewing by legal authorities and authorized parties.
- The video must be equipped with a watermark feature to alert the viewer to video alteration or manipulation.
- The playback software must utilize proprietary encryption to limit access to authorized parties.
- The playback software must be capable of converting video to AVI formats for common display.
- The playback software must be able to create "clips" of pertinent event time duration for storage and transmission on multiple media such as thumb drives, DVDs, etc.
- The playback software must display Google Maps™ mapping service and the vehicle's GPS location, if the MDVR is equipped with optional GPS antenna, when the playback PC is connected to the Internet.
- The playback software must be capable of displaying Virtual Synchronized Mapping™, a GPS map of the vehicle location permanently embedded in the video recording, without Internet access, as court-ready evidence.

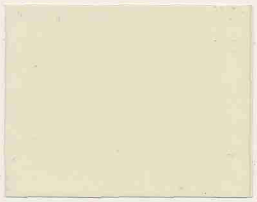
WARRANTY, SERVICE AND SUPPORT

- All hardware shall include a warranty of five (5) years parts and labor.
- Unlimited telephone and email technical support shall be provided at no additional charge for the life of the system.
- Additional extended warranty and service contracts will be available.


29605
Red
5080
Orange
6282
Red
5470
Red
6543
Red
44128
Red
2622
Scarlet
5027
Red
29198
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8554
Flame Red
674
Red
48
Red
77968
Red
51078
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Maroon
32678
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75334
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58360
Aquatone Blue
5079
Blue
95605
Baffin Blue
92095
Blue
43500
Pastel Blue
96581
Sierra Blue
78387
Light Blue
K9441
Blue
6544
Blue
5351
Blue
5205
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K9359
Blue
G9369
Blue
77257
Blue
5240
Bright Med. Blue
7165
Blue
42811
Med. Blue


K9740
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24160
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63203
Blue
2063
Blue
81501
Dark Blue
62703
Light Green
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Med. Green Gold
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29608
Green
5181
Lime
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Green
5081
Green
43073
Signal Green
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Green
79039
Green
7456
Bright Green
5316
Green
1317
Green
546
Green
7666
Green
7498
Green
62006
Green
2015
Green
5363
Pastel Lime
43522
Light Green Gold
5371
Green
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Bahama Yellow
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Harvest Gold

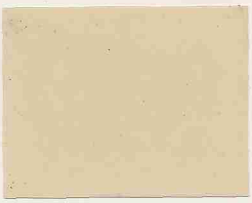

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Solar Yellow
76556
Lunar Yellow
K9599
Yellow
42882
Yellow
5283
Sunflower
8550
Chrome Yellow
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Golden Yellow
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Bright Yellow
5194
Bright Yellow
78134
Yellow
224
Yellow
5248
Yellow
54701
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6561
Yellow
K9590
Yellow
218
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G9737
Yellow
4357
Yellow
24316
Yellow
1021
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31
Omaha Orange
60659
Orange
5146
Orange
24592
Orange
7455
Burnt Orange
55769
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Blue



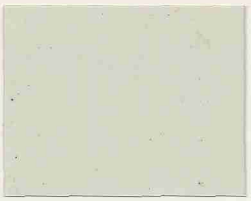
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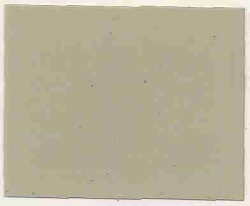
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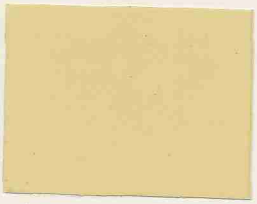
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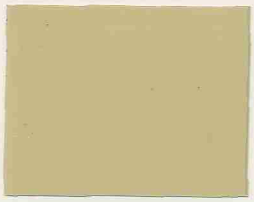
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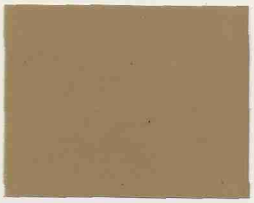
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Beige



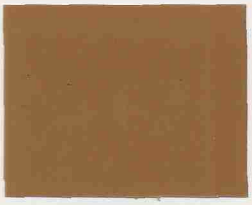
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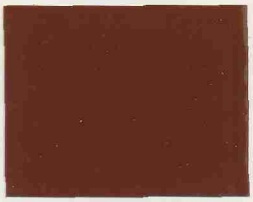
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Beige



96939
Bengal Tan



3295
Brown



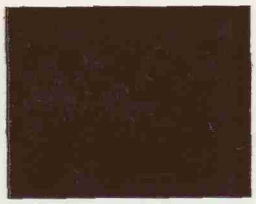
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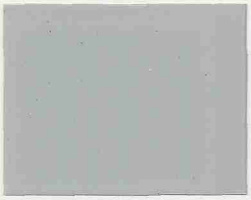
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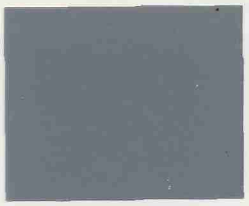
7444
Dark Brown



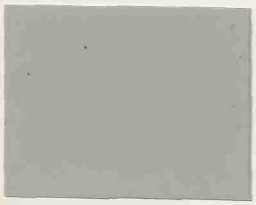
7502
Brown



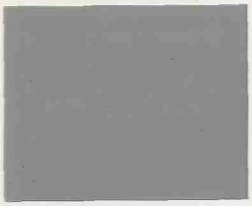
72092
Gray



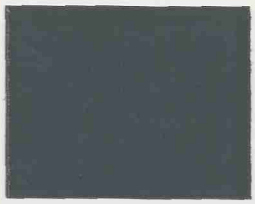
57704
Gray



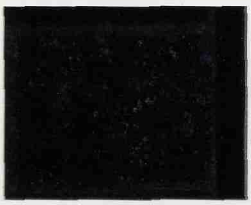
71537
Polar Gray



55137
Gray



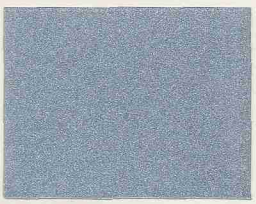
6334
Gray



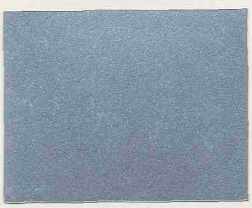
99
Black



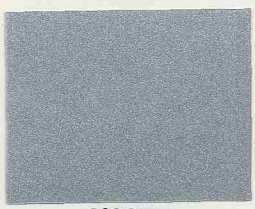
5093
Dark Blue



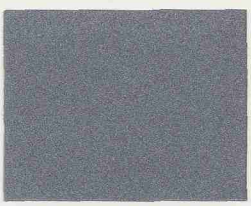
45406
Aztec Silver Met.



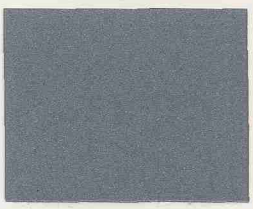
44716
Silver Blue Met.



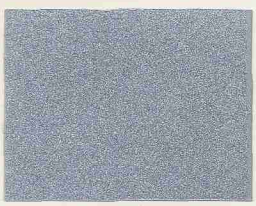
N8075
Indian Silver Met.



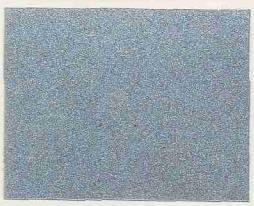
44434
Silver Met.



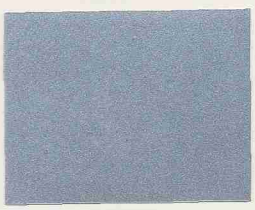
43862
Silver Met.



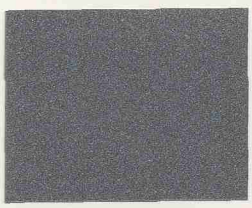
43523
Cloud Silver Met.



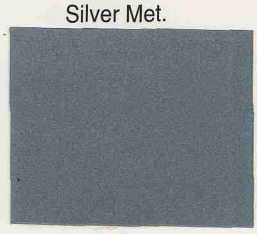
5032
Quick Silver Met.



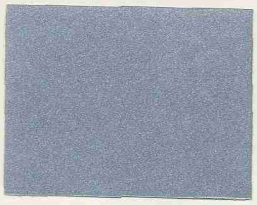
43859
Silver Met.



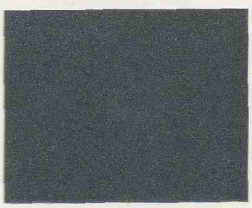
44401
Pewter Gray Met.



14163
Gray Met.



5563
Silver Met.



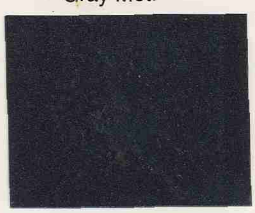
44489
Smoke Gray Met.



44488
Cumulus Gray Met.



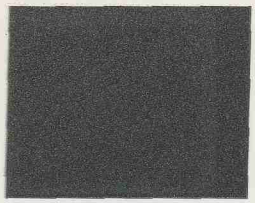
B8012
Dk.Charcoal Met.



44433
Slate Gray Met.



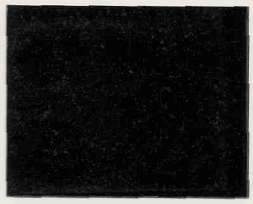
44490
Pepper Gray Met.



45537
Shadow Gray Met.



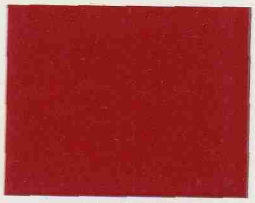
5031
Phantom Gray Met.



44494
Sable Met.



44435
Black Met.



H7994
Seminole Red Met.



44460
Lt. Firethorne Met.



44459
Dk. Firethorne Met.



44467
Dk. Persimmon Met.



44471
Burnt Orange Met.



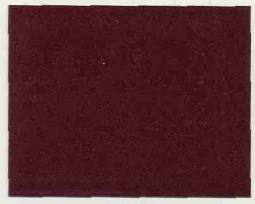
44466
Lt. Persimmon Met.



44458
Autumn Red Met.



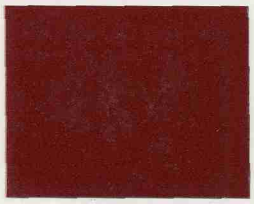
H7926
Carmine Met.



44456
Dk. Burgundy Met.



44457
Lt. Burgundy Met.



43821
Red Bronze Met.



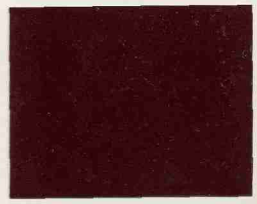
5477
Dark Red Met.



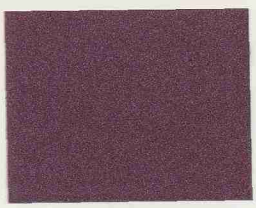
45731
Regent Red Met.



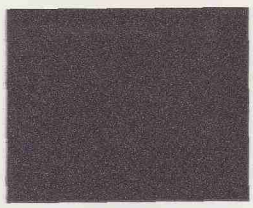
4490
Burgundy Met.



44455
Lt. Maroon Met.



44461
Lt. Rose Met.



44472
Lt. Rose Gray Met.



44473
Dk. Rose Gray Met.



44402
Red Met.



44493
Dk. Violet Met.



44465
Orchid Met.



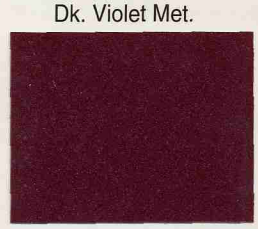
44462
Med. Rose Met.



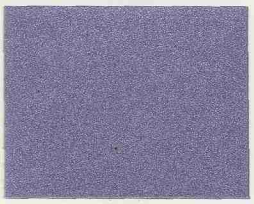
44464
Berry Red Met.



44474
Wine Met.



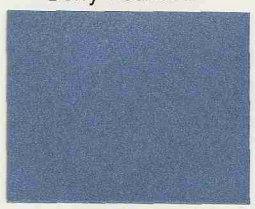
44463
Dk. Rose Met.



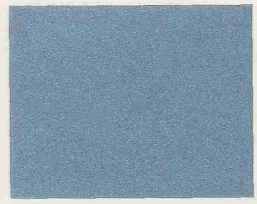
44491
Lt. Violet Met.



5513
Diamond Blue Met.



B8141
Lt. Blue Met.

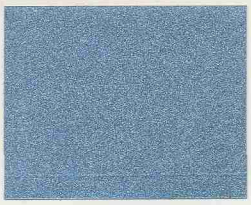


44436
Lt. Blue Met.

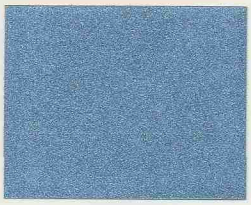


44410
Seascape Blue Met.

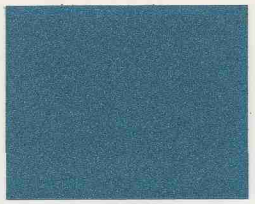

44717
Lt. Blue Met.
B8103
Lt. Jadestone Met.
44479
Med. Potomac Blue Met.
44403
Teal Blue Met.
44438
Lt. Continental Blue Met.
G8124
Lt. Blue Met.
4839
Med. Blue Met.
44425
Med. Aqua Met.
44409
Turquoise Met.
43866
Turquoise Met.
44442
Dk. Continental Blue Met.
44482
Bay Blue Met
5535
Bright Blue Met.
N8076
Lauderdale Blue Met.
44431
Med. Concord Blue Met.
44426
Bright Blue Met.
45615
Regal Blue Met.
7446
Mariner Blue Met.
44429
Dk. Rich Blue Met.
G8125
Sovereign Blue Met.
44404
Biscayne Blue Met.
44427
Lt. Rich Blue Met.
G8067
Vivid Blue Met.
44428
Med. Rich Blue Met.
G8064
Concord Blue Met.
H8061
Panama Blue Met.
44441
Dk. Aqua Met.
44405
Dk. Blue Met.
44481
Plum Met.
44432
Lt. Concord Blue Met.
5155
Blue Met.
45721
Ensign Blue Met.
7870
Haze Blue Met.
B8007
Midnight Blue Met.
44430
Dk. Concord Blue Met.



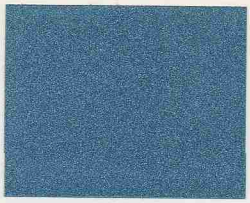
44437
Ice Blue Met.



H7924
Sky Mist Blue Met.



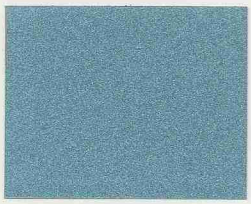
5056
Turquoise Met.



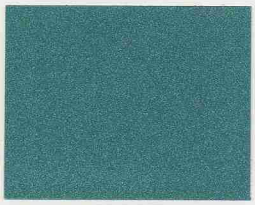
44440
Lt. Aqua Met.



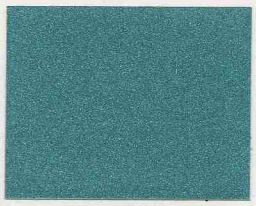
44477
Pacific Blue Met.



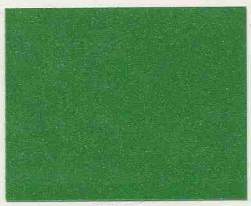
44439
Lt. Turquoise Met.



43867
Turquoise Met.



45024
Sea Sprite Green Met.



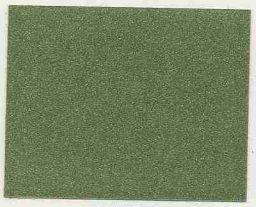
44415
Bright Green Met.



44417
Dark Ivy Met.



44424
Lt. Lime Met.



44421
Med. Lime Met.



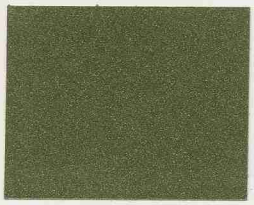
5055
Yellow Green Met.



45803
Med. Green Met.



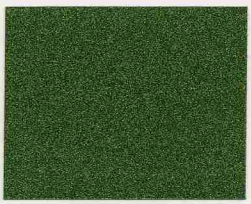
29235
Green Met.



44422
Lt. Olive Met.



44416
Med. Ivy Met.



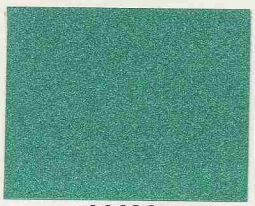
44420
Med. Olive Met.



G8068
Olive Green Met.



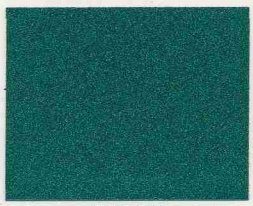
44423
Dk. Olive Met.



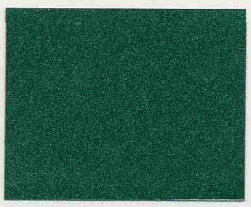
44406
Lt. Green Met.



44407
Med. Green Met.



14283
Jade Green Met.



44414
Med. Jade Met.



44413
Dk. Jade Green Met.



10552
Glade Green Met.



15394
Green Met.



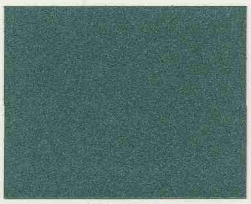
43517
April Green Met.



H8070
Spruce Green Met.



44408
Dk. Green Met.



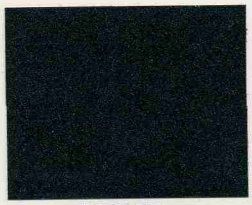
45192
Dk. Green Met.



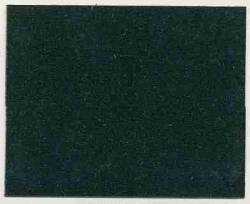
44487
Alpine Green Met.



44412
Midnight Green Met.



H7925
Sherwood Green Met.



C8068
Dark Pine Met.


