REPORT NUMBER: 111-MGA-05-002

SAFETY COMPLIANCE TESTING FOR FMVSS NO. 111 SCHOOL BUS REARVIEW MIRRORS

Girardin Minibus Inc.
2005 Minibus
NHTSA No. C50902

PREPARED BY:
MGA RESEARCH CORPORATION
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BURLINGTON, WI 53105

Final Report Date: March 14, 2005

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW, ROOM 6115 (NVS-220)
WASHINGTON, D.C. 20590

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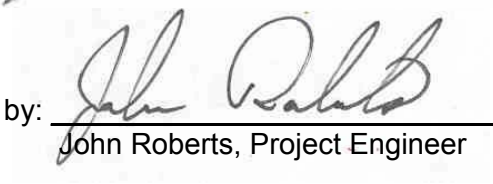
Prepared by:  Date: March 14, 2005
James Hansen, Program Manager

Reviewed by:  Date: March 14, 2005
John Roberts, Project Engineer

FINAL REPORT ACCEPTED BY:

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_____
Date of Acceptance

Technical Report Documentation Page

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16. Abstract Compliance tests were conducted on the subject Girardin 2005 Minibus, NHTSA No. C50902 in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-111SB-00 for the determination of FMVSS 111 compliance. Test failures were as follows: NONE			
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SECTION 1
PURPOSE OF COMPLIANCE TEST

Tests were conducted on a MY2005 Girardin School Bus Model Minibus, NHTSA No. C50902, in accordance with the specifications of the Office of Vehicle Safety Compliance (OVSC) Test Procedures TP-111SB-00 to determine compliance to the requirements of Federal Motor Vehicle Safety Standard (FMVSS) 111, “School Bus Rearview Mirrors.”

This program is sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-02-D-01057.

SECTION 2
TEST DATA SUMMARY

Based on the tests performed, the MY2005 Girardin School Bus, Model Minibus, NHTSA No. C50902 appears to meet all of the requirements of FMVSS 111. See Test Summary Data Sheets on the following pages.

FMVSS 111SB, SCHOOL BUS REARVIEW MIRRORS
TEST SUMMARY DATA SHEETS

Test Vehicle: **Girardin 2005 Minibus** NHTSA No.: **C50902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **1/10/05**

System A Mirrors

A. Outside Driver Side Mirror #3 - Unit Magnification

Requirements	Pass/Fail	Comments
Mounting	PASS	--
Field of View	PASS	--
Surface Area	PASS	--
Reflectance	PASS	--
Unit Magnification	PASS	--

B. Outside Passenger Side Mirror #4 - Unit Magnification

Requirements	Pass/Fail	Comments
Mounting	PASS	--
Field of View	PASS	--
Surface Area	PASS	--
Reflectance	PASS	--
Unit Magnification	PASS	--

C. Outside Driver Side Mirror #5 - Convex

Requirements	Pass/Fail	Comments
Mounting	PASS	--
Field of View	PASS	--
Reflectance	PASS	--

D. Outside Passenger Side Mirror #6 - Convex

Requirements	Pass/Fail	Comments
Mounting	PASS	--
Field of View	PASS	--
Reflectance	PASS	--

FMVSS 111SB, SCHOOL BUS REARVIEW MIRRORS
TEST SUMMARY DATA SHEET…continued

Test Vehicle: **Girardin 2005 Minibus** NHTSA No.: **C50902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **1/10/05**

System B Mirrors

E. Mirror #1 – Driver Side Front – Cross View

Requirements	Pass/Fail	Comments
Mounting	PASS	--
Field of View	PASS	--
Overlap with System A	PASS	--
Distance to Eye Point	PASS	--
No Surface Discontinuities	PASS	--
Surface Area	PASS	--
If Convex – Radius of Curvature	PASS	--
Radius of Curvature Label	PASS	--
Arc Separation	PASS	--
Reflectance	PASS	--

F. Passenger Side Front Mirror #2 – Cross View

Requirements	Pass/Fail	Comments
Mounting	PASS	--
Field of View	PASS	--
Overlap with System A	PASS	--
Distance to Eye Point	PASS	--
No Surface Discontinuities	PASS	--
Surface Area	PASS	--
If Convex – Radius of Curvature	PASS	--
Radius of Curvature Label	PASS	--
Arc Separation	PASS	--
Reflectance	PASS	--

SECTION 3
COMPLIANCE TEST DATA

FMVSS 111SB – DATA SHEET 1
SCHOOL BUS INSPECTION AND IDENTIFICATION

Test Vehicle: **Girardin 2005 Minibus** NHTSA No.: **C50902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **1/10/05**

GENERAL VEHICLE IDENTIFICATION

Final Stage Manufacturer	Girardin	Date of Mfg.	09/04
Chassis Manufacturer	Ford	Date of Mfg.	08/04
Seating Capacity (including driver)	19	GVWR (kg)	4354
VIN No.	1FDSE35L85HA02436	GAWR Front (kg)	2086
		GAWR Rear (kg)	2759

