

APPENDIX A

BRAKES

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- A3 Tire wear measurement information
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Air Brake System continued

[X] Air Brake Adjustment

Equipment: Steel scale and feeler gauge or equivalent.

Procedure:

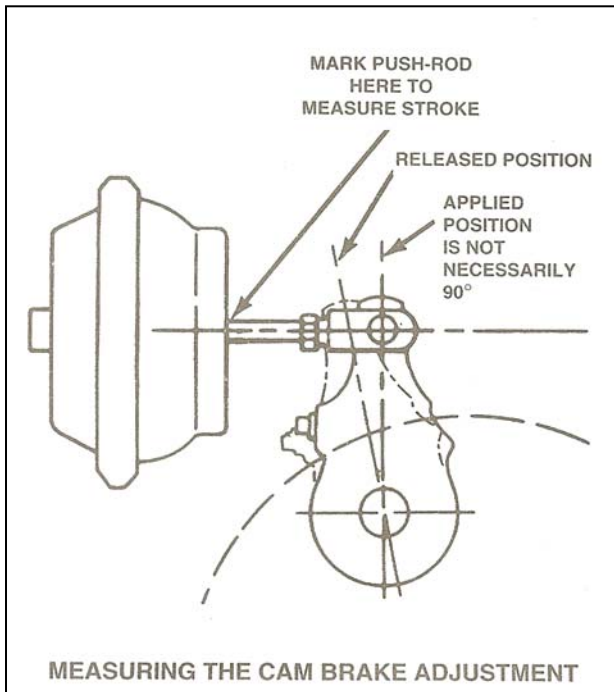
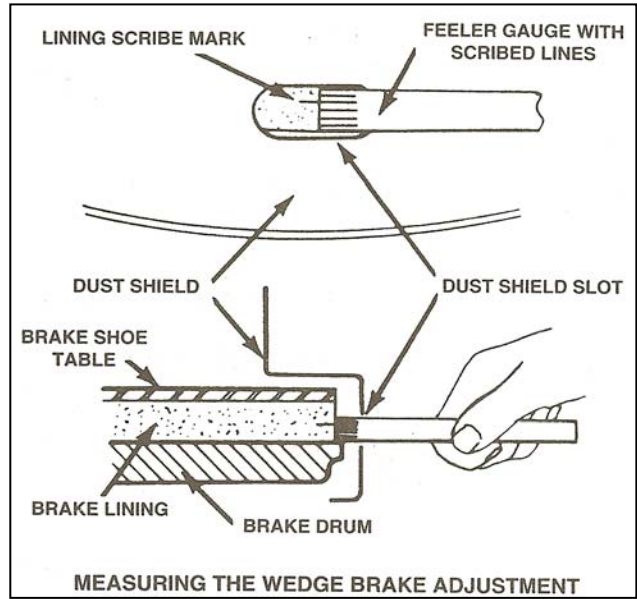
- On vehicles equipped with Cam brakes, mark each brake chamber push rod at the face of the brake chamber with the brakes released. Apply the air brakes fully, minimum air pressure of 85 psi, and measure the distance the push rod travels from the face of the chamber to the mark previously made when the brakes were released. This measurement is the push-rod stroke (See Table).

- On vehicles equipped with wedge brakes, remove the inspection hole cover at each dust shield and with the brakes released, scribe a line on the edge of the brake lining. Apply the air brakes fully and measure the distance the brake lining travels.

(See Figures)

Reject Vehicle if:

- For Cam brakes, the push-rod travel exceeds the maximum stroke listed in Table.
- For wedge brakes, there is more than 1/16" brake shoe travel.