44484
Lt. Moss Green Met.
44483
Dk. Moss Green Met.
44418
Lt. Frost Green Met.
44419
Dk. Frost Green Met.
7274
Green Met.
5537
Lime Gold Met.
44485
Tropic Green Met.
92654
Pearl Fawn Met.
B8178
Heather Mist Met.
44448
Med. Taupe Met.
G7809
Gold Met.
44411
Green Gold Met.
43820
Spanish Gold Met.
G8065
Gold Met.
14814
Gold Met.
44495
Saturn Gold Met
G8070
Gold Met.
5242
Las Vegas Gold Met.
44453
Sand Met.
44447
Lt. Saddle Met.
N8014
Med. Gold Met.
44469
Med. Gold Met.
44468
Brt. Yellow Gold Met.
44450
Lt. Chestnut Met.
43822
Bronze Met.
H9135
Red Gold Met.
G8066
Brown Met.
5185
Dark Bronze Met.
44454
Dk. Maroon Met.
44475
Deep Maroon Met.
44449
Dk. Chestnut Met.
45785
Desert Gold Met.
44444
Dk. Brown Met.
44445
Lt. Brown Met.
45189
Dk. Carmine Met.

Commercial Wheelchair Lifts

NVL2 Vista Series™



BraunAbility®

Life is a Moving Experience™

NVL2 Vista Series™

- Fully automatic FMVSS 403 compliant lift, operated by an attendant
- Unique stacking platform for increased passenger and driver visibility
- Loading position - either direction
- Interfaces with OEM interlocks
- Long lasting LED lift mounted lights that are active when vehicle interlocks are engaged and lift power switch is on
- Hand-held control box with illuminated functions
- Locking mechanical Inboard Barrier (IB), powder coated yellow for safety and high visibility, prevents operation if occupied
- Pump design prevents platform folding when occupied, quiet operation & low current draw
- Durable redesigned baseplate reduces lift weight and allows for quicker and easier service of hose/wiring
- Easily installed, step-by-step installation instructions, no peripheral hardware required
- Platform movement prevented during unsafe operation
- Gas spring activated outer barrier detects roll stop occupancy as the platform leaves the ground, complete with durable rubber nose guard
- Transition areas marked with durable high-gloss yellow powder coating for safety & visibility
- Side or rear door application
- Dual handrails for security and convenience
- Bridging feature permits the wheelchair user to board the lift from sidewalks or inclines
- Floor to ground travel is 48"
- Lifting capacity is 800 lbs
- Integrated back-up pump
- Equipped with an adjustable anti-rattle feature to avoid unpleasant noise in the vehicle during transit
- Durable high-gloss powder coated finish
- Lift-Tite system stows the lift platform securely while the vehicle is in transit
- Pump module with removable cover offers easy access to all components
- Optional handrail belt

MADE IN USA



Integrated dual handrails provide added security for wheelchair users and standees





Visual and audible warnings alert both passengers and attendants to unsafe conditions

Gas spring activated outer barrier detects roll stop occupancy as the platform leaves the ground



BraunAbility
Life is a Moving Experience™

631 West 11th Street • Winamac, IN 46996
(574) 946-6153 • 1-800-THE-LIFT
www.braunability.com/commercial

All illustrations, descriptions and specifications in this brochure are based on the latest product information at the time of publication. BraunAbility reserves the right to make changes at any time without notice. © 2014 The Braun Corporation 34328

AL700 TITAN SERIES SYSTEMS

With its distinctive blue webbing and highly-visible, yellow “locked” indicator tag, the AL700 Titan Retractor Series lets operators know when the retractor is in locked mode. This auto-tension, auto-lock wheelchair securement system allows operators to quickly secure a wheelchair in seconds — with only one hand. The Titan Retractor System has a low-profile bracket and a sleeker, cleaner retractor case with a stud fitting to attach the occupant restraint system.



ACCESSORIES

AL701061

Series L Connector Assembly Kit

This kit converts AL700 Titan Series and FF600 Series wheelchair tie-down retractor assemblies to a Series L Track application.



AL701052 - 14

Series A Connector Assembly Kit

This kit converts AL700 Titan Series and FF600 Series wheelchair tie-down retractor assemblies to a Series A Track application.



Q8-7580SL

SNC Cleat Connector Assembly Kit

This kit converts AL700 Titan Series and FF600 Series wheelchair tie-down retractor assemblies to a SNC Cleat fitting application.



STANDARDS COMPLIANCE

AL700 Titan Series Systems when properly used with a complete Sure-Lok System, comprised of wheelchair tie-down, a complete occupant restraint system (including lap and shoulder belt), track and anchorages are designed to meet the following requirements where applicable:

- 30mph/20g Impact Test Criteria per SAE J2249
- 30mph/20g Impact Test Criteria per National Standards for School Buses
- 30mph/20g Impact Test Criteria per Canadian Z605 Standard
- 30mph/20g Impact Test Criteria per ISO 10542 Standard
- 49 CFR Part 38 Americans with Disabilities Act (ADA)
- 49 CFR Part 571.222 (FMVSS 222) School Bus Passenger Seating and Crash Protection
- FMVSS 302 Flammability Test
- Certificates of Conformance available upon request.



WARNING

Always secure the occupant in the vehicle with a complete Sure-Lok Occupant Restraint System, consisting of lap and shoulder belts. Secure the wheelchair in the vehicle with a Sure-Lok Wheelchair Tie-Down System.

1. The AL700 Titan Series retractors have distinctive blue webbing and a highly-visible, yellow “locked” indicator tag, letting operators know when the retractor is in locked mode.

2. S-hook configuration makes it easy for operators to quickly secure a wheelchair in seconds — with only one hand — and keeps webbing flat and untwisted when properly attached to the wheelchair.

3. The low-profile bracket on the AL700 Titan Series retractor is close to the ground and the chrome-plated case provides a cleaner, sleeker appearance.

4. Titan’s low-profile design minimizes interference with most wheelchairs. With the auto-tensioning feature, webbing automatically retracts into the housing and stays off the floor — keeping it cleaner and longer lasting.

5. The stud fitting, located at the top of the retractor case, provides an easy attachment point for integrated occupant restraint systems.

AL700 TITAN SERIES SYSTEMS

Determine which Titan Retractor System is right for you. Select the Floor Anchor type you have or want installed. Then just order the corresponding kit part number. It's that easy. Retractor assembly part numbers are listed in the chart below and retractor kit part numbers are in the charts on the opposite page. For more information on occupant restraints, refer to pages 20-25.



EXAMPLE OF KIT AL712S-4C

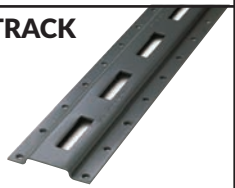


L TRACK	A TRACK	SNC	
AL700855S	AL700857S	AL700944S-SNC	**RIGHT HAND RETRACTOR S-HOOK (pictured)**
AL700907S	AL700925S	AL700945S-SNC	**LEFT HAND RETRACTOR S-HOOK**
			



SNC FLOOR ANCHOR
Q8-7580-A

TITAN RETRACTOR KITS **WITH OCCUPANT RESTRAINTS**

FLOOR ANCHOR TYPE	ATTACHMENT STYLE	KIT PN	PN IN KIT	QTY	OCCUPANT RESTRAINT
L TRACK 	S-HOOK	AL712S-4C	AL700855S AL700907S AL700727HA	2 2 1	 AL700727HA
A TRACK 	S-HOOK	AL715S-4C	AL700857S AL700925S AL700727HA	2 2 1	
SNC 	S-HOOK	AL760S-4C-SNC	AL700944S-SNC AL700945S-SNC AL700727HA Q8-7580-A	2 2 1 4	
L TRACK 	S-HOOK	AL712S-4C-7	AL700855S AL700907S AL700868-4	2 2 1	 AL700868-4

TITAN RETRACTOR KITS **WITHOUT OCCUPANT RESTRAINTS**

FLOOR ANCHOR TYPE	ATTACHMENT STYLE	KIT PN	PN IN KIT	QTY	OCCUPANT RESTRAINT
L TRACK	S-HOOK	AL727S-4C	AL700855S AL700907S	2 2	For available Occupant Restraints, refer to pages 20-25.
A TRACK	S-HOOK	AL728S-4C	AL700857S AL700925S	2 2	**WARNING** Always secure the occupant in the vehicle with a complete Sure-Lok Occupant Restraint System, consisting of lap and shoulder belts. Secure the wheelchair in the vehicle with a Sure-Lok Wheelchair Tie-Down System.
SNC	S-HOOK	AL761S-4C-SNC	AL700944S-SNC AL700945S-SNC Q8-7580-A	2 2 4	

FlexTech

INTERMOTIVE VEHICLE CONTROLS

An ISO 9001:2015 Registered Company

FlexTech™

Programmable Electrical System

Overview

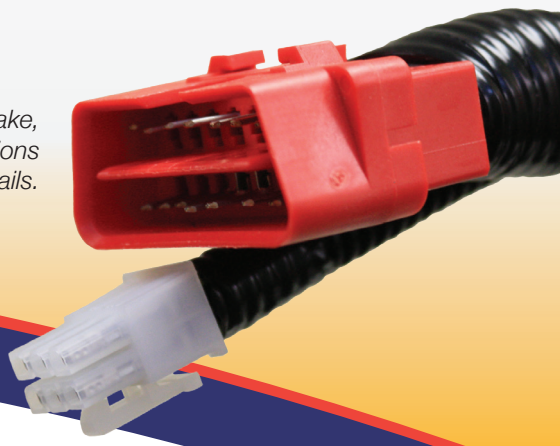
- Foundation of the system is a Programmable Relay Power Center
- Can add optional modules to create an entire custom control system
- Connects electronic modules through the overall vehicle network, reducing the need for wiring
- Uses real-time chassis data to control loads
- Simple plug and play connections to the OEM chassis

Features

- Centralizes and improves diagnostic capabilities; eliminates the need for timers, flashers, latching relays and multi-relay logic
- Access to InterMotive's graphical interface allows for customization of the entire system
- Communicates with Ford and Chevy CAN as well as J1939
- Warning LEDs for easy troubleshooting

Watch FlexTech in action

Product features may vary by make, model or year. See instructions for complete details.



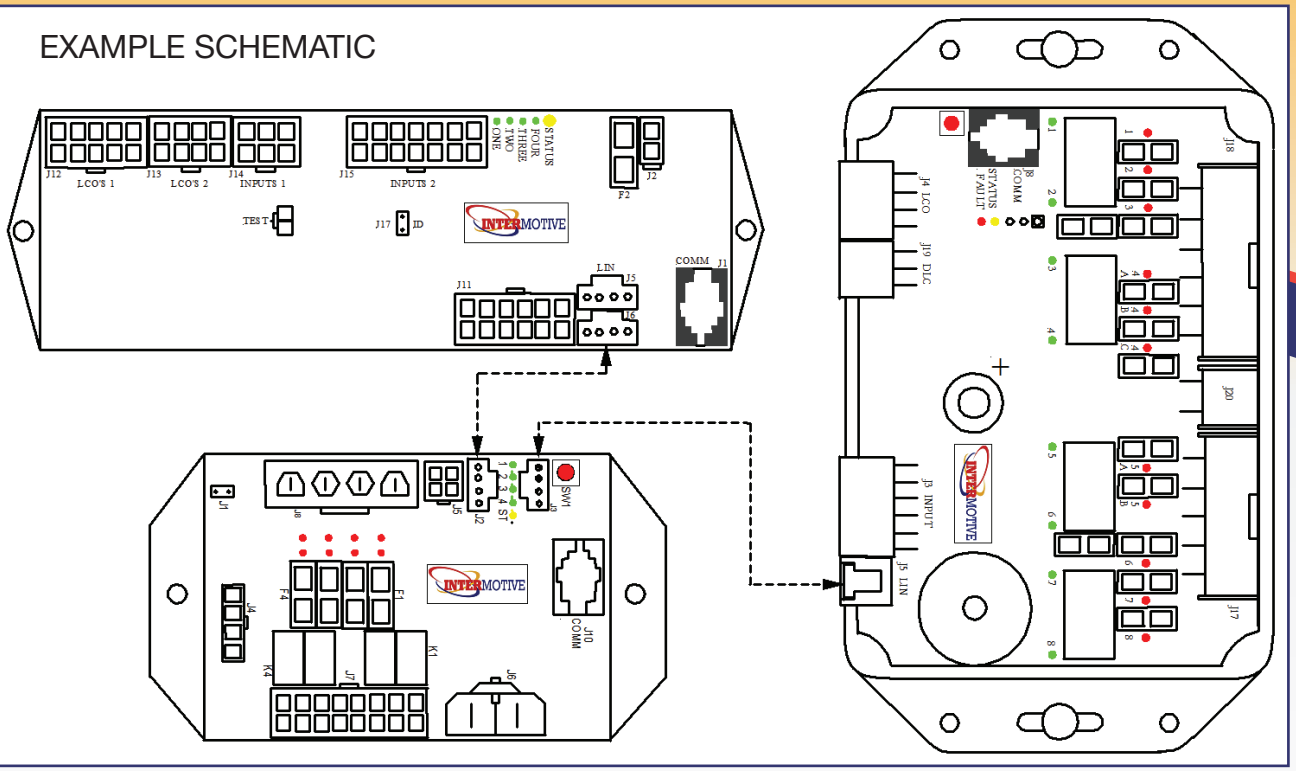
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(775) 831-2002

Details

EXAMPLE SCHEMATIC



COMPONENTS

Programmable Relay Power Board (PRPC)

- Eight programmable relay power outputs
- Ten separate digital inputs
- Eight programmable low-current outputs: Seven sourcing (0.5 A), one sinking (0.5 A)
- Outputs can be configured as momentary, latching, flashing or timed
- Easy diagnostics with LED indicators
- Programmable audible patterns for multiple uses

Expansion Board (Optional)

- Four 10 A relay fused outputs
- Four 1 A low-current outputs
- Four active low outputs
- Loads controlled by the PRPC

Switch Backer Board (Optional)

- Controls system inputs and outputs
- Eight switches and eight light outputs
- Two switch backer boards can be used together
- Six outputs: Two 1 A and four 0.5 A
- Compatible with any brand of switches

Other Module Options

- Gateway: Compliant FMVVS 403/404 wheelchair interlock and high idle system
- Advanced Fast Idle System (AFIS): Adjustable system with battery charge protection and optional air conditioning auto trigger
- BrakeMax: Tow haul mode for reduced brake wear

REV_AC
U.S. Patent #9,469,261

FEATHER WEIGHT

MID-HI SEAT "ROCK SOLID"





Sustainable Seating Solutions

Freedman Seating Company's Feather Weight seats are designed to be like feathers on a bird: light and airy to satisfy weight restrictions and ensure a smooth ride, yet durable for years of service and low maintenance.

Freedman Seating Feather Weight seats are the most severely tested in the company's history, and meet all applicable federal motor vehicle safety standards for strength andsafety (including 210 for seat belts). Less weight means one thing to bus builders and operators: they can get more passengers per bus.

And when we say more passengers, ***we mean more happy passengers.***

Not Just Seats



Seating Solutions™

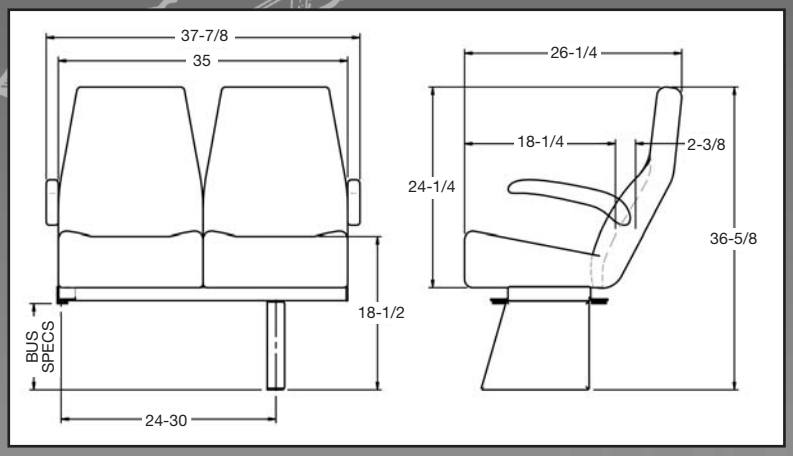
THE FEATHER WEIGHT SERIES BY

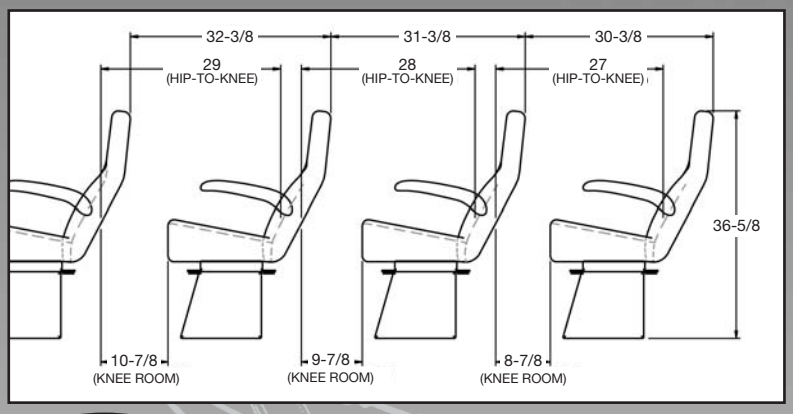
FREEDMAN
SEATING COMPANY

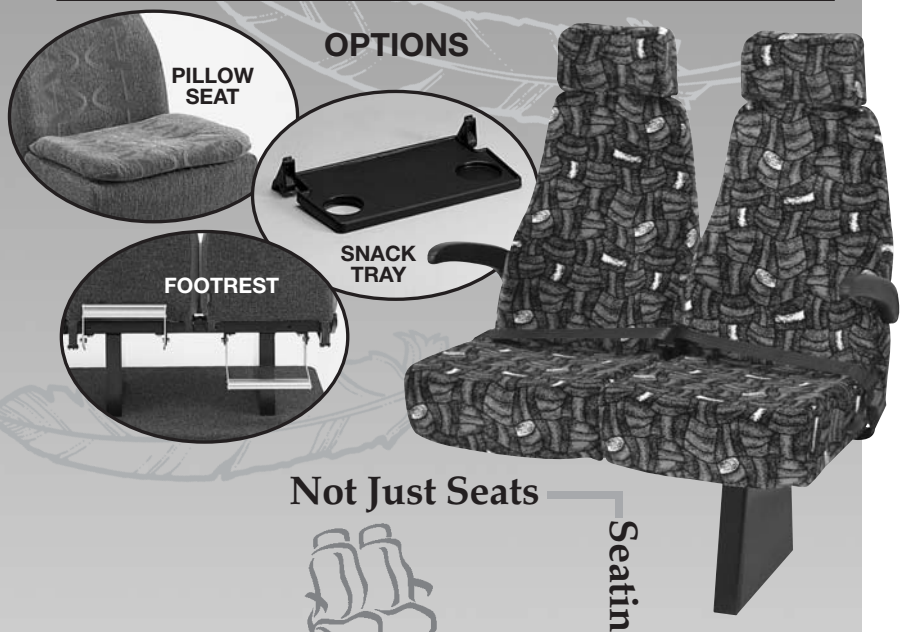
an ISO 9001:2000 certified company

FEATHER WEIGHT

MID-HI SEAT "ROCK SOLID"







Not Just Seats

Seating Solutions™

FREEDMAN SEATING COMPANY

an ISO 9001:2000 certified company

4545 W. Augusta Blvd., Chicago, IL 60651
(773)524-2440 (800)443-4540 Fax (773)252-7450
e-mail: sales@freedmanseat.com
WWW.FREEDMANSEATING.COM

Sustainable Seating Solutions

Whether your bus is for tour/charter, para-transit, or shuttle, Feather Weight Mid-Hi works for you. Optional adjustable headrests and reclining back-rests give you luxuries for long journeys, while grab rails and ABS plastic backs provide the function and safety required for shorter trips. The ultra-thin backrest gives outstanding support and creates more hip-to-knee room than any other seat in its class. The steel frame system meets or exceeds all applicable government standards for safety and durability. And, it's light as a feather!