DESCRIPTION OF MIRRORS

Mirror No.	Type			Description	Manufacturer
	Unit Mag	Convex	Cross View		
1			X	Driver Side	Rosco Mirror
2			X	Passenger Side	
3	X			Driver Side	
4	X			Passenger Side	
5		X		Driver Side	
6		X		Passenger Side	

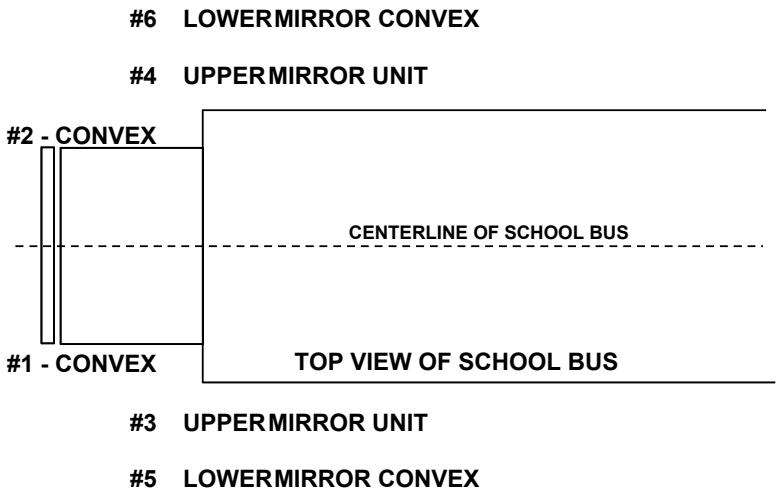
Recorded By: Brian Roach

Approved By: _____ Date: January 10, 2005

FMVSS 111SB – DATA SHEET 2
MIRROR LOCATION AND FIELD OF VIEW

Test Vehicle: **Girardin 2005 Minibus** NHTSA No.: **C50902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **1/10/05**

MIRROR DIAGRAM



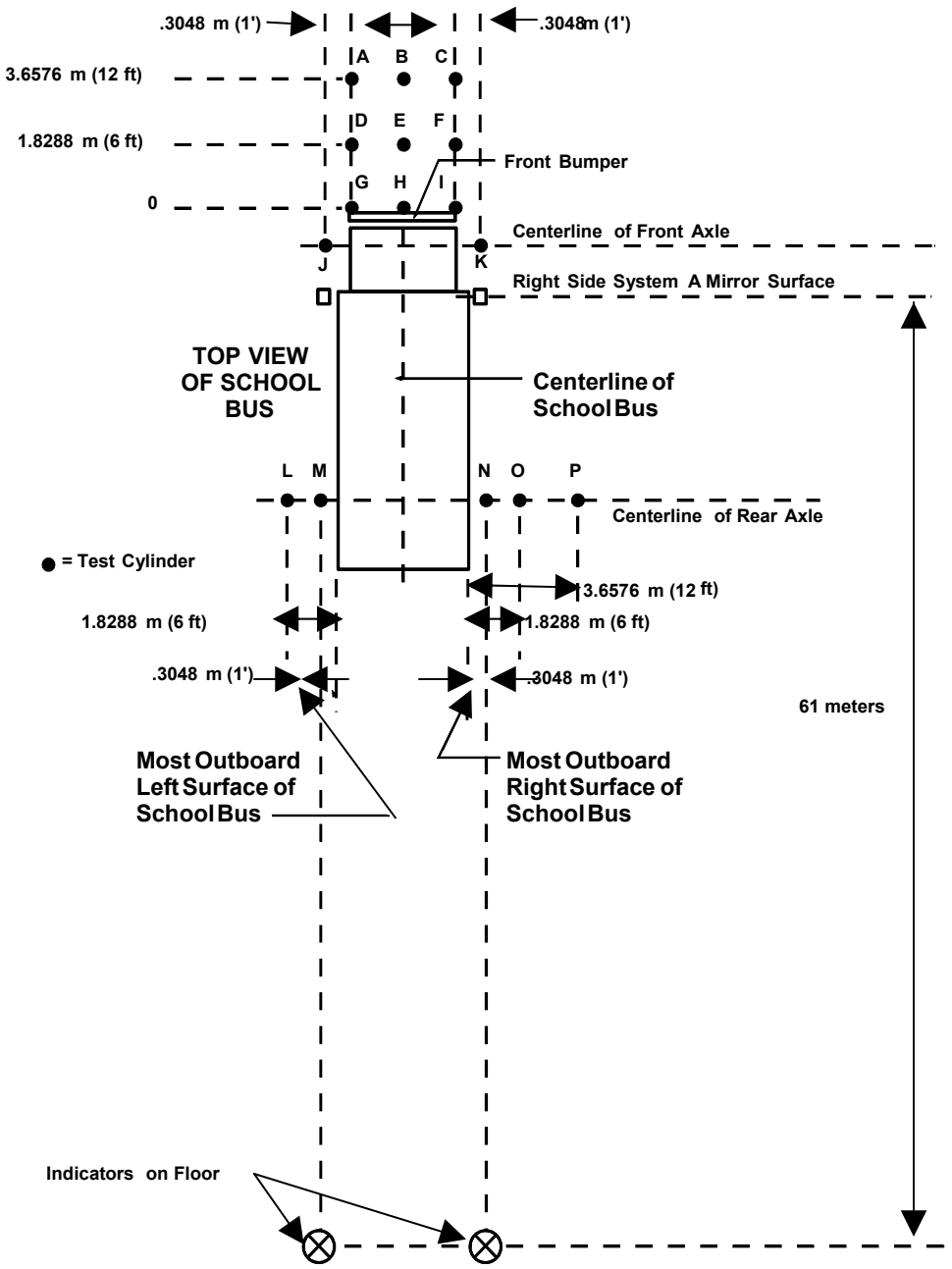
MIRROR NO.	TYPE	MIRROR SYSTEM	CYLINDERS VIEWED **(entire top surface)**
1	CROSS VIEW/CONVEX	B	B,C,E,F,H,I,J,L,M
2	CROSS VIEW/CONVEX	B	A,D,E,F,G,H,I,K,N,O,P
3	UNIT MAGNIFICATION	A	61 Meter INDICATOR
4	UNIT MAGNIFICATION	A	61 Meter INDICATOR
5	CONVEX	A	L,M
6	CONVEX	A	N,O