(Dimensions in Inches)			
Type	Effective Area (Sq. In.)	Outside Diameter' Inches	Maximum Stroke Inches"
BOLT TYPE BRAKE CHAMBER DATA			
A	12	6 15/16	1 3/8
B	24	9 3/16	1 3/4
C	16	8 1/16	1 3/4
D	6	5 1/4	1 1/4
E	9	6 3/16	1 3/8
F	36	11	2 1/4
G	30	9 7/8	2
ROTOCHAMBER DATA			
9	9	4 9/32	1 1/2
12	12	4 13/16	1 1/2
16	16	5 13/32	2
20	20	5 15/16	2
24	24	6 13/32	2
30	30	7 1/16	2 1/4
36	36	7 5/8	2 3/4
50	50	8 7/8	3
CLAMP TYPE BRAKE CHAMBER DATA			
6	6	4 1/2	1 1/4
9	9	5 1/4	1 3/8
12	12	5 11/16	1 3/8
16	16	6 3/8	1 3/4
20	20	6 25/32	1 3/4
24	24	7 7/32	1 3/4(1)
30	30	8 3/32	2
36	36	9	2 1/4
Dimensions listed do not include capscrew head projections for rotochambers and bolt clamp projections for clamp type brake chambers . •• The same limits that apply to manual adjusters apply to automatic adjusters. (1) 2" for long stroke design.			
BENDIX WESTINGHOUSE			
DD2			2
DD3			2
CAM BRAKES - PUSH-ROD TRAVEL LIMITS			

3.

SERVICE BRAKE ROAD TESTS

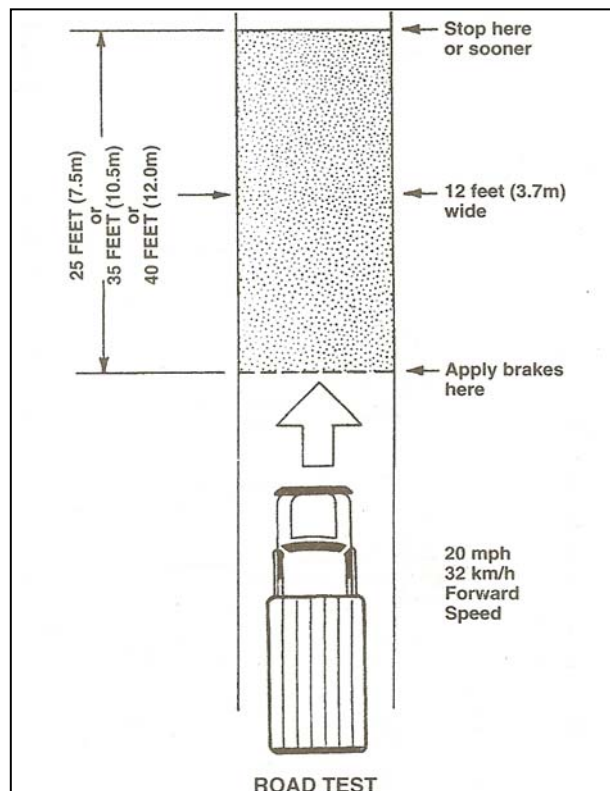
When road testing the stopping ability of heavy vehicles and combinations of vehicles, extreme care must be taken in order to prevent possible skidding, load shifting, jackknifing, etc. Road tests, using either a decelerometer or the measurement of stopping distance, should be done on a level, dry, hard, smooth pavement free from oil, grease or loose dirt. - Tires must be properly inflated.

[X] Stopping Distance Method *Equipment:*

Measuring tape or pre-marked lane. Procedure: At a speed of 20 mph (32 km / h), apply service brake firmly. Observe whether vehicle comes to a smooth stop within prescribed distance without pulling to right or left beyond limits.

Reject Vehicle: If it swerves enough for any part to leave a 12 foot lane. If the vehicle fails to stop within the required distance, usually:

- 25 feet - Vehicles with GVWR of 10,000 pounds or less.
- 35 feet - Single unit vehicles with GVWR of more than 10,000 pounds (except truck-tractor).
- 40 feet - Combination vehicles and truck-tractors with GVWR of more than 10,000 pounds.