Feather Weight Mid-Hi features include:

- An ultra-thin *Knee-Saver* type backrest for added hip-to-knee room and lumbar support
- Molded polyurethane seat and back cushions for comfort and long lasting support
- 17½" wide seat cushions
- 22½" back height off the seat cushion, 37" off the floor
- Wire mesh-grid seat springs for even support
- FMVSS 210 compliance–all *Feather Weight* seats are seat belt ready
- Transit style–rigid backrests (starting weight without options–43 lbs.)
- Touring style–reclining backrests (starting weight without options–47 lbs.)
- Covers that can be removed and replaced easily and without the use of special tools

Feather Weight Mid-Hi options include:

- Black molded *U.S. Arms* or upholstered flip-up armrests
- Adjustable headrests
- Black or yellow corner AV grab rails
- Black or yellow top AV grab rails
- ABS plastic backs
- Mesh map pockets
- Vertical stitching
- FTA foam
- Snack trays
- Aluminum folding footrests
- Pillow seat cushions
- Rear row quick disconnect
- Side sliders
- 16", 18" or 19" wide seats available
- Rigid or reclining backrests
- Seat belts
  - Non-retracting seat belts
  - Retracting seat belts
  - USR (Under Seat Retractors)
- S3 Bio-Cushions (Made with vegetable oil)
- A wide variety of cloths and vinyls
- S3 cloths (Made with recycled yarn)

We are constantly updating and improving our seats; therefore we reserve the right to change or modify specifications or materials without notice. All Freedman Seating Company seats meet or exceed FMVS standards.

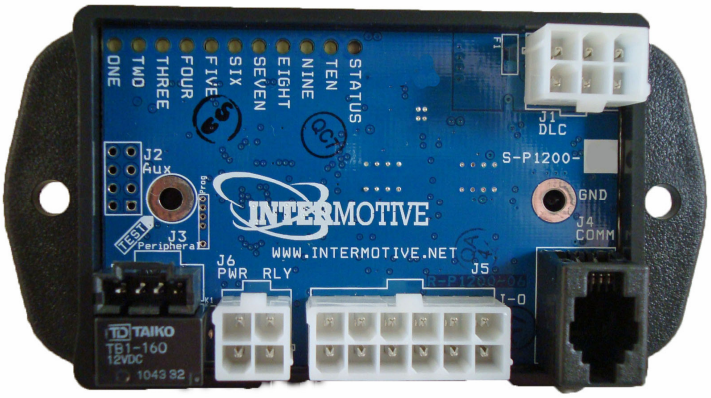
ISO 9001:2000 registered

GATEWAY^{AI}

High Idle & Lift Interlock
With Programmable Load Control

FEATURES & BENEFITS

- Fully compliant FMVSS 403/404 wheel-chair lift interlock
- Dynamic Load Response (DLR) technology– monitors engine RPM & maintains speed at all load conditions
- Charge protect on gas & diesel engines
- Automatic engagement when on A/C command is detected
- *Heater Boost* for improved cabin heat on diesel engines
- Dash-mounted control panel has LEDs to display electrical system, Automatic Fast Idle (AFIS) & Intelligent Lift Interlock System (ILIS) status
- Simple, single-point "Plug & Play" connection.. Super fast installation & No cutting of factory wires
- Solid state microprocessor controller.. No additional solenoids, cables, or brackets
- Capable of providing "Real-Time" chassis data via the CAN Bus
- Diagnostic trouble codes can be retrieved for "hard" faults & intermittent faults in non-volatile memory
- Intermittent Fault Filter (IFF)® technology filters out all erroneous changes in sensor signals
- Multiple & configurable chassis electrical load inputs/outputs



Gateway^{AI} Module

WHY GATEWAY^{AI}?

- Gateway^{AI} is a fully Compliant FMVSS 403/404 wheelchair interlock & fast idle system all in one, easy to install module!
- Fast Idle– monitors OEM sensor inputs from transmission, engine, charging system, air conditioner, ambient air temperature, & vehicle speed to determine if high idle is needed. Automatically maintained when loads are added or removed such as A/C or wheelchair lift.
- Lift Interlock– Controls shift interlock by processing signals from transmission, parking brake and lift door to electronically lock down the vehicles ability to move in unsafe conditions

INTERMOTIVE VEHICLE CONTROLS
An ISO 9001:2008 Registered Manufacturer
www.InterMotive.net 800-969-6080

NFPA MEMBER MEMBER VERIFICATION PROGRAM MVP NTEA The Association for The Work Truck Industry VERIFIED MEMBER

Rev. A

Made in the U.S.A.

GATEWAY^{AI}

Gateway^{AI} Options

THE GATEWAY^{AI} PRODUCT FAMILY

- Gateway with BrakeMax Controller
  - All of the features of the Gateway/ ILIS plus a controller for Ford & GM vehicles with Tow/ Haul mode. This controller engages the Tow/Haul mode on start-up of the vehicle thereby providing the fleet with maximum "Tow/ Haul" mode benefits without having the driver think about it.
- Gateway with DuraTrans
  - All of the features of the Gateway/ ILIS plus a controller for Ford & GM vehicles with an Overdrive button. Overdrive is disabled until the vehicle speed reaches 55 MPH. Overdrive will not be disabled until the vehicle speed drops below 30MPH
- Gateway with Merlin
  - All of the features of Gateway/ILIS plus the ability of the Merlin Multiplex System to use real-time chassis data to operate coach loads
- Azure Option
  - ILIS interlock functions for use on an Azure hybrid electric vehicle



Standard Gateway^{AI} LED Panel

Starcraft uses the panel below as standard



Standard Gateway^{AI} Door Ajar LED Panel



Interlock Only LED Panel



Interlock Only Door Ajar LED Panel

SPECIFICATIONS

Physical Specifications:

Dimensions:	2.0"W x 4.0"L x 0.9"H
Weight:	.14 lbs
Operating Temperature:	40ºC to 85ºC

Electrical Specifications

Power Input:	+8 to 16 Vdc @ 1 amps for module control +8 to 16 Vdc @ 8 amps for lift enable
Lift Enable:	+12v @ 8 amps
Programmable Outputs:	Ground @ 0.5 amps each

US Patent No's. 6,594,565 / 6,965,819 / 7,274,980

TARABUS NT Specification Sheet

Product description and composition:
• The flooring shall be specially designed for buses.
• The flooring shall be flexible PVC flooring in 2.25 mm thickness, composed of a compact plasticized wear layer.
• The wear layer shall contain inlaid silicon carbide particles to improve slip resistance.
• The wear layer shall not contain aluminium oxide particles or quartz granules to prevent from maintenance and cleaning issues.
• The wear layer shall not contain fillers (fillers<5phr).
• The design shall be inlaid through the whole thickness of the wear layer.
• The intermediate layer of the flooring shall be made of a glass fibre grid, providing outstanding dimensional stability: ≤ 0.2% according to EN 434.
• The flooring shall have a special textile backing designed for public transport vehicles, to enable bonding with acrylic glues onto plywood substrates or plywood with phenolic film substrates or aluminium.
• The flooring shall not crack and no white line shall appear when bended by 180 degrees.
• The welding rods shall be manufactured by the flooring manufacturer to enable a perfect weld.

Environment:
• The flooring shall be free from heavy metals (Lead, Cadmium, Barium, Tin, Chromium…).
• The flooring shall be free from DEHP plasticizer.
• The manufacturer of the floor covering must be in possession of a valid ISO 14001 certificate.

Technical characteristics:
• Fire class: the flooring material shall conform to the European Directive 95/28/EC
• Fire class: the flooring material shall conform to the FMVSS/CMVSS 302
• Fire class: the flooring shall have been tested to UTAC ST 18502/1 (Type A) and ISO 3795/76 (0mm/mn)
• Fire class: the flooring shall obtain CRF>0.50 W/cm2 when tested according to NFPA 253 – ASTM E648
• The manufacturer of the floor covering must be in possession of a valid quality systems certificate, showing compliance with ISO 9001.

Installation:
• All joints must be welded using a hot welding gun and PVC welding rods. To ensure the right watertightness of the flooring system, no sealant shall be used between 2 flooring sheets.

GERFLOR Transport Flooring - June 2009

HARBOR FOAM inc.
manufacturers of eps foam

HARBOR FOAM INC.
2950 Prairie SW Suite 300
Grandville, MI 49418
p. (616) 855-8150
f. (616) 855-8149

Expanded Polystyrene Information

Protective Packaging and Cushioning Solutions
EIFS Special Shapes and Wall Insulation
Below Grade Geo-technical Applications
Concrete Void Filler Applications
Foundation Insulation
Industrial Pattern "Lost Foam" Applications
Flotation Foam
Foam Cores for SIPS and Sunroom Panels



Expanded Polystyrene is a "closed cell" cellular plastic insulation product

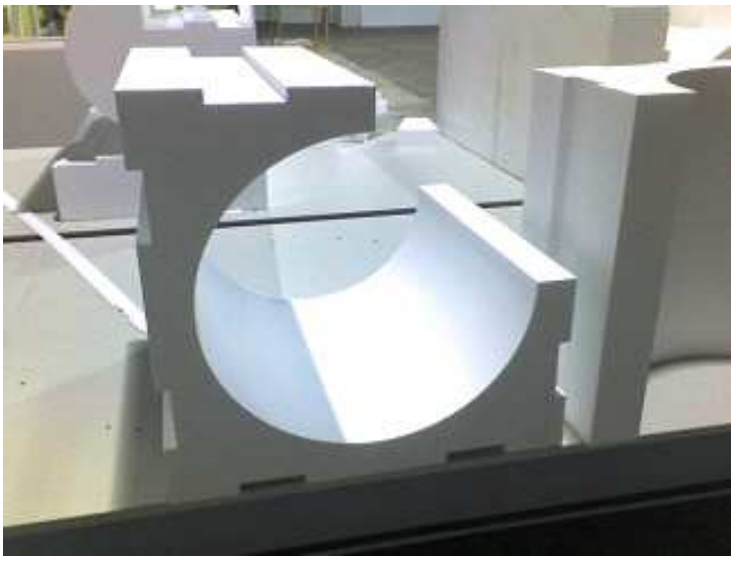
Harbor Foam EPS Roof Insulation is a cost effective and energy efficient Insulation for use in all aspects of construction from the roof deck to the foundation floor.
Harbor Foam EPS can be supplied in a wide range of densities to satisfy any physical or structural requirements necessary. Custom cut sizes along with unparalleled CNC capabilities are sure to satisfy any and all special and/or unique conditions.
Harbor Foam EPS meets or exceeds the requirements of ASTM C578, "Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation."

R-value

The R-value of **Harbor Foam EPS** remains constant and does not suffer from R-value loss. The closed cell structure of **Harbor Foam EPS** contains air and not blowing agents which deplete over time.
Some foam plastic insulation materials use blowing agents that have a high resistance to heat flow. Over time these blowing agents diffuse out of the insulation board causing loss of the abnormally high R-Value at the time of manufacture. EPS foam does not use these types of blowing agents, therefore, its insulation performance remains stable over its entire life.

Strength and Thermal Performance:

Cost effective thermal design is among the highest priorities in construction. **Harbor Foam EPS** insulation products are available in a wide range of density types necessary to provide both thermal resistance (R-value), structural integrity, and cost effectiveness.



State of the art CNC capabilities

Harbor Foam Standard Physical Properties ASTM C-578

Properties	Units	ASTM Test	Type XI	Type I	Type VIII	Type II	Type IX	Type XIV	NA
ASTM Density	pcf (min.)	C303 or D1622	0.70	0.90	1.15	1.35	1.80	2.40	2.85
Common Designation	pcf (nom.)		0.70	1.00	1.25	1.50	2.00	2.40	3.00
Thermal Resistance	R-Value at 75°	C177 or C518	3.10	3.60	3.80	4.00	4.20	4.20	4.20
	R-Value at 40°	C177 or C518	3.30	4.00	4.20	4.40	4.60	4.60	4.60
	R-Value at 25°	C177 or C518	3.45	4.20	4.40	4.60	4.80	4.80	4.80
Compressive 10% Deformation	psi	D1621	5.00	10.00	13.00	15.00	25.00	40.00	50.00
Flexural Strength	psi	C203	10.00	25.00	30.00	35.00	50.00	60.00	75.00

Exposure to Water and Water Vapor:
The mechanical properties of **Harbor Foam EPS** are unaffected by moisture. A study by the Energy Materials Testing Laboratory (EMTL) has shown that EPS insulation installed in well-constructed roofs does not absorb appreciable moisture, even under conditions characteristic of prolonged cold, damp winters. The small amount of moisture absorbed (an average of 0.2% by weight) has little or no effect on the compressive or flexural strength, and the EPS insulation retains between 95% and 97% of its thermal efficiency. Though it has low water vapor transmission, EPS is not a vapor barrier. Rather it "breathes", and therefore needs no costly venting as do some other relatively impermeable insulation materials which could otherwise trap moisture within walls and roof assemblies.

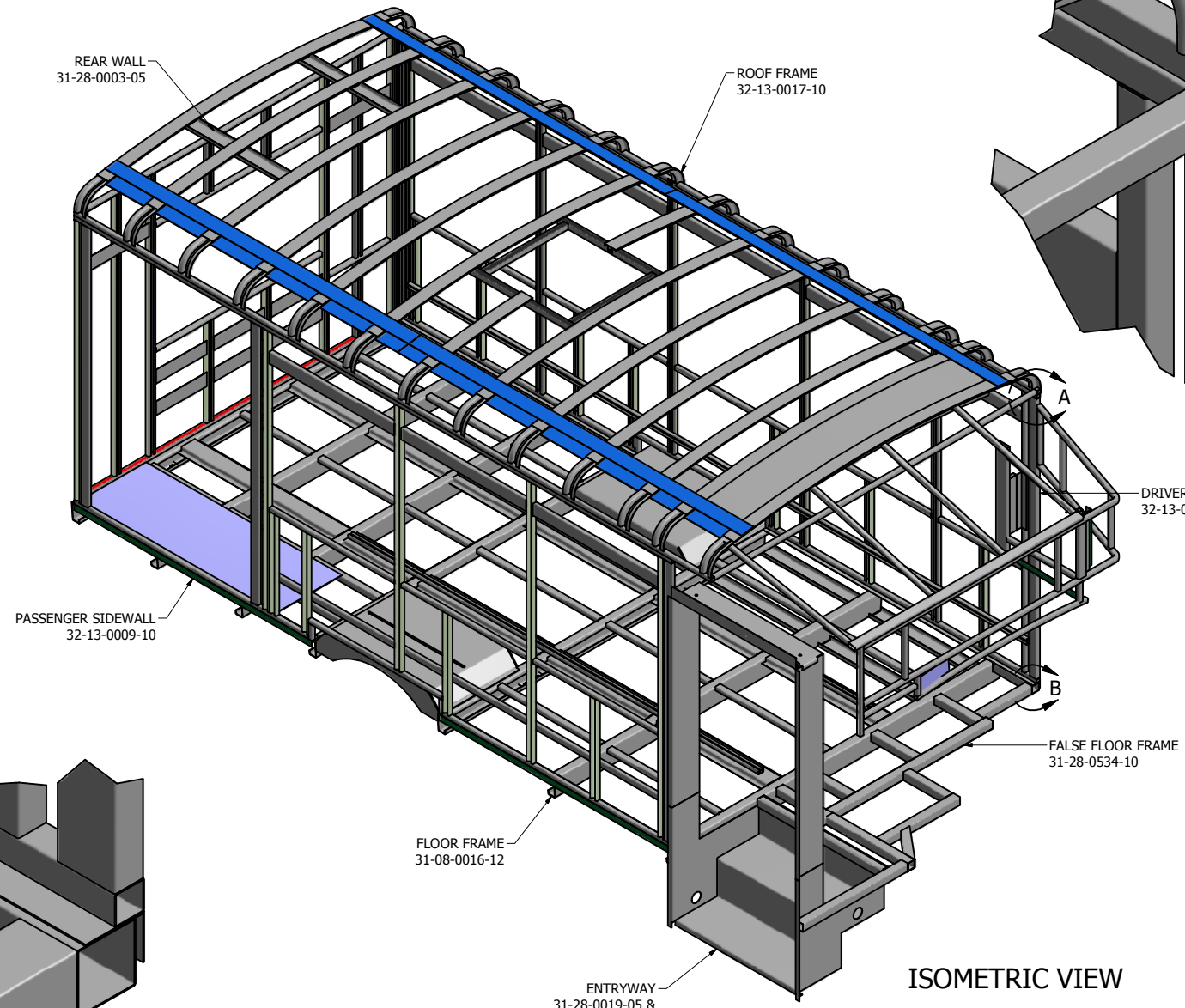
Temperature Exposure/Flame Retardants:
Harbor Foam EPS is able to withstand the rigors of temperature cycling, assuring long-term performance. Although flame retardants used in the manufacture of EPS provide an important margin of safety, all EPS products must be considered combustible and should not be exposed to flame or other ignition sources. The maximum recommended long-term exposure temperature for **Harbor Foam EPS** is 165°F (75C). In roof construction requiring hot asphalt, temperatures should not exceed 250° F at the time of direct contact with EPS insulation.
The heat of combustion of expanded polystyrene is 17,400 BTU per pound. Combustion products are carbon monoxide, carbon dioxide, water and soot (carbon).