SEE FIGURE ON NEXT PAGE

FMVSS 111SB – DATA SHEET 2…continued
MIRROR LOCATION AND FIELD OF VIEW

Test Vehicle: **Girardin 2005 Minibus** NHTSA No.: **C50902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **1/10/05**

MIRROR LOCATIONS OF TEST CYLINDERS AND INDICATOR



NOTES:
1. The cylinders shall be a color which provides a high contrast with the surface on which the bus is parked (S13.1).
2. The cylinders are 0.3048 m high and 0.3048 m in diameter, except for cylinder P which is 0.9144 m high and 0.3048 m in diameter.

FMVSS 111SB DATA SHEET 2…continued
MIRROR LOCATION AND FIELD OF VIEW

Test Vehicle: **Girardin 2005 Minibus** NHTSA No.: **C50902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **1/10/05**

SYSTEM A AND DIRECT VISION

System A Mirrors	Pass/Fail
Entire top surface of cylinder N and the indicator 61 meters (200 feet) rearward of the mirror surface be viewed in the photograph	PASS
Entire top surface of cylinder M and indicator 61 meters (200 feet) rearward of the mirror surface be viewed in the photograph	PASS
Which test cylinders A through P can not be photographed directly from the driver's eye location within the semi-circle viewing area using no mirror system:	A,B,C,D,E,F,G,H, I,J,K,L,M,N,O,P

SYSTEM B ARC'S AND DISTANCE

Mirror Number (from data sheet 2)	Mirror Location	Distance from the Driver's Eye Point to the Center of the Mirror (cm)	3 Minutes of Arc (cm)	9 Minutes of Arc (cm)
#1	Left Front	206	0.180	--
#2	Right Front	255	0.223	0.668

Distance determined in column 3 multiplied by 0.000873 yield 3 minutes of arc, for column 4, for that mirror as viewed from the driver's eye point; the distances determined in column 3 multiplied by 0.002618 yield 9 minutes of arc, for column 5, for that mirror as viewed from the driver's eye point. The minimum distance for any system B mirror between the driver's eye point and the center of the mirror is more than 95 centimeters:

Requirements	Distance	Pass/Fail
Distance between center of System B mirror #1 and driver's eye point	206 cm	PASS
Distance between center of System B mirror #2 and driver's eye point	255 cm	PASS

Recorded By:_____

Approved By: Michael Janosz Date: January 10, 2005

FMVSS 111SB DATA SHEET 3
FIELD OF VIEW TEST – PHOTOGRAPHS System B

Test Vehicle: **Girardin 2005 Minibus** NHTSA No.: **C50902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **1/10/05**

Requirements		Pass/Fail
All test cylinders with entire top surface not directly visible from the driver's semi-circle eye location are able to be viewed with System B mirrors from the driver's semi-circle location:		PASS
All test cylinders with entire top surface not directly visible from the driver's semi-circle eye location but the image can be viewed with System B mirrors. The image is separated for the edge of the effective mirror surface of the mirror providing that image by a distance of not less than 3 minutes of arc:		PASS
If the entire top surface of test cylinder P is not directly visible from the driver's semi-circle eye location, the image can be viewed with System B mirrors from the driver's semi-circle eye location, where the angular size of the shortest dimension of that cylinder's image is not less than 3 minutes of arc, and the angular size of the longest dimension of that cylinder's image is not less than 9 minutes of arc:		PASS
Shortest arc length dimension	0.223 cm	
Longest arc length dimension	0.668 cm	
For each of the test cylinders whose entire top surface is not directly visible from the driver's eye location, System B provides a view of the ground that overlaps with the view of the ground provided by System A.		PASS

Recorded By:_____

Approved By:_____ Date: January 10, 2005

FMVSS 111SB DATA SHEET 4
MOUNTING ADEQUACY TEST

Test Vehicle: **Girardin 2005 Minibus** NHTSA No.: **C50902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **1/10/05**

MOUNTING SUPPORT OF ALL MIRRORS

Mirror No. (from data sheet 2)	Type	System	Stable Support Yes/No
1	Cross View/Convex	B	Yes
2	Cross View/Convex	B	Yes
3	Unit Magnification	A	Yes
4	Unit Magnification	A	Yes
5	Convex	A	Yes
6	Convex	A	Yes

Requirements	Pass/Fail
Outside mirrors free of sharp points or edges that could contribute to pedestrian injury	PASS
System B mirrors have no discontinuities in the slope of the surface of the mirror	PASS

Recorded By:_____

Approved By:_____ Date: January 10, 2005

FMVSS 111SB DATA SHEET 5
REFLECTANCE TEST – ALL MIRRORS

Test Vehicle: **Girardin 2005 Minibus** NHTSA No.: **C50902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **1/10/05**

Mirror No.	Type	Light meter reading from calibration (FC)	Light meter reading from light reflected by mirror (FC)	Pass/Fail	Observations
1	Crossview/Convex	67	53	PASS	
2	Crossview/Convex	71	55	PASS	
3	Unit	69	50	PASS	
4	Unit	67	51	PASS	
5	Convex	69	52	PASS	
6	Convex	67	49	PASS	

Note: Reflectance $_{(example)}$ = (Reflected Reading) 53 / (Cal Reading) 67 = 0.791 x 100 = 79%
Minimum Requirement = 35 percent

Mirror No.	Type	Reflectance	Requirement
1	Crossview/Convex	79%	>35%
2	Crossview/Convex	77%	>35%
3	Unit	72%	>35%
4	Unit	76%	>35%
5	Convex	75%	>35%
6	Convex	73%	>35%

Recorded By:_____

Approved By:_____ Date: January 10, 2005

FMVSS 111SB DATA SHEET 6
UNIT MAGNIFICATION/CONVEX MIRROR TEST – ALL MIRRORS

Test Vehicle: **Girardin 2005 Minibus** NHTSA No.: **C50902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **1/10/05**

CONVERSION DATA TABLE FROM SPHEROMETER DIAL READING TO RADIUS OF CURVATURE

MIRROR NO. 1 (CONVEX)

Test Postion	Dial Reading (inches)	Radius of Curvature (mm)	Deviation between the Average Radius of Curvature and the Test Position Radius of Curvature (mm)	Precent Deviation from the Average Radius of Curvature
1	0.05285	135.8	46.4	25.5%
2	0.03490	205.1	-22.9	-12.6%
3	0.02520	283.8	-101.6	-55.7%
4	0.05015	143.1	39.2	21.5%
5	0.05090	141.0	41.3	22.6%
6	0.03580	200.0	-17.7	-9.7%
7	0.04960	144.7	37.6	20.6%
8	0.03140	227.9	-45.7	-25.1%
9	0.05375	133.6	48.7	26.7%
10	0.03450	207.5	-25.3	-13.9%
Average Radius of Curvature - The Summation of the Radius of Curvature readings divided by 10 **182.3mm**			Greatest Percent Deviation from the Average Radius of Curvature **55.7%**	

MIRROR NO. 2 (CONVEX)

Test Postion	Dial Reading (inches)	Radius of Curvature (mm)	Deviation between the Average Radius of Curvature and the Test Position Radius of Curvature (mm)	Precent Deviation from the Average Radius of Curvature
1	0.05325	134.8	46.1	25.5%
2	0.03500	204.6	-23.7	-13.1%
3	0.02670	267.9	-87.0	-48.1%
4	0.05080	141.3	39.6	21.9%
5	0.05085	141.1	39.8	22.0%
6	0.03565	200.8	-19.9	-11.0%
7	0.05025	142.8	38.1	21.1%
8	0.03015	237.3	-56.4	-31.2%
9	0.05290	135.7	45.2	25.0%
10	0.03535	202.5	-21.6	-12.0%
Average Radius of Curvature - The Summation of the Radius of Curvature readings divided by 10 **180.9mm**			Greatest Percent Deviation from the Average Radius of Curvature **48.1%**	

FMVSS 111SB DATA SHEET 6…continued
UNIT MAGNIFICATION/CONVEX MIRROR TEST – ALL MIRRORS

Test Vehicle: **Girardin 2005 Minibus** NHTSA No.: **C50902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **1/10/05**

CONVERSION DATA TABLE FROM SPHEROMETER DIAL READING TO RADIUS OF CURVATURE

MIRROR NO. 3 (UNIT MAGNIFICATION)