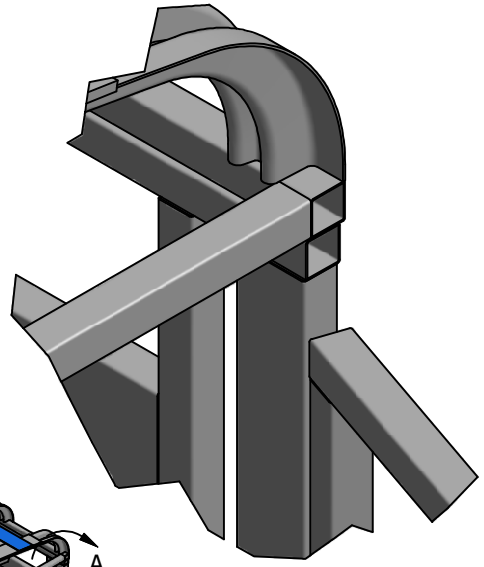
Insect Infestation:
Since Harbor Foam EPS has no food value, it will not attract ants, termites or rodents. However, it is not a barrier to them. Ants, termites and rodents will chew through foamed polystyrene to reach food or to establish a comfortable nesting area. Standard measures used to protect the structure will also protect the EPS insulation.

Fungi and Bacteria:
Expanded polystyrene has been tested for fungus and bacteria attack in accordance with FHA test procedures and no evidence of either has been observed.

Solvent Attack:
Expanded Polystyrene insulation is subject to solvent attack by petroleum-based solvents which are found in many construction materials. Please be aware of the chemical make-up of all products used in conjunction with EPS Insulation.

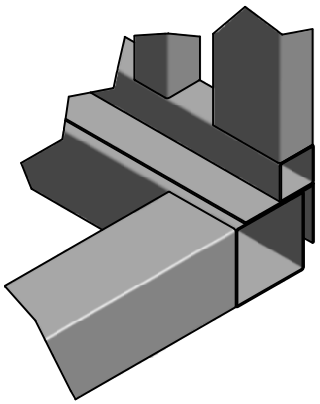
Environmentally Friendly:
Neither **Harbor Foam Insulation**, nor its manufacturing process emits CFC's or HCHC's into the atmosphere. EPS insulation is being recycled throughout the country and **Harbor Foam** readily accepts post-consumer polystyrene for recycle.
The use of **Harbor Foam EPS** can be used to satisfy insulation requirements as part of energy efficiency guidelines set for compliance with Energy Star and LEED building requirements.





DETAIL A
SCALE 1 / 2

ISOMETRIC VIEW



DETAIL B
SCALE 1 / 2

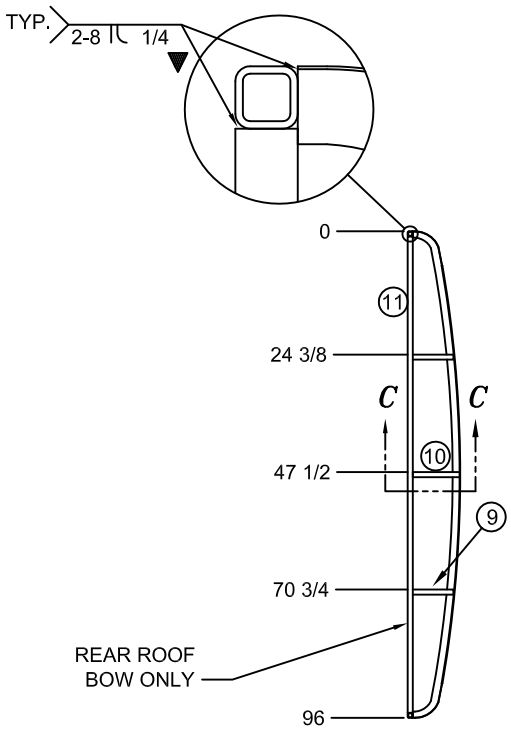
REVISION HISTORY				
ZONE	REV		DATE	APPROVED

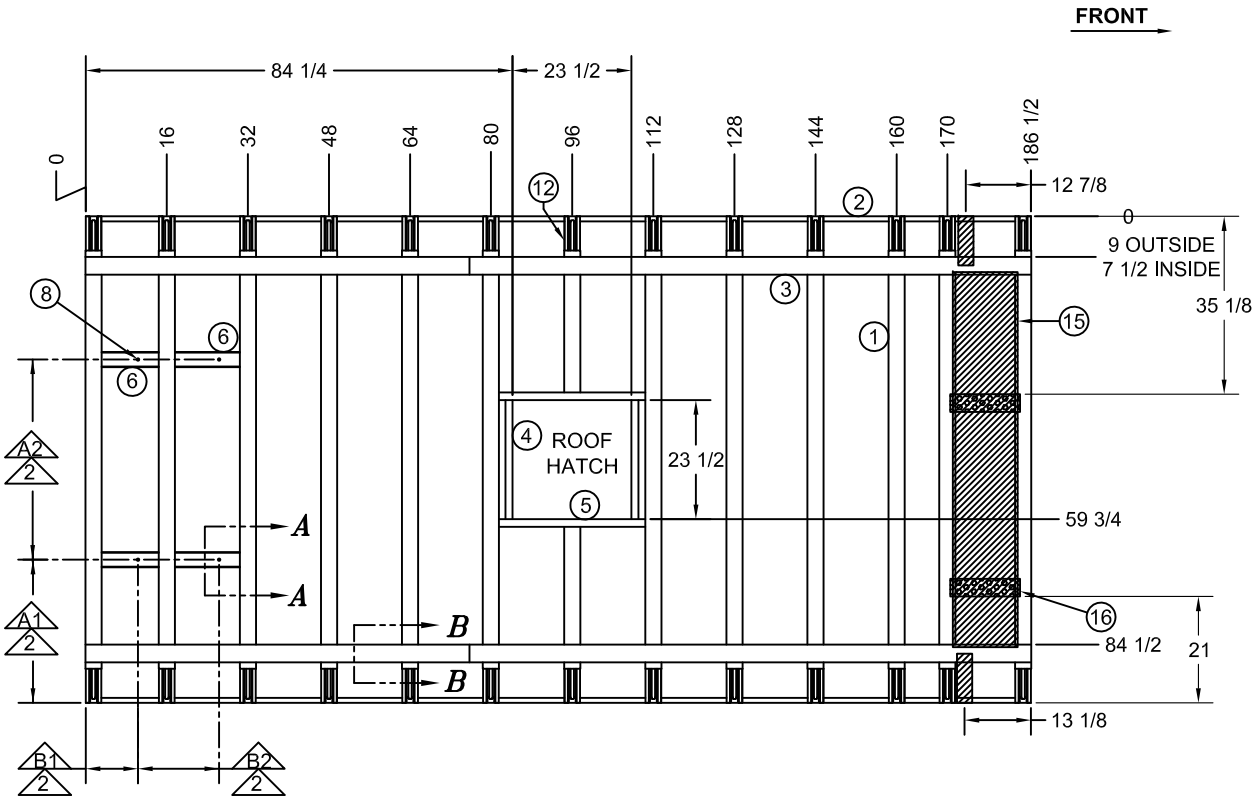
STARTRANS

DFTSN:	TAS	TITLE	Ford Senator 2 - 158 WB - 175 BOX CAGE W/C REAR LIFT, CUT N BUTT STYLE FLOOR
DATE:	12/5/14	DWG NO	40016-2
		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 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 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.

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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

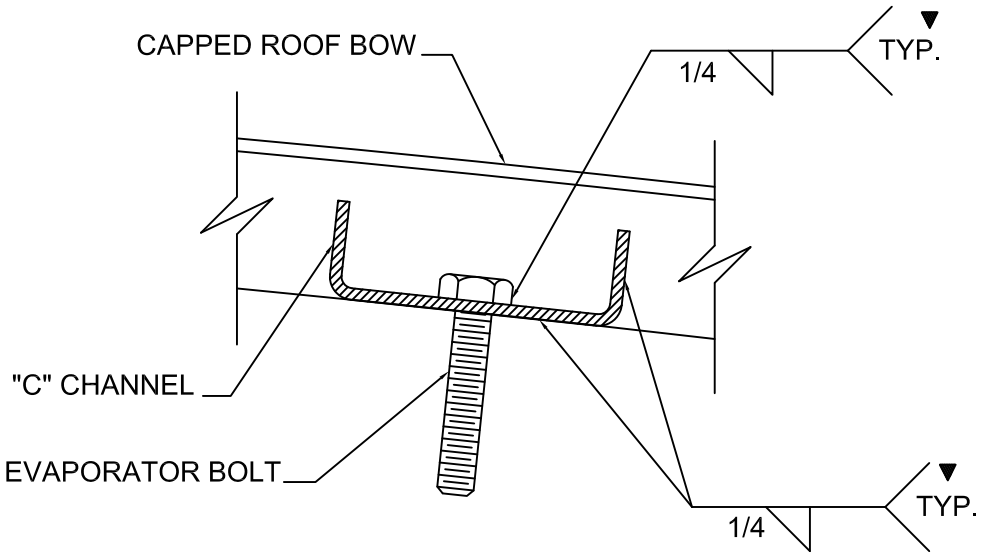
STARTRANS

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

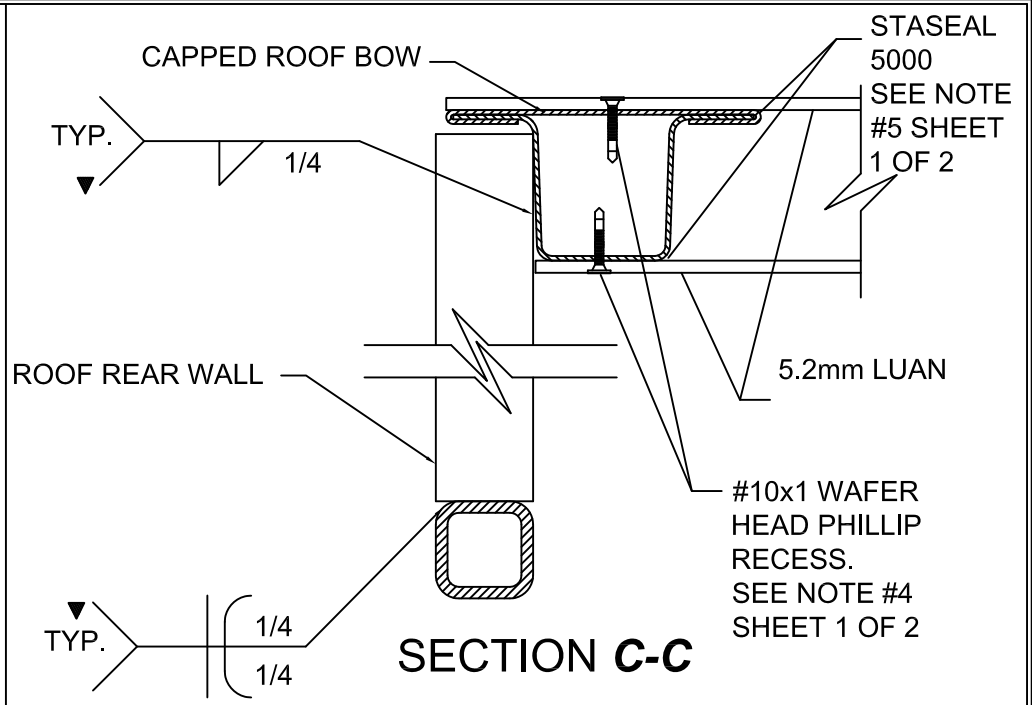
TITLE: Frame, Roof Ford & Chevy
SENATOR 2

DWG. No. 32-13-0017-10
SCALE
DISK No.
SHEET 1 OF 2

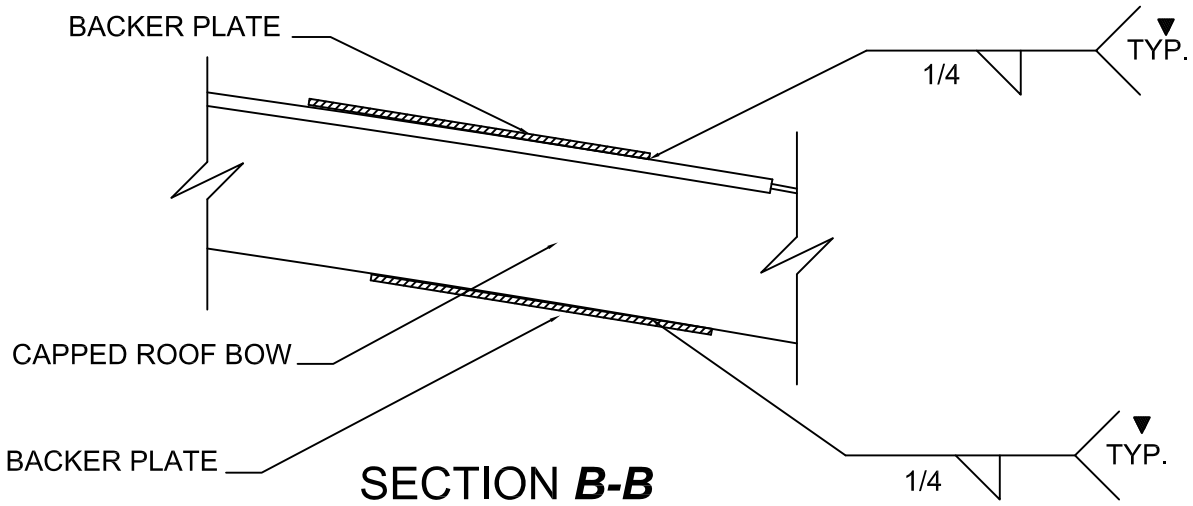
▼ CRITICAL CONTROL ITEM



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

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

STARTRANS

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

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

TITLE **Frame, Details Roof, 2011**
SENATOR 2

SCALE

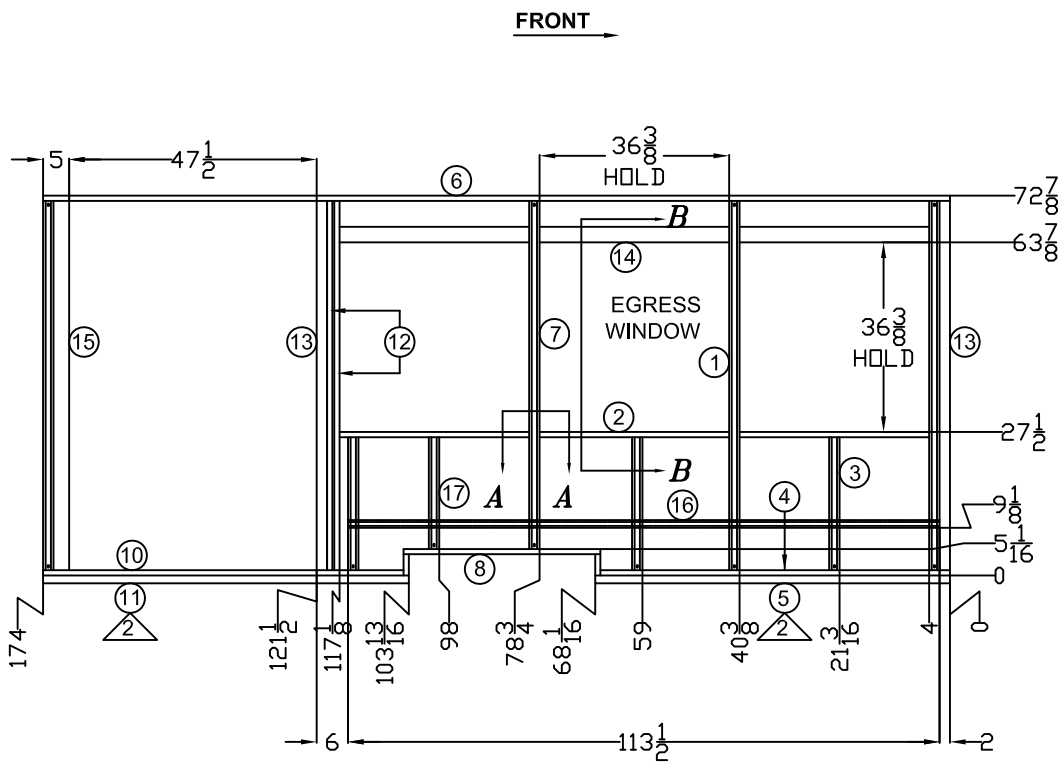
DWG. No. 32-13-0017-10

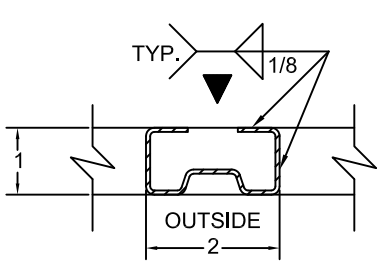
DISK No.