Test Postion	Dial Reading (inches)	Radius of Curvature (mm)	Deviation between the Average Radius of Curvature and the Test Position Radius of Curvature (mm)	Precent Deviation from the Average Radius of Curvature
1	0.000	N/A	N/A	N/A
2	0.000	N/A	N/A	N/A
3	0.000	N/A	N/A	N/A
4	0.000	N/A	N/A	N/A
5	0.000	N/A	N/A	N/A
6	0.000	N/A	N/A	N/A
7	0.000	N/A	N/A	N/A
8	0.000	N/A	N/A	N/A
9	0.000	N/A	N/A	N/A
10	0.000	N/A	N/A	N/A
Average Radius of Curvature - The Summation of the Radius of Curvature readings divided by 10 **N/A**			Greatest Percent Deviation from the Average Radius of Curvature **N/A**	

MIRROR NO. 4 (UNIT MAGNIFICATION)

Test Postion	Dial Reading (inches)	Radius of Curvature (mm)	Deviation between the Average Radius of Curvature and the Test Position Radius of Curvature (mm)	Precent Deviation from the Average Radius of Curvature
1	0.000	N/A	N/A	N/A
2	0.000	N/A	N/A	N/A
3	0.000	N/A	N/A	N/A
4	0.000	N/A	N/A	N/A
5	0.000	N/A	N/A	N/A
6	0.000	N/A	N/A	N/A
7	0.000	N/A	N/A	N/A
8	0.000	N/A	N/A	N/A
9	0.000	N/A	N/A	N/A
10	0.000	N/A	N/A	N/A
Average Radius of Curvature - The Summation of the Radius of Curvature readings divided by 10 **N/A**			Greatest Percent Deviation from the Average Radius of Curvature **N/A**	

FMVSS 111SB DATA SHEET 6…continued
UNIT MAGNIFICATION/CONVEX MIRROR TEST – ALL MIRRORS

Test Vehicle: **Girardin 2005 Minibus** NHTSA No.: **C50902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **1/10/05**

CONVERSION DATA TABLE FROM SPHEROMETER DIAL READING TO RADIUS OF CURVATURE

MIRROR NO. 5 (CONVEX)

Test Postion	Dial Reading (inches)	Radius of Curvature (mm)	Deviation between the Average Radius of Curvature and the Test Position Radius of Curvature (mm)	Precent Deviation from the Average Radius of Curvature
1	0.01365	523.5	-19.8	-3.9%
2	0.01460	489.5	14.3	2.8%
3	0.01410	506.8	-3.1	-0.6%
4	0.01440	496.3	7.5	1.5%
5	0.01420	503.3	0.5	0.1%
6	0.01410	506.8	-3.1	-0.6%
7	0.01440	496.3	7.5	1.5%
8	0.01410	506.8	-3.1	-0.6%
9	0.01425	501.5	2.3	0.4%
10	0.01410	506.8	-3.1	-0.6%
Average Radius of Curvature - The Summation of the Radius of Curvature readings divided by 10 **503.8mm**			Greatest Percent Deviation from the Average Radius of Curvature **3.9%**	

MIRROR NO. 6 (CONVEX)

Test Postion	Dial Reading (inches)	Radius of Curvature (mm)	Deviation between the Average Radius of Curvature and the Test Position Radius of Curvature (mm)	Precent Deviation from the Average Radius of Curvature
1	0.01385	516.0	-15.8	-3.2%
2	0.01435	498.0	2.1	0.4%
3	0.01420	503.3	-3.1	-0.6%
4	0.01445	494.6	5.6	1.1%
5	0.01440	496.3	3.9	0.8%
6	0.01450	492.9	7.3	1.5%
7	0.01475	484.5	15.6	3.1%
8	0.01430	499.7	0.4	0.1%
9	0.01370	521.6	-21.5	-4.3%
10	0.01445	494.6	5.6	1.1%
Average Radius of Curvature - The Summation of the Radius of Curvature readings divided by 10 **500.1mm**			Greatest Percent Deviation from the Average Radius of Curvature **4.3%**	

FMVSS 111SB DATA SHEET 6…continued
UNIT MAGNIFICATION/CONVEX MIRROR TEST – ALL MIRRORS

Test Vehicle: **Girardin 2005 Minibus** NHTSA No.: **C50902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **1/10/05**

UNIT MAGNIFICATION IN SYSTEM A

Requirements	Pass/Fail
At least one System A Mirror on the left and right sides of the bus is unit magnification -0 Radius of Curvature	PASS

AVERAGE RADIUS OF CURVATURE
OF CONVEX MIRRORS USED IN SYSTEM B

Mirror No.	Radius of Curvature	If needed, wording printed properly* Pass/Fail
1	182.3 mm	PASS
2	180.9 mm	PASS

* If any of the Convex Mirrors in System B have an average radius of curvature less than 889 mm, then the following words must be printed on a label in type face and color that are clear and conspicuous to the driver:

"USE CROSS VIEW MIRRORS TO VIEW PEDESTRIANS WHILE BUS IS STOPPED. DO NOT USE THESE MIRRORS TO VIEW TRAFFIC WHILE BUS IS MOVING, IMAGES IN SUCH MIRRORS DO NOT ACCURATELY SHOW ANOTHER VEHICLE'S LOCATION."

Recorded By:_____

Approved By:_____ Date: January 10, 2005

FMVSS 111SB DATA SHEET 7
MIRROR REFLECTIVE SURFACE AREA TEST
SYSTEM A & B

Test Vehicle: **Girardin 2005 Minibus** NHTSA No.: **C50902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **1/10/05**

DATA TABLE FOR SURFACE AREA

System A Mirrors Mirror No.	Area	Requirement Min. 323 cm²	Pass/Fail
3	380 cm^2	323 cm^2	PASS
4	380 cm^2	323 cm^2	PASS
System B Mirrors Mirror No.	Area	Requirement Min. 258 cm²	Pass/Fail
1	570 cm^2	258 cm^2	PASS
2	570 cm^2	258 cm^2	PASS

Recorded By:_____

Approved By: Michael Janosz Date: January 10, 2005

SECTION 4

INSTRUMENTATION AND EQUIPMENT LIST

Test Vehicle: **Girardin 2005 Minibus** NHTSA No.: **C50902**
Test Lab: **MGA Research-Wisconsin Operations** Test Date: **1/10/05**

	Digital Caliper	Light Meter	Tape Measure	Spherometer
Make	Starrett	AEMC	Stanley	MGA
Model	721	CA813	Powerlock	001
Serial # (s)	00410129	04L1017Y	SN173	001
Range	0 to 150 mm	2000fc, 2000lux	0-8 m	2.25×10^{13} $(cm * Hz^{1/2}) \div W$
Accuracy	0.01 mm	0.0 fc or 0.01 lux	1 mm	1.1×10^{-13} $W/H^{1/2}$
Cal. Date	8/26/04	9/27/04	9/1/04	Daily when used
Cal. Due Date	2/26/05	3/27/05	3/1/05	N/A