SHEET 2 OF 2

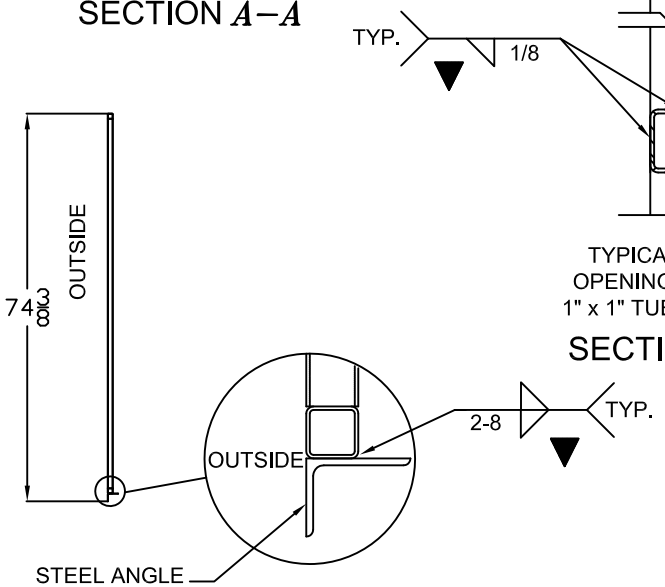
▼ CRITICAL CONTROL ITEM

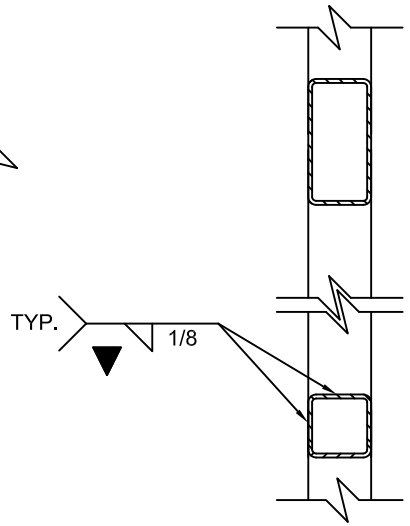
USAGE: FORD 158"WB/MODEL 24





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
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: 16ga. x 1" x 3" x 70-7/8"Lg. A-513
14	3		TUBE: 16ga. 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

STARTRANS

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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: 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

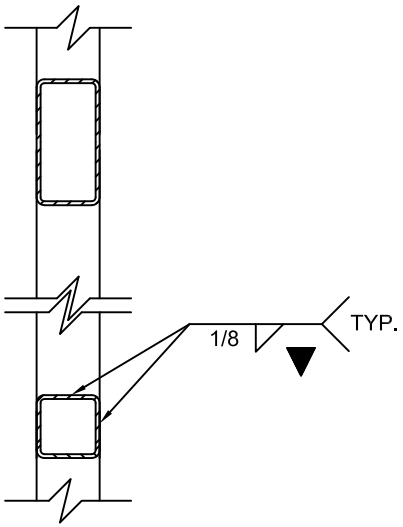
▼ CRITICAL CONTROL ITEM

USAGE: FORD 158"WB/MODEL 24

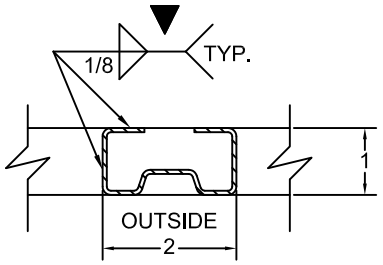
NOTES:

1- DRAWING VIEWED FROM EXTERIOR SIDE OF UNIT.

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

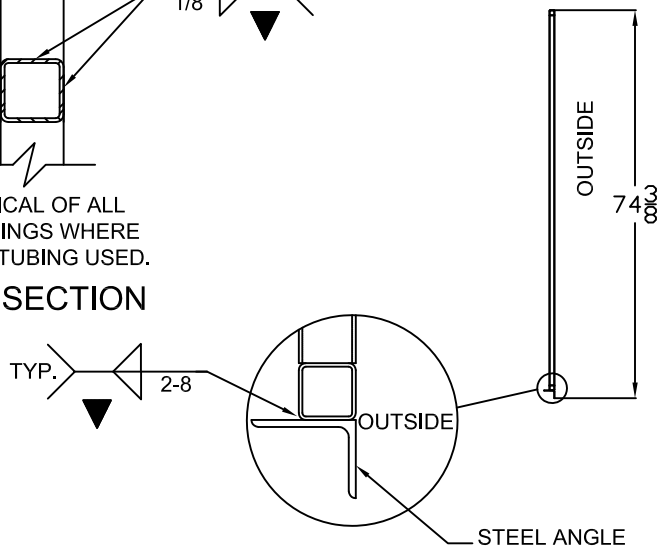


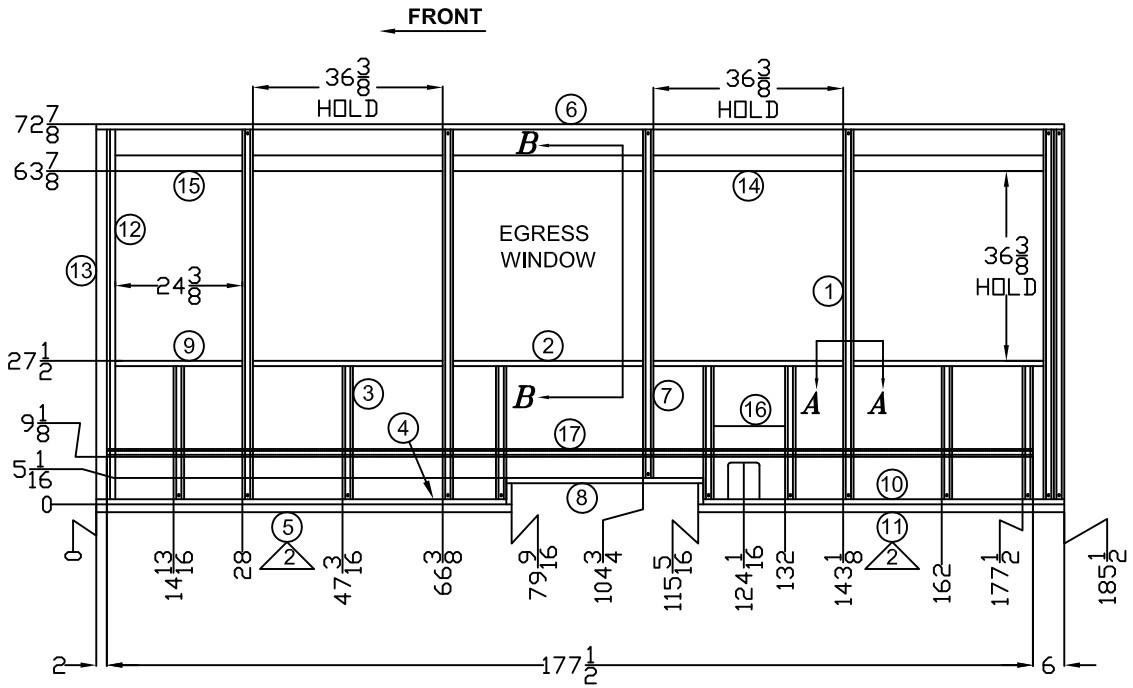
TYPICAL OF ALL OPENINGS WHERE 1" x 1" TUBING USED.



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 66-13/16"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

STARTRANS

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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: MKLINE
CHKR:
APRVD:

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

DWG. No. 32-13-0001-10

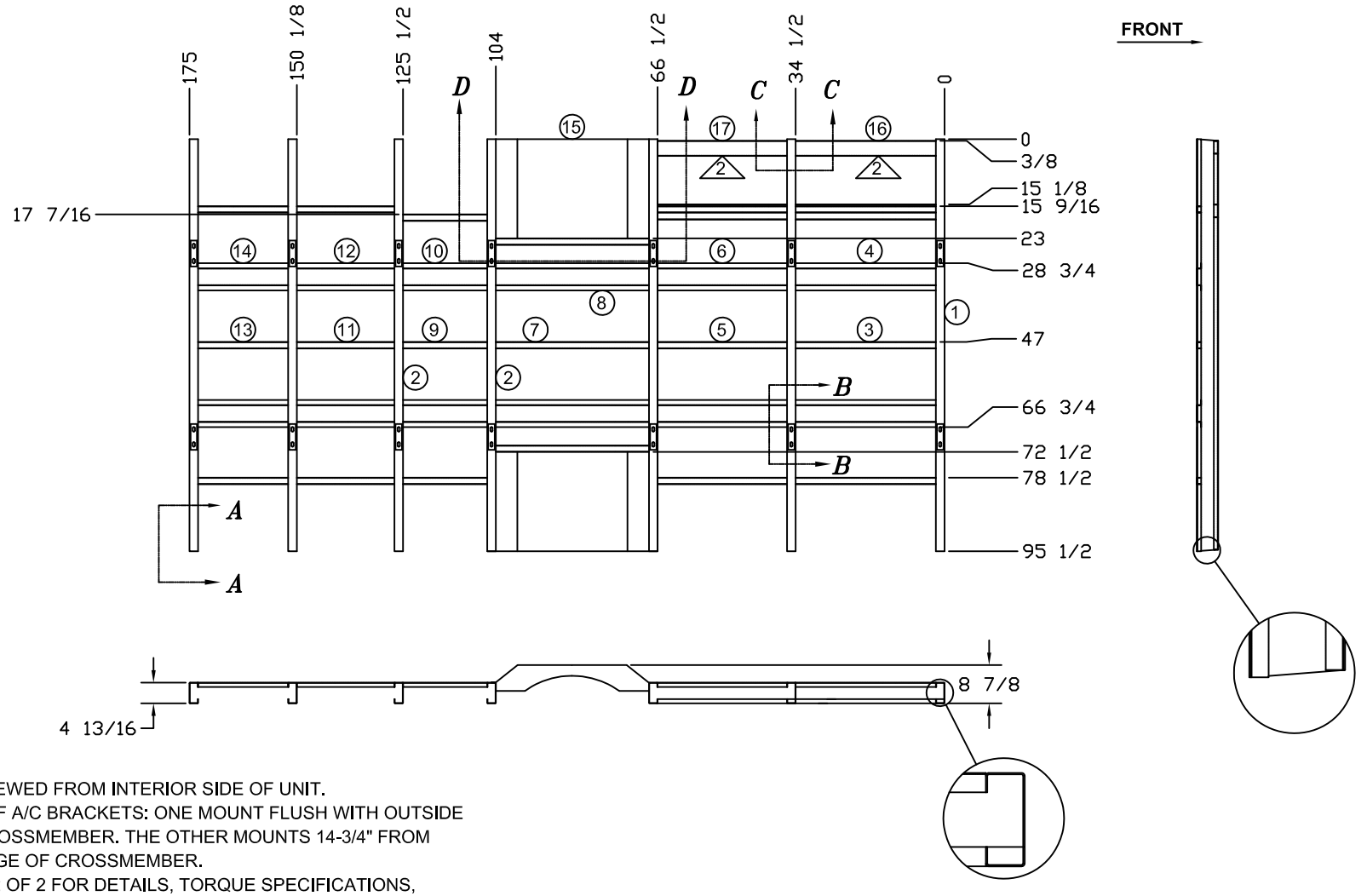
SCALE

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 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.

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

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

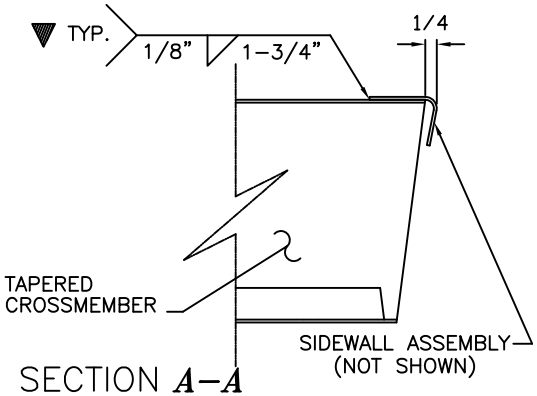
STARTRANS

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

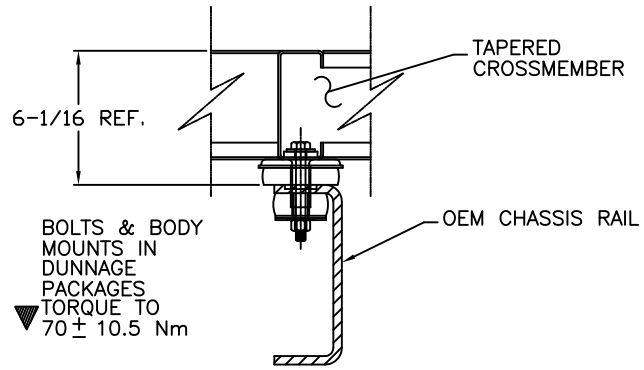
DATE: 08/02/12 | SCALE: | SHEET 1 OF 2

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

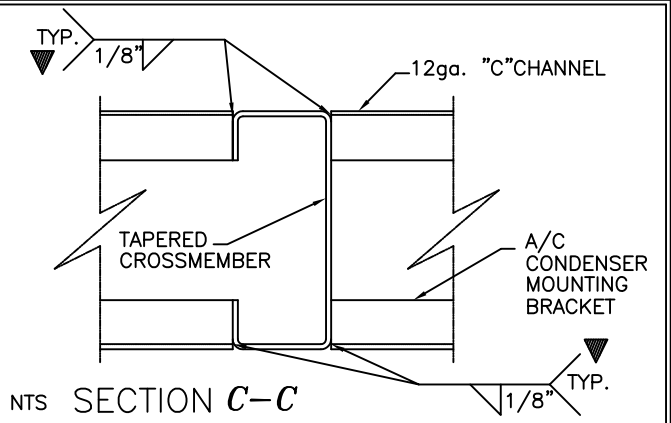
▼ CRITICAL CONTROL ITEM



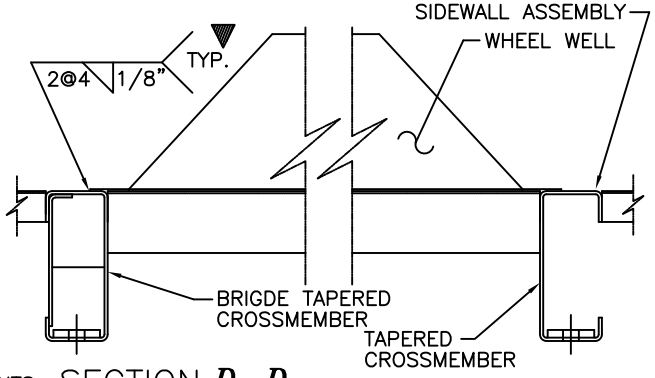
NTS SECTION *A–A*



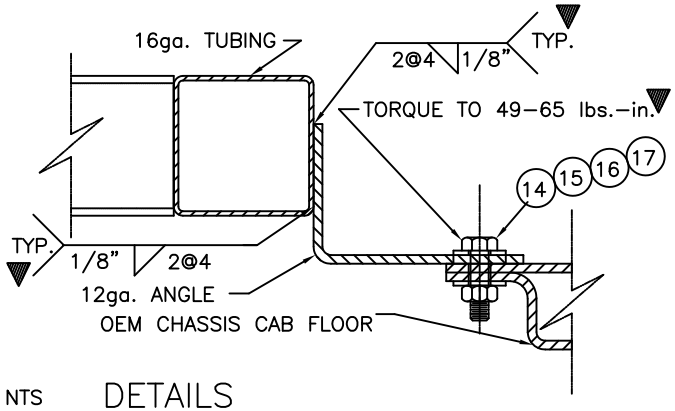
NTS SECTION *B–B*



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

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

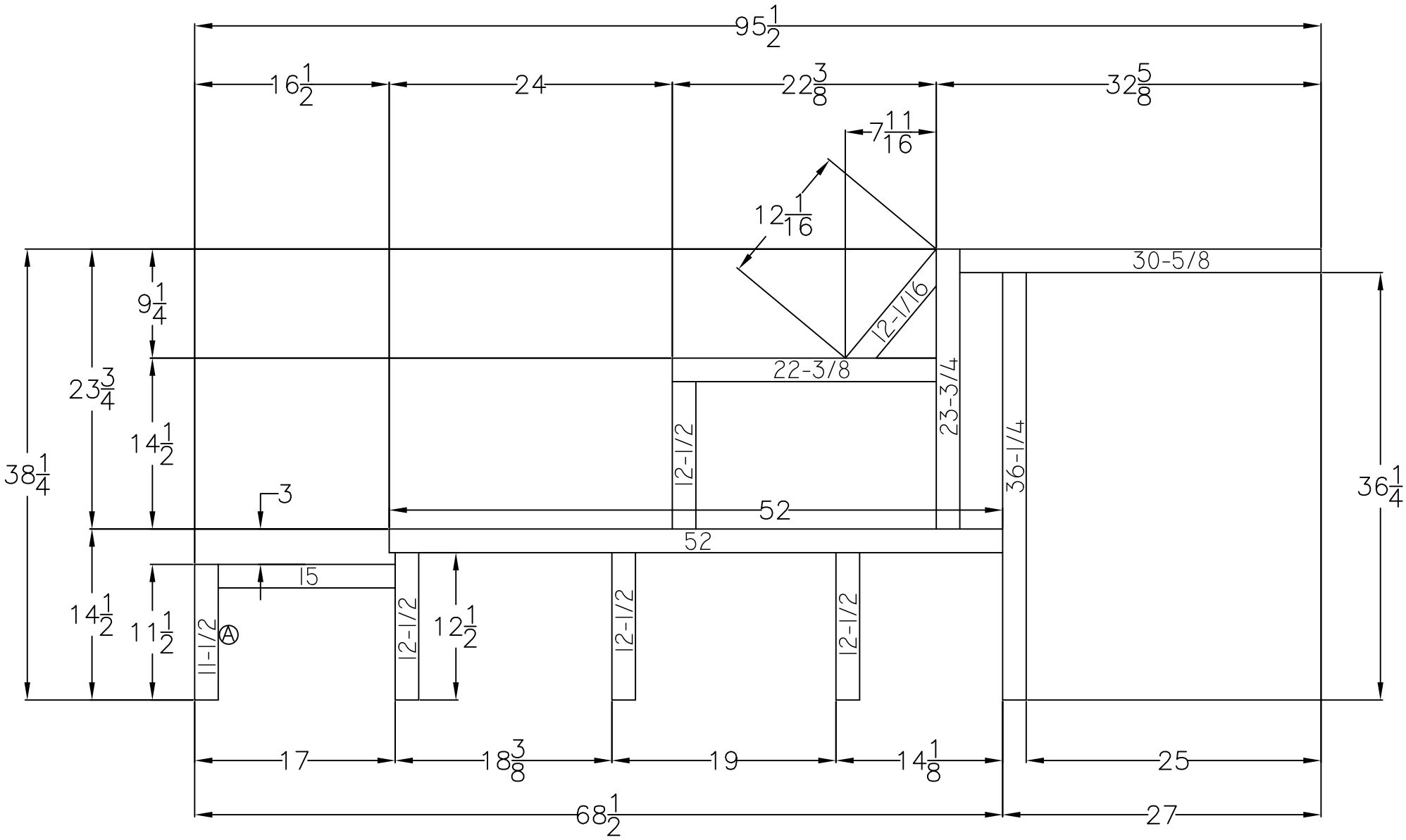
TOLERANCE UNLESS OTHERWISE SPECIFIED: WOOD ± 1/8" | ± 1° | OTHER | ± 1/16" | ± 1/2°