SECTION 5
PHOTOGRAPHS

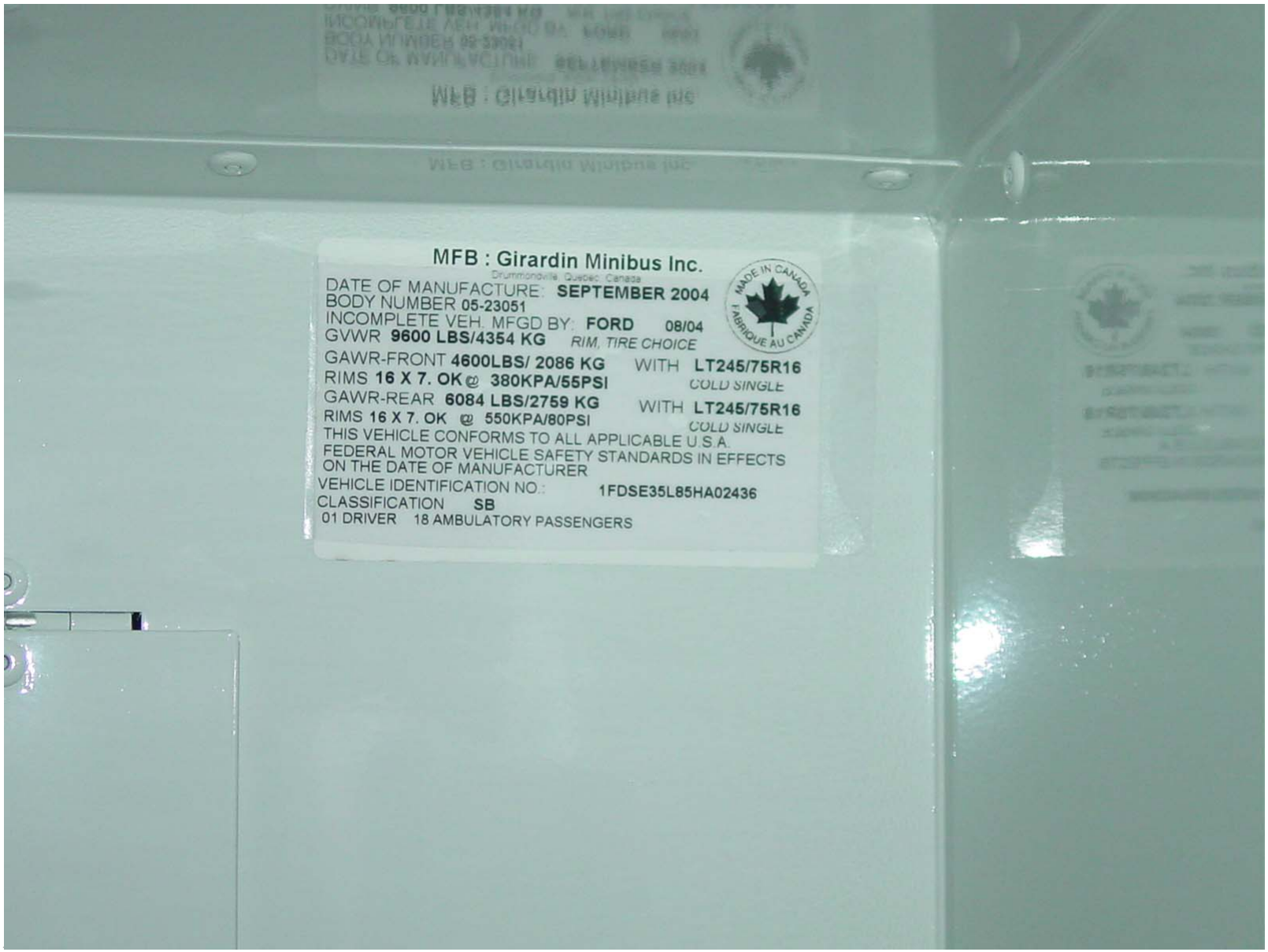
TABLE OF PHOTOGRAPHS

Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**

Three-Quarter Left Front View of School Bus

Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**

Three-Quarter Left Rear View of School Bus



Close-up View of Certification and Tire Placard

Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**

Right Front Cross View Mirror and Mounting

Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**

Passenger Side Rearview Mirror and Mounting

Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**

Left Front Cross View Mirror and Mounting

Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**

Driver Side Rearview Mirror and Mounting

Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**

Field of View Instrument Setup

Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**

Mirror #2 System B Field of View

Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**

Mirror #1 System B Field of View

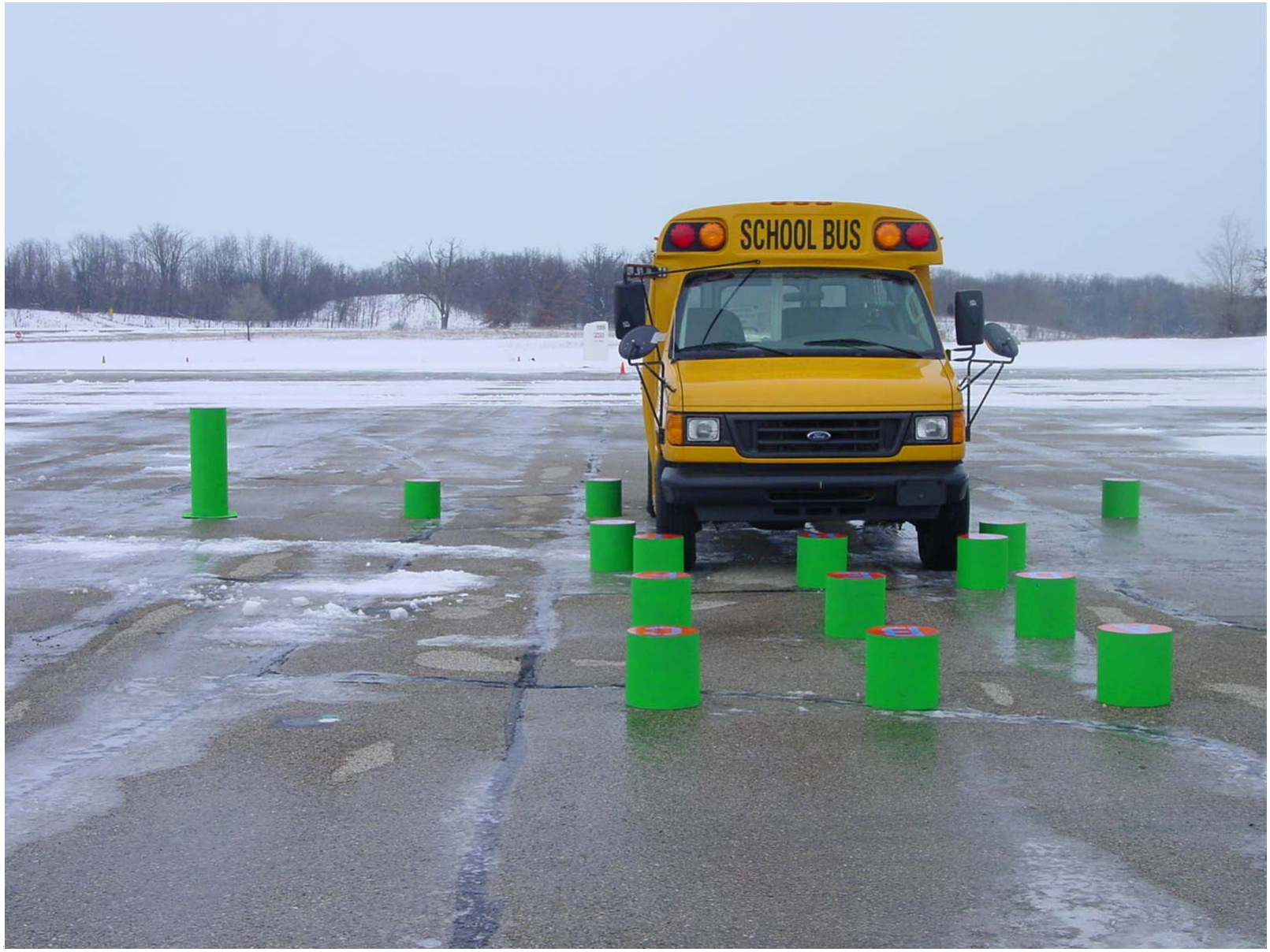
Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**