STARTRANS

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

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

STARTRANS

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

DATE: 06/10/10
DFTSN: MKLINE
CHKR:
APRVD:

TITLE: 2011 ALLSTAR NEW STYLE FALSE FLOOR

SCALE

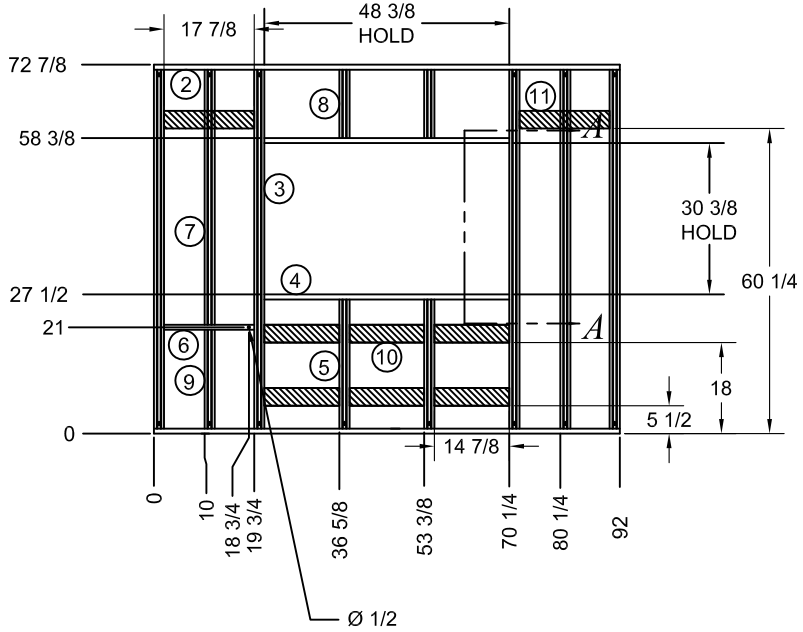
DWG. No. 31-28-0534-10

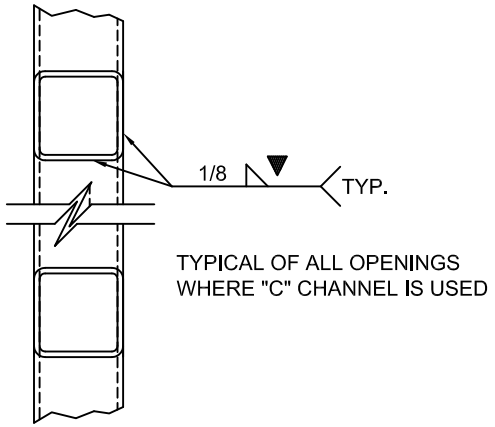
DISK No.

SHEET 1 OF 1

▼ CRITICAL CONTROL ITEM

USAGE: ALLSTAR W/ REAR EGRESS WINDOW





TYPICAL OF ALL OPENINGS
WHERE "C" CHANNEL IS USED

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			

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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:

STARTRANS

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

DWG. No. 31-28-0003-05

SCALE

DISK No.

SHEET 1 OF 1

Trans/Air® Manufacturing Corporation

SMC Condensers

SMC3L & SMC2S microchannel skirt mounted condensers that can be used with almost every standard Trans/Air evaporator / compressor combination to complete an optimal climate control system.

Industry exclusive 2 year, unlimited mileage, limited warranty



Flexible mounting pattern (optional channels available to attach condenser to vehicle stringer in lieu of standard floor mounting)

Constructed of corrosion-resistant powder-coated galvannealed steel

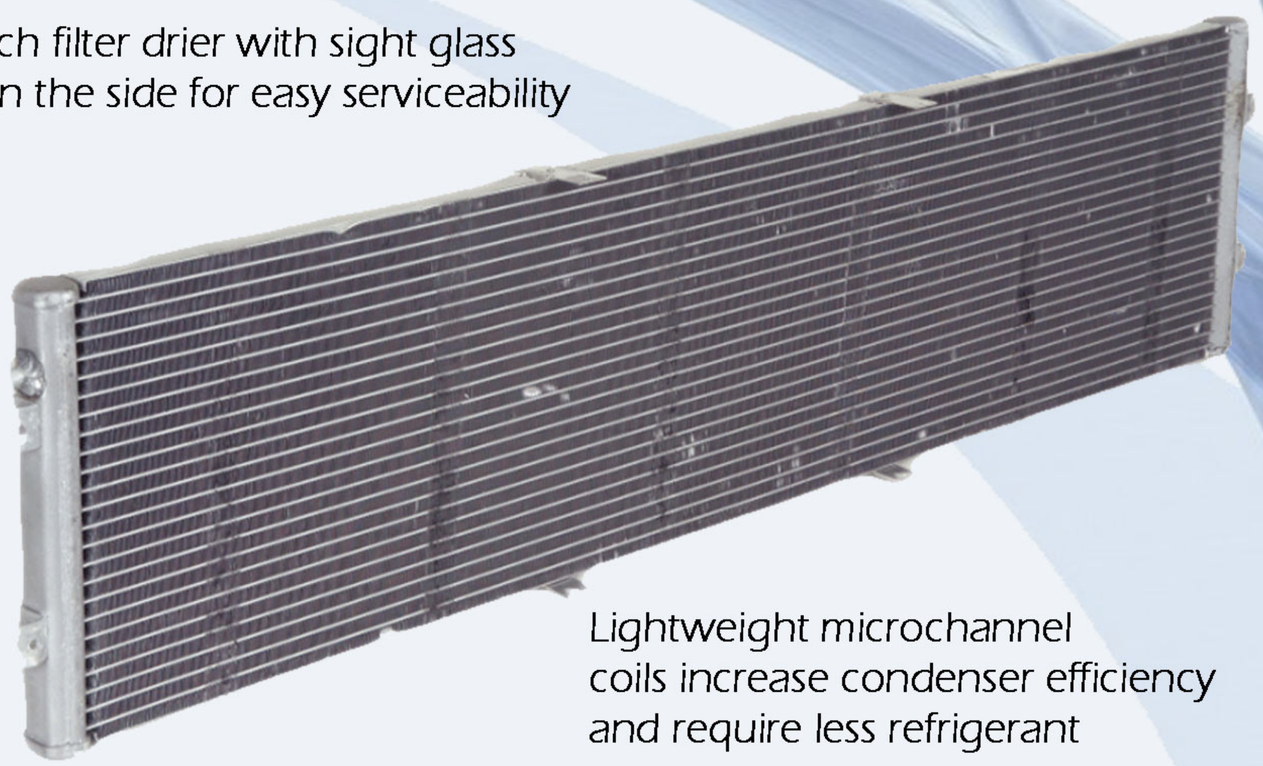
Stainless steel housing option is also available (Stainless Steel SMC2S pictured below)



Optional non-powder coated screens, stacking kits, and winter cover kits



16 cubic inch filter drier with sight glass mounted on the side for easy serviceability



Lightweight microchannel coils increase condenser efficiency and require less refrigerant



10" weather-proof condenser fans provide maximum air flow

School & Commercial Bus Climate Control **Design | Manufacture | Install | Service**

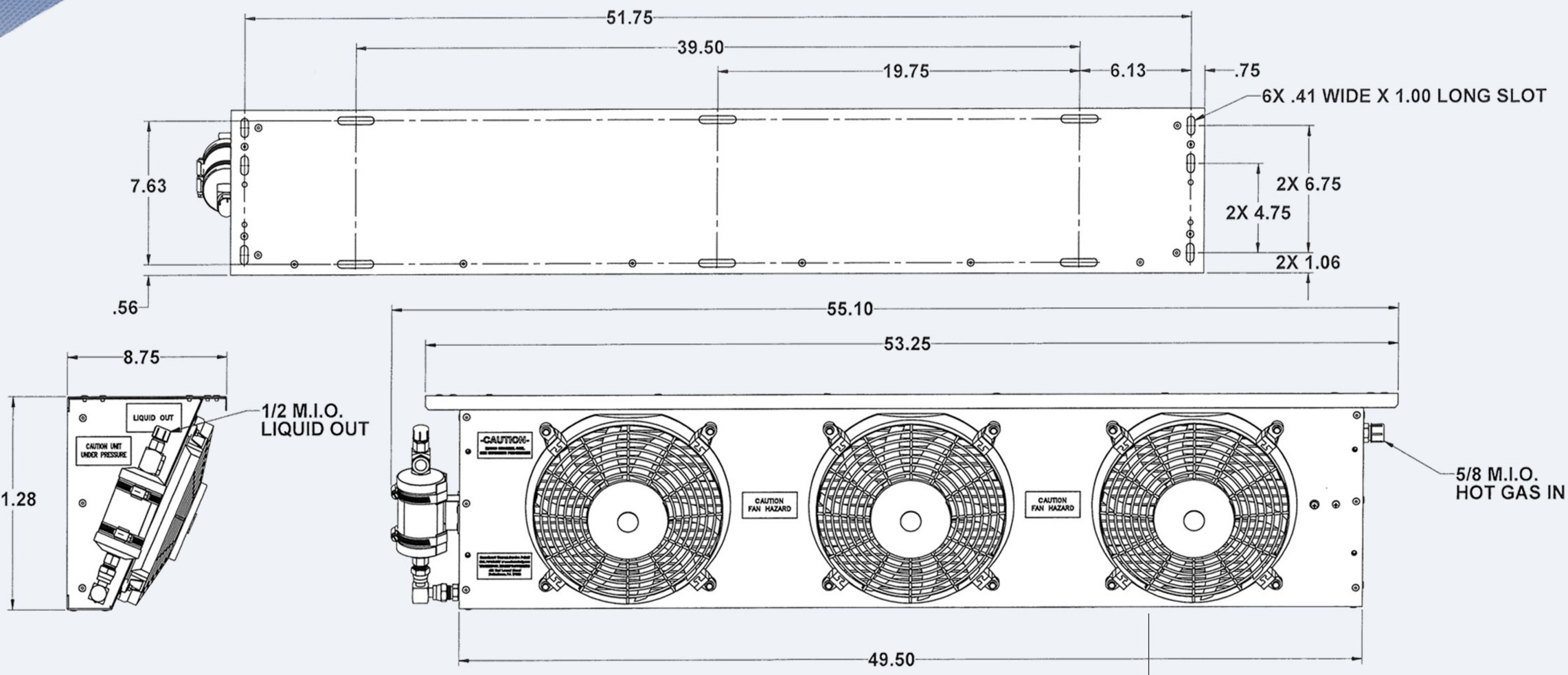
Trans/Air Manufacturing Corporation is an ISO 9001 registered firm committed to providing world class climate control products and services to the bus and commercial vehicle markets.

BSI FM 39947

LIT-SMC2013-042414

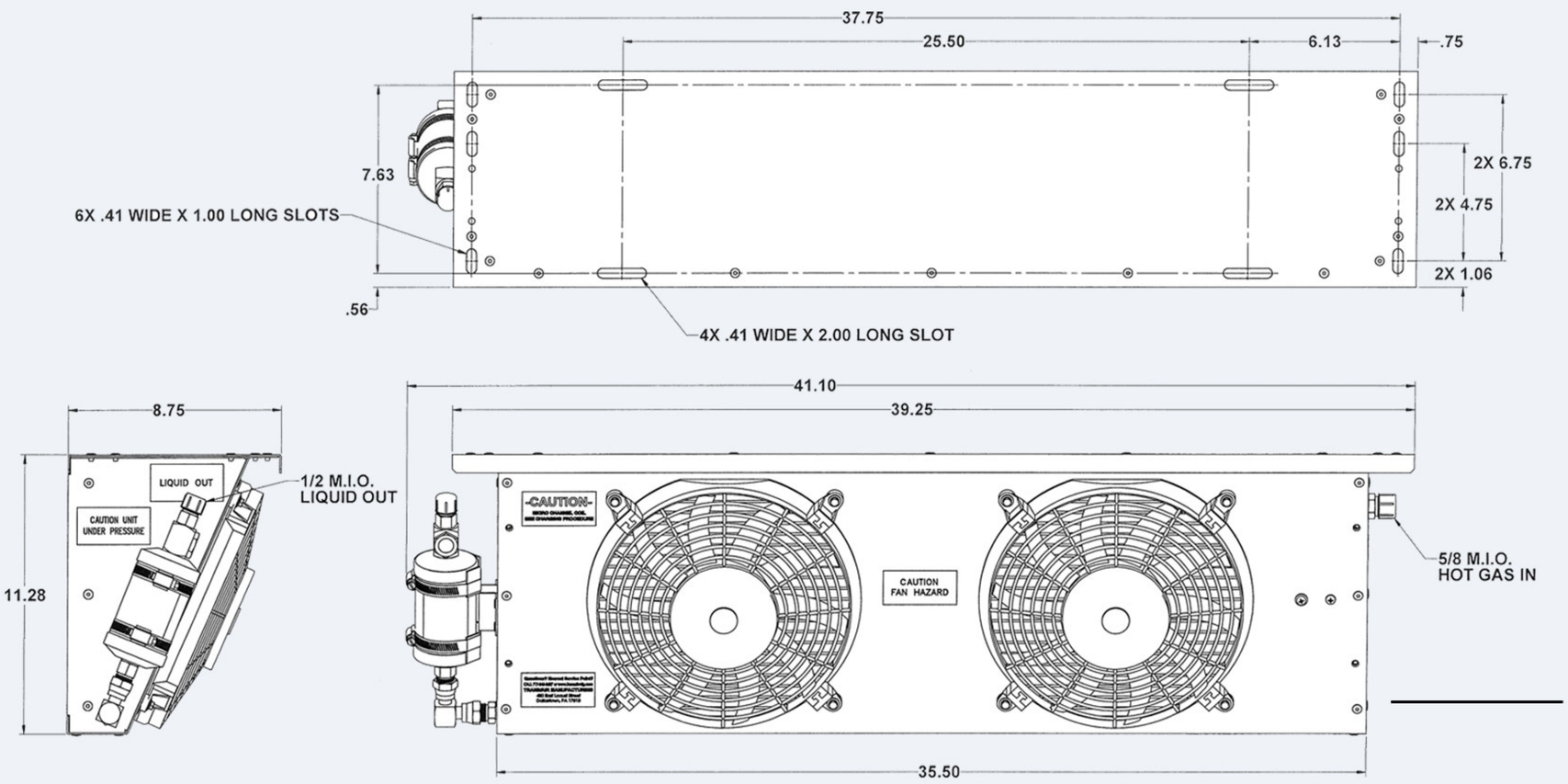
Trans/Air® Manufacturing Corporation

SMC Condensers



SMC3L

- Number of fans: 3
- Fan diameter in (mm): 10 (254)
- Fan air flow ft³/min (m³/hr) @ 0 static: 2745 (4664)
- Amperage: 31 @13.5 Vdc / 15.5 @ 27 Vdc
- Heat rejection BTU/hr: 71,325 (SAE) to 87,175 (IMACA) *
- Coil face area in² (cm³): 484 (3123)
- Unboxed weight lb (kg): 44.44 (20.16)
- Boxed weight lb (kg): 49.89 (22.63)
- Cube ft³ (m³): 4.16 (.12)
- Boxed dimensions in (mm): 57 x 13 x 11 (1448 x 330 x 279)



SMC2S

- Number of fans: 2
- Fan diameter in (mm): 10 (254)
- Fan air flow ft³/min (m³/hr) @ 0 static: 1830 (3109)
- Amperage: 21.3 @13.5 Vdc / 10.7 @ 27 Vdc
- Heat rejection BTU/hr: 48,364 (SAE) to 59,112 (IMACA) *
- Coil face area in² (cm³): 363 (2342)
- Unboxed weight lb (kg): 33.82 (15.33)
- Boxed weight lb (kg): 38.58 (17.50)
- Cube ft³ (m³): 3.09 (.09)
- Boxed dimensions in (mm): 43 x 13 x 11 (1092 x 330 x 279)

General (SMC2S & SMC3L)

- Skirt mounted
- Housing: powder-coated galvanealed steel (stainless steel optional)
- 92% flow-through aluminum grill
- Coil fins: 0.008 in thick
- Filter drier: 16 in³

Fan Motor Assembly (SMC2S & SMC3L)

- Low profile surface mount
- Closed permanent magnet motor with ball bearings

Sight Glass (SMC2S & SMC3L)

- Moisture indicator
- Visible from outside of vehicle

Warranty

- 2 year unlimited mileage limited warranty within the continental U.S. and Canada. Terms of Trans/Air's domestic and export warranty policies are available upon request.

*** Actual BTU/hr is dependant on system combination and rating conditions used**

- **Specifications subject to change without notice**
- **All measurements in standard**
- **Contact Trans/Air for more information**

480 East Locust Street, Dallastown, PA USA 17313 717-246 2627 | 800-673-2446 | Fx: 717-244-7088

www.transairmfg.com

LIT-SMC2013-042414

BODY CONSTRUCTION SPECIFICATION

The following information is submitted for all Startrans Bus products as supporting documentation of the structural soundness and impact resistance of the 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.

A representative set of construction prints provided by engineering supplements this verbal accounting of our materials and assembly specifications.

If, in the reviewing of these written technical specifications and engineering frame prints submitted any questions arise, please contact us immediately for any clarification or help in interpretation and understanding.

3.0 Body Construction – General Frame Construction

Manufactured from corrosion-resistant aluminized steel, the floor, roof, side walls, rear wall, driver halo assembly and entry door assembly are wire welded (MIG) together to form an integral steel frame cage, 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 aluminized steel, formed to a capital "C" shape. Cross members over the fuel tank are made to provide the clearance needed to conform to 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" run the length of the floor between cross members and are welded into place. This extremely strong form is used to weld our HSLA steel seat track in place.

3.0.1.3 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.

3.0.1.4 Seat Track – 12 gauge roll formed high strength/low alloy steel is wire welded in place for seat mounting down each side of the bus, with lengths predicated on the floor plan chosen. This is yet another stiffener in our extensive construction process.