Mirror #4 and #6 System A Field of View

Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**

Mirror #3 and #5 System A Field of View

Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**

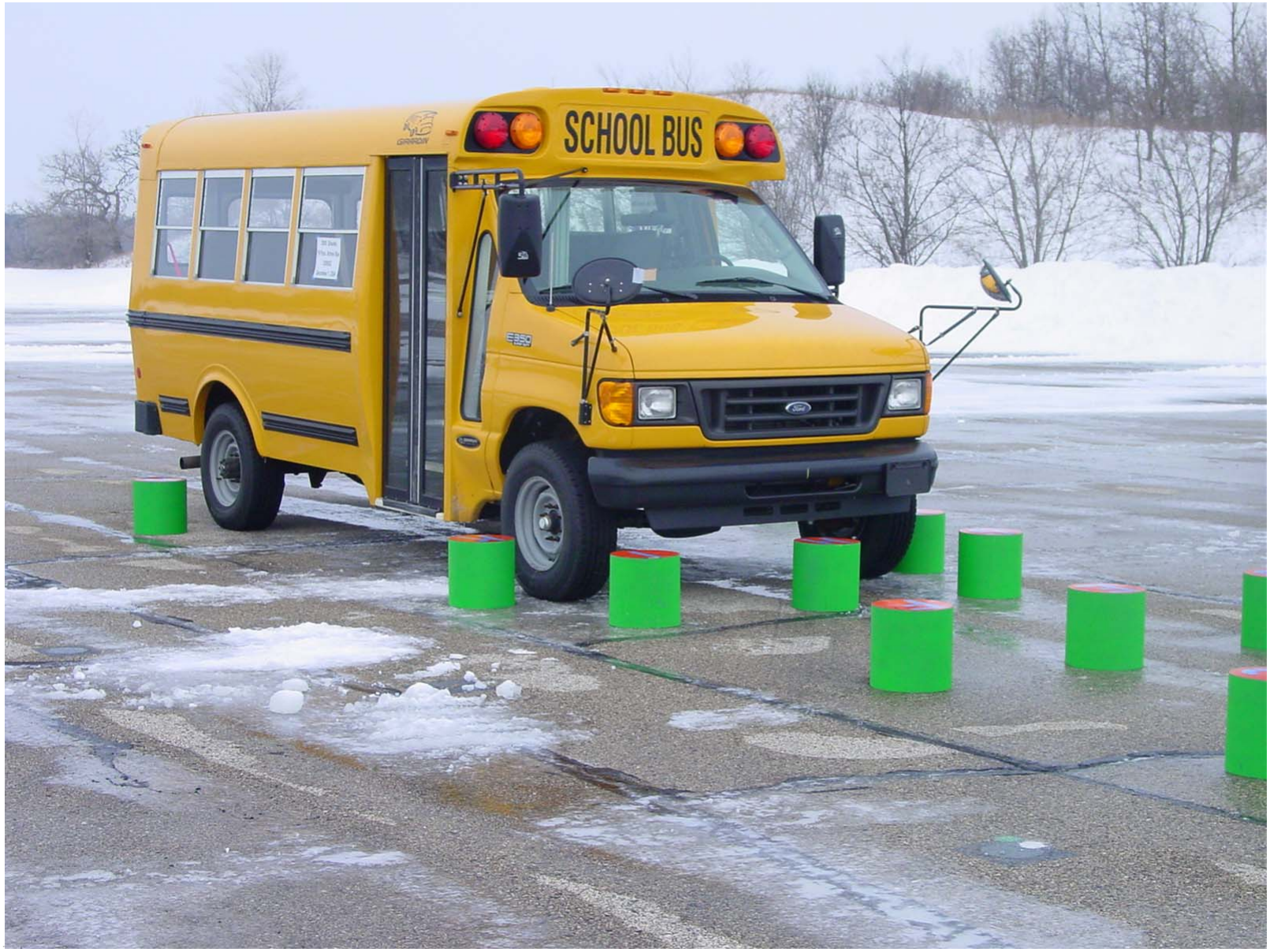


View of Cone Setup from Front

Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**

Three-Quarter Left Front View of Cone Setup

Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**



Three-Quarter Right Front View of Cone Setup

Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**

Label for Cross View Mirror Warning

Test Vehicle: **2005 Girardin Minibus**
Procedure: **FMVSS 111** NHTSA No.: **C50902**

Reflectance Test Setup