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 aluminized 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.

3.0.2 Sidewall Construction –

3.0.2.1 Sidewall vertical member – The heart of our sidewall is the vertical structure, a roll formed 18 gauge aluminized steel capital "C" channel with 8 bends that create extreme strength and rigidity. The vertical member is installed in full lengths and in shorter sections below window frames. Additional vertical structure is used at both ends of the sidewall enabling the structure to withstand the forces applied by the vehicle when in motion.

3.0.2.2 Steel Tubing – 1"x1" lower and 1"x3" upper 16 gauge aluminized steel tubing is welded in horizontally between vertical members to frame in window openings. This adds front to rear reinforcement as well.

3.0.2.3 Seat Track – 11 gauge high strength low alloy roll formed steel track is welded down each sidewall below the window frame. While serving as a seat attaching device, it adds excellent structure to the sidewall and also adds excellent side impact resistance.

3.0.2.4 Wheelchair Options – Add another layer of metal. Depending on track locations, another structure of 11 gauge thick aluminized steel is welded in place between each vertical member for attaching a shoulder belt mount. Also, additional structure is added to accommodate wheelchair door frames – either 1"x1" or 1"x2" 16 gauge aluminized steel tubing.

3.0.2.5 Full length steel tubing – 1"x1" 16 gauge aluminized steel tubing is stitch welded to the sidewall bottom and top at each vertical member for attaching to the floor and roof sections, respectively.

3.0.3 Rear Wall Construction –

3.0.3.1 Rear wall vertical member – The vertical sidewall capital "C" channel with 8 bends is also used in the rear wall assembly. Full length structure is used at varying places, depending on choice of rear window, or rear door. Shorter cut pieces are

used above windows and doors. Additional side windows used with the rear door also change the configuration.

3.0.3.2 Steel Tubing – 1"x1" 16 gauge aluminized steel tubing is welded horizontally between vertical members to provide a window frame in the standard product, and used as an upper door frame in the optional rear assembly.

3.0.3.3 Full length steel tubing – 1"x1" 16 gauge aluminized steel tubing is stitch welded to the rear wall top and bottom as in the sidewall assembly.

3.0.4 Roof Construction –

3.0.4.1 Roof Bows – Radius formed one-piece 16 gauge aluminized steel roof bows formed as a modified hat post design with eight bends for exceptional strength and located on 16" centers (the closest in the industry), including 4 bends in the web similar to our vertical sidewall steel provide a roof structure capable of taking severe loads. They are then capped with top flat pieces from flange to flange to provide abundant surface area for securing the exterior roof material.

3.0.4.2 Steel Tubing – 1"x1" 16 gauge aluminized steel tubing is welded in horizontally to frame all lower window openings and 1" x 3" 16 gauge aluminized steel tubing to all upper window openings as required. A full perimeter is also welded on to mate the roof to the side walls and rear wall, with short vertical pieces providing support on the front and rear ends. The 3" wide aluminized steel tube supplies a structural mounting surface for shoulder belt attachment and has been pull tested to federal standards.

3.0.5 Driver Compartment Overhead Halo –

3.0.5.1 Steel Tubing – 1"x1" 16 gauge aluminized 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 aluminized 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 in 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 aluminized 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 and .75”x.75” 11 gauge aluminized 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 90º bends at all risers and treads. The bottom tread also adds an additional 90° bend for additional strength and safety. Upper and lower side pieces are then attached and an 11 gauge flat plate with holes is used to bridge the lower and upper side pieces, then is stitch welded and plug welded to form a strong one piece assembly prior to inserting and welding to the entry step framing.

APPLICATION OF EXTERIOR SIDEWALL MATERIAL

GALVANIZED STEEL SIDEWALLS OR OPTIONAL FIBERGLASS/FRP/COMPOSITE SIDEWALLS

The standard exterior side walls are .024” galvanized steel pre-painted white with an underlayment of 5/32” luan. The interior side walls are 5/32” luan covered with a light gray FRP or padded vinyl (customer’s choice). The foam filled steel cage is placed in the center and all layers are adhered using polyurethane hot melt adhesive. The wall and roof sections are run through a pinch roller to apply pressure to the assembly, thereby squeezing out any air bubbles.

Optional composite FRP exterior sidewall panels are installed using the same method.

STARTRANS SENATOR & CANDIDATE II STANDARD EQUIPMENT

EXTERIOR STANDARD FEATURES/ITEMS

EXTERIOR LIGHTING

L.E.D. THINLINE RECTANGULAR FRONT & REAR CLEARANCE & MARKER LAMPS (5 FRONT AMBER, 7 REAR RED), L.E.D. RED STOP/TAIL AND TURN SIGNAL/RUNNING LAMPS, L.E.D. BACK UP LAMPS, L.E.D. LICENSE PLATE LAMP. 2 OF THE 7 THINLINE RED LIGHTS ARE SURFACE MOUNTED ON THE REAR SKIRT(OPTIONAL ARMORING IS AVAILABLE). THE OTHER 5 ARE INSTALLED IN THE REAR CAP RECESSES. A SURFACE MOUNTED LED EXTERIOR DOOR LIGHT IS NOW STANDARD WITH OPTIONAL LIGHTS AVAILABLE. LIGHT SUPPLIER IS STARTRANS OEM - OPTIONAL BRANDS MAY BE AVAILABLE AT ALTERNATE PRICING - CHECK WITH YOUR STARTRANS REPRESENTATIVE

EXTERIOR MIRRORS

ROSCO ACCUSTYLE MANUAL EXTERIOR BREAKAWAY MIRRORS ARE USED. SINGLE DOOR CHASSIS HAVE CHASSIS MOUNTED DRIVER SIDE AND USE THE ROSCO PATENTED FENDER MOUNT CURBSIDE. OVERALL HEAD SIZE IS APPROXIMATELY 7" X 14" WITH A FLAT LENS 7"W X 10"H AND CONVEX LENS 7"W X 4"H (BOTH APPROXIMATE). A FULL ARRAY OF POWER, HEAT AND TURN SIGNAL OPTIONS IS AVAILABLE. ALTERNATE BRAND MIRRORS MAY BE AVAILABLE AT AN ADDITIONAL CHARGE - CHECK WITH YOUR STARTRANS REPRESENTATIVE

EXTERIOR FRONT CAP & BODY WINGS

FIBERGLASS FRONT CAP WITH RECESSED MOUNTING FOR THINLINE AMBER RECTANGULAR L.E.D.MARKER/CLEARANCE LAMPS. FRONT FIBERGLASS CURBSIDE WING WITH LARGE 361 SQ. IN. VIEWING WINDOW TINTED AS-2 PER FMVSS REGULATIONS. FRONT STREETSIDE FIBERGLASS WING MATING TO CHASSIS "B" PILLAR.

EXTERIOR REAR ONE-PIECE CAP

ONE-PIECE FIBERGLASS REAR CAP WITH ANTI-RIDE FEATURE, RECESSED MOUNTING FOR 4" ROUND L.E.D. GROMMET MOUNT STOP/TAIL/TURN AND BACK UP LAMPS. RECESSED MOUNTING FOR 5 EACH THINLINE RED SURFACE MOUNT L.E.D. MARKER/CLEARANCE LAMPS. INCLUDES A 30" X 48" NOMINAL REAR EGRESS WINDOW AS STANDARD.

EXTERIOR ROOF

5.2mm THICK LUAN IS SECURED BY FASTENERS TO EACH ROOF BOW, THEN A ONE-PIECE .040" THICK FRP ROOF IS BONDED WITH ADHESIVE TO THE LUAN. EXTRA REINFORCEMENT AT THE ROOF RADIUS IS PROVIDED BY A .050" THICK BLACKBOARD.

EXTERIOR SIDEWALL & SKIRT METAL

.024" THICK PRE-PAINTED GALVANIZED STEEL SIDEWALL METAL AND SKIRTS. SIDEWALL IS LAMINATED USING A REACTIVE, CROSSLINKED STRUCTURAL HOT MELT ADHESIVE TO THE STEEL FRAME USING HIGH PRESSURE PINCH ROLLERS TO ENSURE A SOLID BOND.

EXTERIOR REAR BUMPER

A HEAVY DIE-FORMED STEEL BUMPER WITH TOP AND BOTTOM REINFORCING RIBS AND BLACK POWDER COAT PAINT IS INSTALLED USING 316 STAINLESS STEEL BOLTS.

INTERIOR STANDARD FEATURES/ITEMS

DRIVER OVERHEAD AREA

GREY PADDED VINYL DRIVER OVERHEAD PANEL, ELECTRICAL COVER PANEL & ACCESS DOOR, ENTRY DOOR AND "B" PILLAR COVERING. PANELS ARE SECURELY ATTACHED TO FRAME COMPONENTS USING FASTENERS.

CEILING AND REAR WALL

5.2mm THICK LUAN IS ATTACHED TO STRUCTURE WITH FASTENERS. SEASPRAY FABRIC IS INSTALLED WITH AN ADHESIVE TO THE LUAN.

CEILING AND REAR WALL

5.2mm THICK LUAN IS ATTACHED TO STRUCTURE WITH FASTENERS. SEASPRAY FABRIC IS INSTALLED WITH AN ADHESIVE TO THE LUAN.

UPPER INTERIOR SIDEWALL
VANDAL RESISTANT FRP LAMINATED TO LUAN IS INSTALLED ABOVE THE SEAT TRACK TO THE TRANSITION PANEL. MATING PANELS ARE TRIMMED USING A VINYL "T" LOCK WITH SMOOTH EDGES

LOWER INTERIOR SIDEWALL
DIRECTIONLESS WEAVE CHARCOAL COLOR FABRIC IS INSTALLED ON LUAN USING AN ADHESIVE FROM BELOW THE SEAT TRACK TO THE FLOOR.

SIDEWALL/CEILING TRANSITION PANELS
ATTRACTIVE CONVEX RADIUS DIE FORMED ALUMINUM TRANSITION PANELS ARE COVERED WITH SEA SPRAY FABRIC AS THE CEILING AND REAR WALL. THE PANELS ARE HELD IN PLACE BY AN EXTRUDED ALUMINUM "J" RAIL THAT IS ANODIZED WITH AN ATTRACTIVE, GLARE-FREE SATIN FINISH. PANELS STAY IN PLACE BUT CAN BE REMOVED WITHOUT TOOLS FOR ANY SERVICE WORK NEEDED. PANEL ENDS ARE NEATLY TRIMMED OUT WITH GREY THERMOFORMED PLASTIC.

INTERIOR LIGHTING
L.E.D. PASSENGER DOME LAMPS (THE QUANTITY VARIES WITH BODY LENGTH), L.E.D. DRIVER OVERHEAD DOME LAMP, L.E.D. ENTRY STEP LAMPS. LIGHT SUPPLIER IS STARCRAFT OEM - OPTIONAL BRANDS MAY BE AVAILABLE AT ALTERNATE PRICING - CHECK WITH YOUR STARTRANS REPRESENTATIVE

PLYWOOD SUB-FLOOR DECKING
5/8" THICK PLYWOOD IS INSTALLED OVER THE FLOOR STEEL STRUCTURE AFTER THE APPLICATION OF A STRUCTURAL ADHESIVE ON ALL FLOOR STRUCTURE PARTS. THE PLYWOOD IS HELD IN PLACE UNTIL THE ADHESIVE CURES BY COUNTERSUNK SELF DRILLING #14 SCREWS

INTERIOR & STEP FLOORING
GERFLOR SIRIUS NT 2.25mm THICK GRAPHITE (BLACK) UPGRADE, PVC FLOORING IS INSTALLED USING A HIGH TEMPERATURE, PLASTICIZER RESISTANT ADHESIVE, THEN ROLLED WITH A HEAVY WEIGHT TO REMOVE ANY AIR BUBBLES. ALL SEAMS ARE HEAT WELDED TO FORM A VIRTUAL ONE-PIECE PASSENGER AREA COVERING COVED TO BOTTOM OF SEAT TRACK WHITE STEP NOSING IS STANDARD. YELLOW IS AVAILABLE AS AN OPTION.

ENTRY GRAB RAILS & STANCHION PANELS
A VERTICAL STAINLESS STEEL GRAB RAIL IS INSTALLED ON THE LOWER LEFT HAND SIDE OF THE ENTRY STEPS. A MODESTY PANEL/STANCHION ASSEMBLY IS INSTALLED AT THE TOP OF THE ENTRY STEPS ON THE LEFT HAND SIDE OF THE ENTRY WAY AND A STAINLESS STEEL GRAB RAIL IS INSTALLED FROM THE ENTRY WAY WALL TO THE VERTICAL STANCHION AT THE END OF THE ENTRY STEPS. A GREY PADDED VINYL MODESTY PANEL IS STANDARD.

STANDARD DOOR AND WINDOW INFORMATION

PASSENGER WINDOWS
36" TALL X 36" WIDE UPPER T SLIDE WINDOWS TINTED TO FMVSS COMPLIANT AS-3 USING 3mm THICK GLAZING THAT PROVIDES 23% VISIBLE LIGHT TRANSMITTANCE, MOUNTED IN AN ALUMINUM EXTRUDED FRAME THAT IS BLACK POWDER COATED. 36" HIGH X 24" WIDE WINDOWS MAY BE NECESSARY AS "FILLERS" ON CERTAIN BODY LENGTHS TO MAXIMIZE PASSENGER VIEWING AREA. A REAR 30" TALL X 48" WIDE (NOMINAL) EGRESS WINDOW. FMVSS 217 COMPLIANT SIDE EGRESS WINDOWS ARE SUPPLIED. 1 PER SIDE IS STANDARD, BUT PASSENGER COUNTS MAY REQUIRE ADDITIONAL WINDOWS TO BE ORDERED. CHECK WITH YOUR STARTRANS REPRESENTATIVE.

PASSENGER ENTRY DOOR
36" WIDE ROUGH OPENING WELDED ENTRY ASSEMBLY. A&M MANUFACTURING PRODUCED ENTRY DOOR LEAVES AND A&M ELECTRIC DOOR HEADER MECHANISM (MANUAL IS AVAILABLE - OPTIONS MAY DICTATE DIFFERING DOOR SIZE). FULL HEIGHTH 1/8" THICK TEMPERED SAFETY GLASS IN EACH DOOR LEAF IS FMVSS COMPLIANT AS-2 TINTED. LEAF FRAMES ARE INTERLOCKED ALUMINUM EXTRUSIONS WITH TOUGH, CLEAR COAT ANODIZED 204 R1 RATED FINISH FOR CORROSION PROTECTION AND INTEGRATED, OVERLAPPING FLEXIBLE SEALS (APPROXIMATELY 2.5" EACH). FRONT LIFT 138"/139" WHEELBASE MODELS USE A 32" ENTRY DOOR.

The **Candidate II Transit**

STARTRANS BUS
a division of Forest River, Inc.



Value-Packed with Superior Fuel Economy, Narrow Body Bus

The Candidate II Transit is the perfect solution for those in the market for a smaller shuttle bus or an alternative to a van. The Transit, with its narrow body and long list of standard features, can accommodate a variety of needs. Drivers will appreciate the improved visibility the Candidate II Transit offers with super starview window and the well-designed driver's area.

Passengers will be able to enter and exit the Candidate II Transit with ease due to the 10" ground to first step, wide entry door, and the deep entry steps. Once on board, the passengers can comfortably move throughout the bus with its 20" aisle and 76" of interior head room. When passengers are seated, they will have an appreciable view through the 36" x 36" windows. This, combined with the previously mentioned features, make the Candidate II Transit the most spacious shuttle bus in its class.

Candidate II Transit Features | Features to Meet Your Specific Needs



Comfortable and easily-accessible driver's area



Spacious interior with mid-backseats and wheelchair lift



Attractive and convenient driver control panel

STARTRANS BUS
a division of Forest River, Inc.

The Candidate II Transit

STARTRANS BUS
a division of Forest River, Inc.

Standard Exterior Feature Highlights

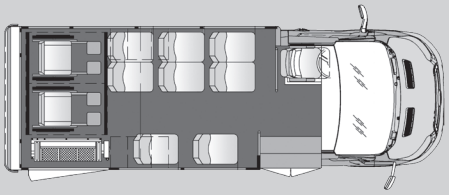
- Fully welded aluminized steel cage construction with laminated sidewall structure meeting all applicable FMVSS requirements
- 10" ground to first step at entry door
- 109" overall exterior height (depending on options)
- "Super Starview" drivers visibility window in front of entry door
- Electric actuated passenger entry door with full length glass
- 36" high x 36" wide high upper double T-Slider tempered safety glass windows with climate control tint
- Black powder coated steel rear bumper
- Rear mud flaps
- Pre-painted white galvanized steel sidewalls and skirts
- Fiberglass front and rear cap
- One-piece seamless FRP (fiberglass reinforced plastic) roof
- Breakaway rearview mirrors with built-in convex
- Drip rail over all windows and passenger door openings
- LED front and rear marker lights
- LED stop, tail, and turn signal lights including back-up lights

Standard Interior Feature Highlights

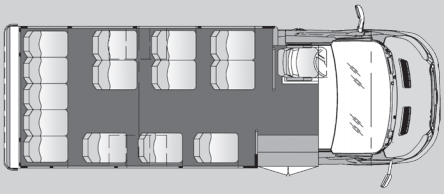
- 81" interior width
- 76" interior floor to ceiling height
- Welded floor and wall seat track for flexible seating
- Black slip resistant floor covering
- 5/8" plywood flooring
- Ceiling and rear wall fabric for sound abatement
- FRP (fiberglass reinforced plastic) sidewalls for ease of cleaning
- White step nosing at passenger entry door
- 1.25" left hand vertical passenger assist rail at entry door
- Printed circuit board with automotive type fuses and LED trouble shooting lights
- LED Entry door step well lights
- LED driver and passenger area lighting
- Non-retractable seat belts

Popular Option Highlights

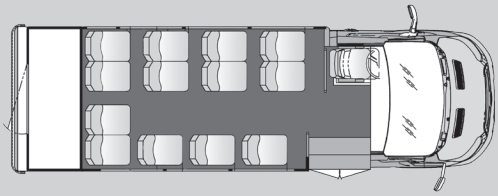
- Stainless steel wheel inserts
- Luggage Storage areas (overhead luggage racks with reading lights, interior luggage racks, rear storage area)
- Rear emergency door with window(s)
- Passenger area rear heat and air conditioning
- Passenger grab rails
- Padded vinyl or cloth walls and ceiling
- Audio and video systems
- Bonded windows
- ADA and FMVSS compliant wheel chair lifts and securement systems



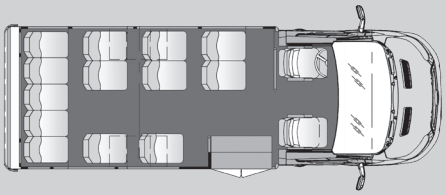
8 Passenger Two Wheelchairs Plus Driver



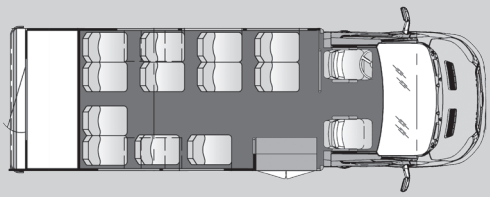
14 Passenger Plus Driver



13 Passenger Plus Rear Luggage Plus Driver



14 Passenger Plus Driver



13 Passenger Plus Rear Luggage Plus Driver

ISO 9001 REGISTERED Quality Management System

QVM QUALIFIED VEHICLE MODIFIER

Due to our commitment to product quality, specifications and options are subject to change without notice in the interest of product improvement and market changes.

StarTrans Bus, a division of Forest River, Inc., is owned by Berkshire Hathaway, one of the most respected and financially secure companies in the industry.

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Lit. No. STB-04R/022818

Trans/Air® Manufacturing Corporation

TA73 Evaporator

Industry exclusive 2 year, unlimited mileage, limited warranty



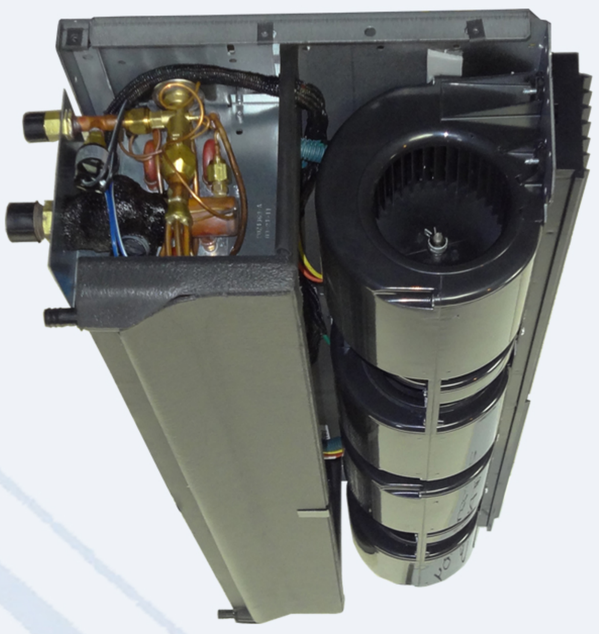
A rear or front mounted freeblow evaporator that can be used as a tie-in with OEM components or as part of a complete Trans/Air system

Durable ABS cover with unique drain pan that promotes proper condensate removal (available in white, gray, and spring white)

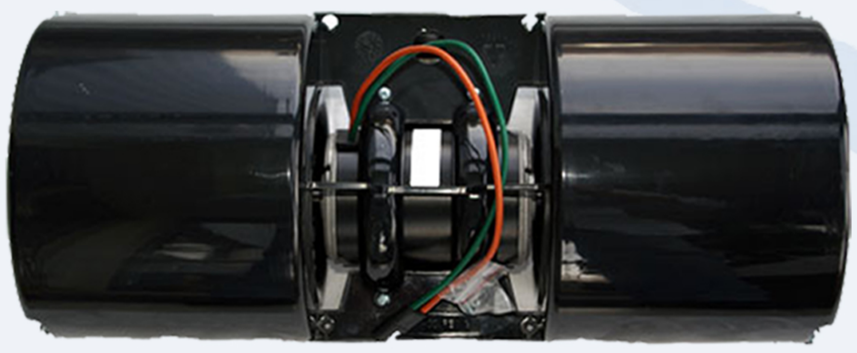


Enhanced tube & fin design provides highest capacity





Heavy Duty galvannealed steel enclosure for reduced air leakage and maximum durability



Blower assemblies come equipped with larger blower wheels for maximum air flow and motors utilize custom wound armatures for lower current draw and greater efficiency





4 Ton externally equalized, thermostatic expansion valve that precisely controls refrigerant and prevents liquid slugging to the compressor or starved evaporator

School & Commercial Bus Climate Control **Design | Manufacture | Install | Service**

Trans/Air Manufacturing Corporation is an ISO 9001 registered firm committed to providing world class climate control products and services to the bus and commercial vehicle markets.

FM 39947

Trans/Air® Manufacturing Corporation

TA73 Evaporator

General
- Freeblow air distribution
- Weight lb (kg): 52.8 (24)
- Box Size in (mm): 45 x 22 x 14 (1140 x 560 x 360)
- Cube ft³ (m³): 8 (.23)

Cooling Capacity
- BTU/hr: 41,000 (SAE) to 65,000 (IMACA) *

Heating Capacity
- BTU/hr: 50,000 (Actual capacity varies based on engine operating temperature and hot water flow rate

Cover
- ABS cover
- Seperate drain pan with sump
- (2) Multi-directional louvers
- Washable / reusable filter
- (2) 5/8 in ID drain hoses

Blower Assemlies
- (4) 4.5 in diameter blower wheels
- Amperage draw: 16.9 Amps @ 13.5 Vdc (8.5 Amps @ 27 Vdc)
- Total air flow 1480 ft³/min (2515 m³/hr) @ 0 static
- (2) Double shafted, single speed, permanent magnet motors

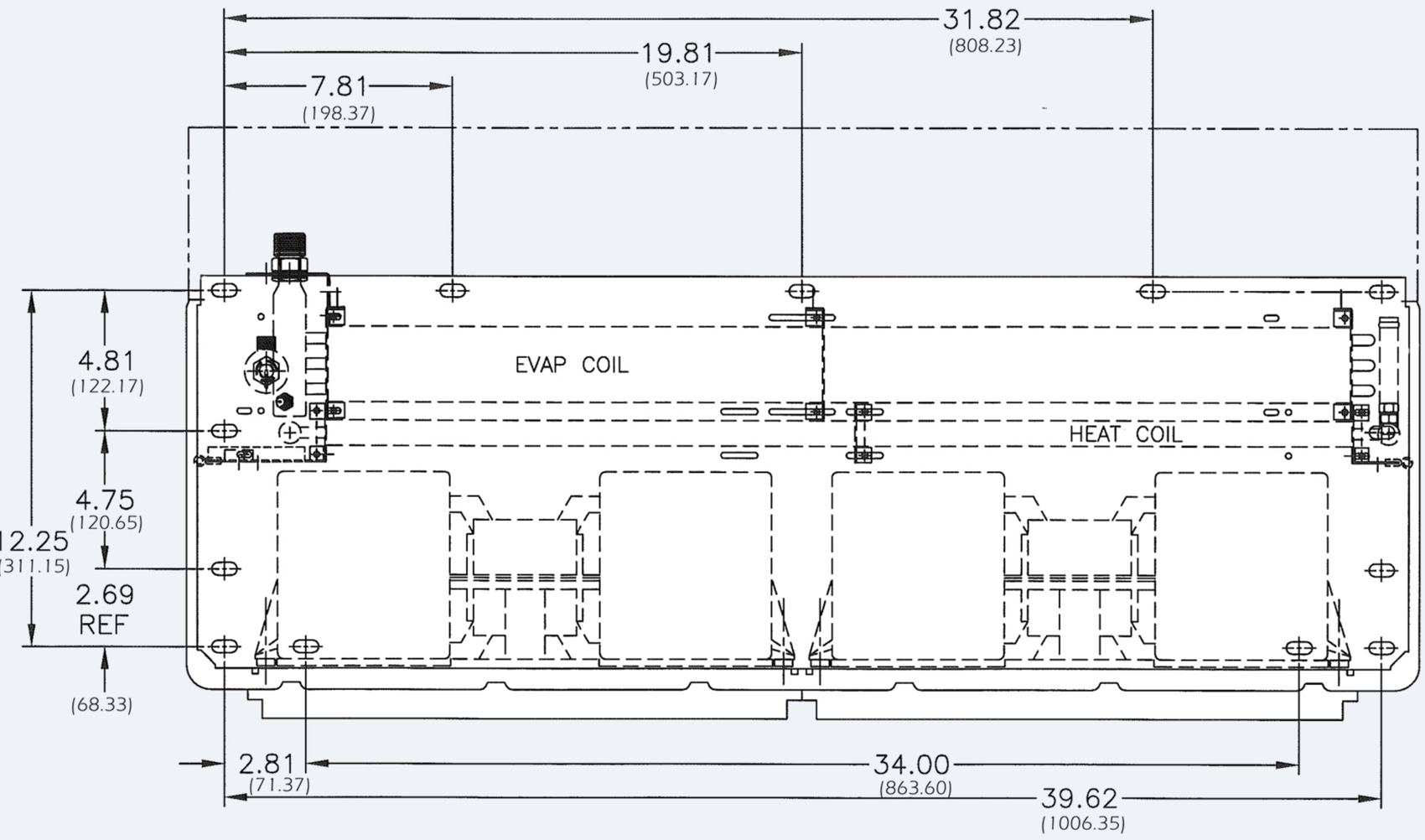
Evaporator Coil
- (1) Coil
- Face area in² (cm²): 280 (1806)
- 3/8 in enhanced copper tubing
- Fins: 0.006 in raised lance, 10 FPI
- (3) Row

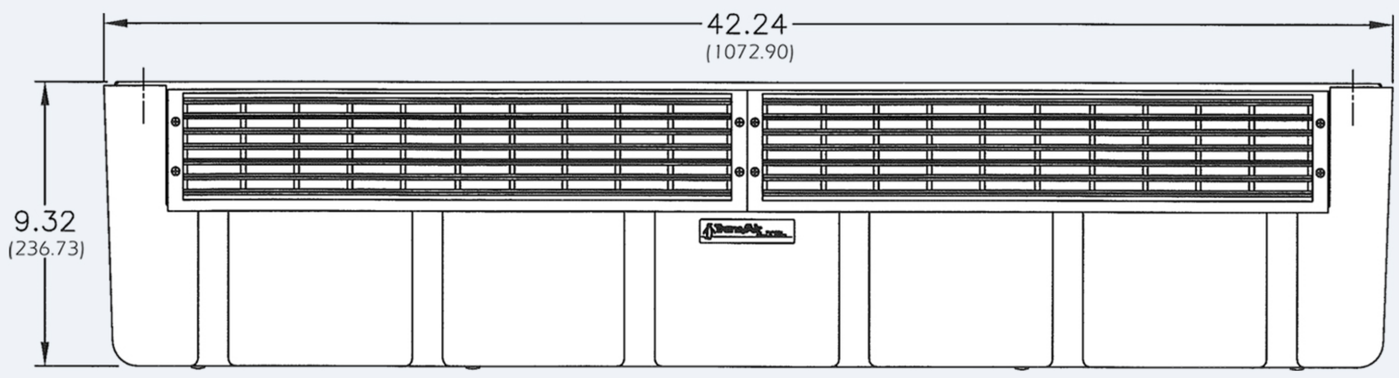
Electrical
- Color coded in fire retardant loom
- Low and high pressure swtiches

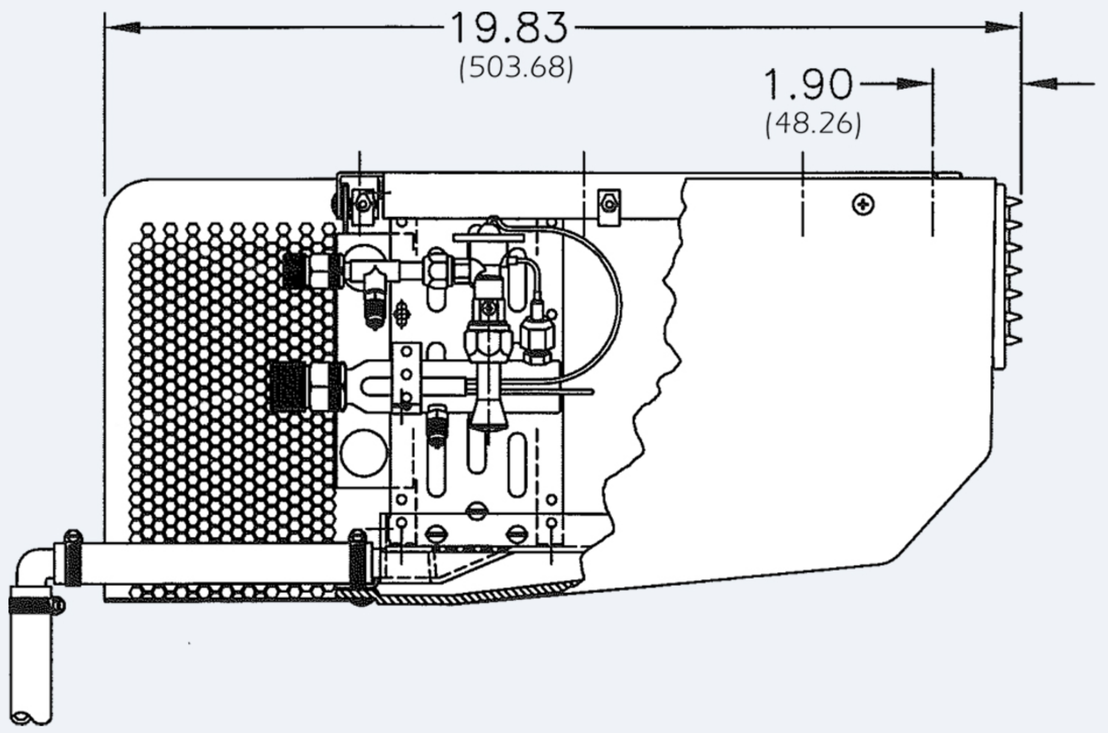
Expansion Valve
- (1) 4 Ton externally equalized thermostatic type

Available Options
- Metal cover for use with with OEM installation
- Heat coil used with positive isolator valve. Isolator valve and heater hose not inlcuded.
- Coil corrosion protection

Warranty
- 2 year unlimited mileage limited warranty within the continental U.S. and Canada. Terms of Trans/Air's domestic and export warranty policies are available upon request.







*** Actual BTU/hr is dependant on system combination and rating conditions used**

- **Specifications subject to change without notice**
- **All measurements in standard (metric)**
- **Contact Trans/Air for more information**

480 East Locust Street, Dallastown, PA USA 17313 717-246 2627 | 800-673-2446 | Fx: 717-244-7088

www.transairmfg.com

RAIN BOOTH INFORMATION

Constructed as part of a corporate-wide pre-delivery inspection facility, the Forest River 20' x 50' motorized vehicle rain booth utilized by Starcraft and Startrans Bus offers exceptional performance in the area of water leak detection.



The motorized vehicle rain booth adds front wall nozzles to the design of the towable rain booth, simulating the pelting of oncoming rain at highway speeds. Both booths include two 1200 gallon recycling tanks and utilize a 12Horsepower pump with multi-bank filters capable of delivering 40 – 60 p.s.i. That equates to 300 gallons per minute pushed through the spray heads, or the equivalent of a 24 inch-per-hour downpour!

With nozzles directed at the roof, sidewalls, front and undercarriage, nothing goes untouched in our quest for leak elimination. Using both velocity and volume in our test procedure ensures our valuable customers that we are doing the utmost to deliver a leak-free product to them.



Visitors are always welcome to witness the test booths whenever they are in operation.

2367 Century Drive, Goshen, IN 46528 PH: 800-348-7440 FAX: 574-642-4389

Z TECH®

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

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9/12/2013

MB # LB005 V1

Z GUARD 9902 STAR Film Properties

Performance testing reflects coating on unpolished Q panels with four day air-dried films at 3.0 – 4.0 mils dry.

Dry to touch at R.T., ASTM D1640	10 ± 2 minutes
Dry-to-Handle at R.T., ASTM D1640	20 ± 5 minutes
Pencil Hardness	6B
Flexibility 180° bend over conical mandral	Pass
Salt Spray, ASTM B117, 1000 hours	Field, scribe, edge clean; slight blistering
Salt Fog Resistance (463PB-10-01), 240 hours.	Pass (No rust)
♦ 500 F x 16 hours plus 240 hrs salf fog	Pass (No rust)
♦ 325 F x 16 hours plus 16 hours humidity.	Pass (No rust, nor blisters)
Salt Fog Resistance (WSS-M2P178-A), 240 hours.	
♦ 662°F x 1 hour; 1°C water quench; plus 240 hrs salt fog.	Pass (#8-9 corrosion rating or <0.1% surface rust per ASTM D 610-95)
Salt Water Immersion, 5% NaCl, 100° F, 96 Hours	Pass
Detergent Immersion, 100° F, 48 Hours	Pass
Gravelometer, ASTM D3170, -20° F	Good(8A)
Poultice, GM 998-5470, 20 cycles	Pass
Q.U.V., ASTM G53, 3000 Hours	Pass
Q.U.V., 100 Hours + Salt Spray, 336 Hours	Pass
Q.C.T., 3000 Hours	Pass
Humidity Resistance, ASTM D2247, 2000 Hours	Pass
Sag resistance	≥5 mils
Impact (direct & reverse) ASTM D3281	160/40 inch-lbs.
Adhesion (FLTM B1 6-1 B) cross Hatch	5A Pass
Scab corrosion resistance, 20 cycles	Pass

APPLICATION

For ultimate protection, apply films to clean metals at a thickness of at least four (4) mils dry, by any of the following methods:

Airless spray, with a 33:1 1.5 - 3.5 GPM, .013 - .026 tip at 50-75 psi line pressure, 20 - 40 fan

www.ztechprotection.com

Z TECHNOLOGIES CORPORATION
26500 Capitol Avenue, Redford, Michigan 48239-2597
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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
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Redford, MI 48239 USA
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Desk 313 937 0710 xt 211
Fax 313 937 1470
Cell 313 506 2772
www.ztechprotection.com
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Production Part Approval - Material Test Results

Supplier		
Z Technologies Corporation		Part Name
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