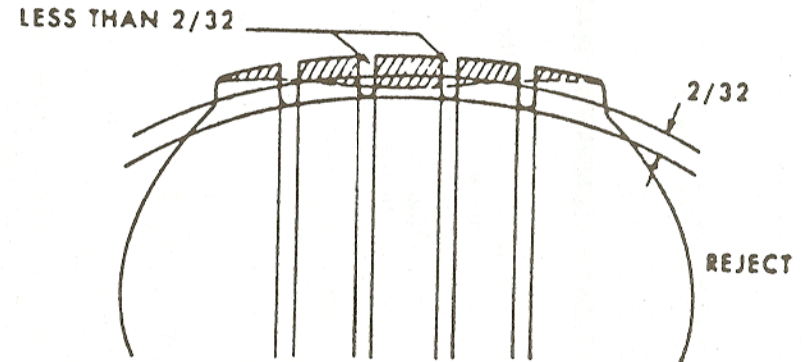
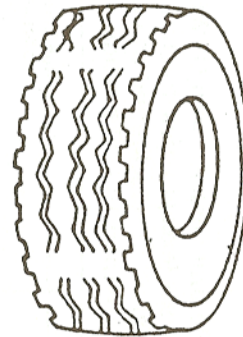
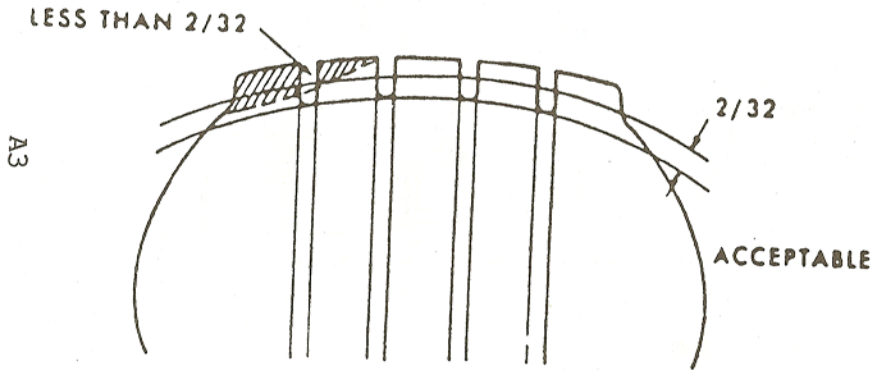


ADDITIONAL TIRE WEAR MEASUREMENT INFORMATION

ACCEPTABLE
2/32 rear tires 4/32 front tires
Minimum tire tread depth

UNACCEPTABLE
all tires on vehicle

UNACCEPTABLE
less than 2/32 rear tires -4/32 front tires



NOTE Tire inflation pressure should be checked against the vehicle manufacturer's recommendations (in owners manual or on tire placard). Tire pressures lower or higher than recommended are NOT cause for rejection but the vehicle owner should be advised to correct the condition at the earliest opportunity.

WHEEL BEARINGS STEERING LINKAGE

[X] Loose Wheel Bearings

Equipment: Floor jack or hoist, rule or gauge.

Procedure: With front end of vehicle lifted properly, push pads away from rotor on disc brakes, and grab front tire at top and bottom, rock vigorously in and out and record movement. Wheel bearing looseness is detected by the relative movement between the brake drum or disc and the backing plate or splash shield.

Reject Vehicle: If relative movement between drum and backing plate (disc and splash shield) is more than 1/8 inch (3mm) measured at the outer circumference of the tire for vehicles 10,000 lbs. GVWR or less or 1/4 inch (6.4mm) for vehicles more than 10,000 lbs. GVWR.

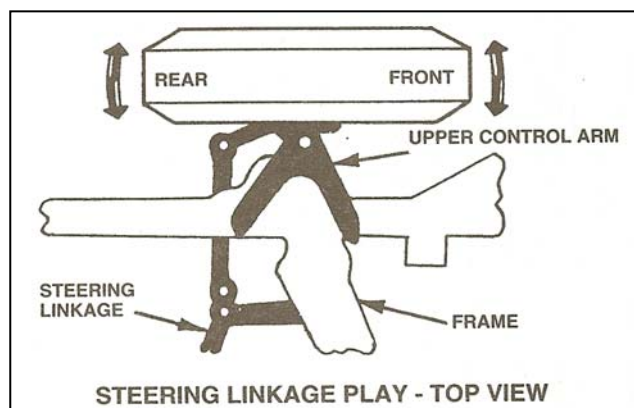
[X] Steering Linkage Play

Procedure:

- First eliminate all wheel bearing movement by applying service brake.
- With vehicle lifted as shown at left and wheels in straight ahead position, grasp front and rear of tire and attempt to move assembly right and left without moving the pitman arm.

Reject Vehicle: If measured total movement at front or rear of tire is greater than:

Wheel Size: 16 inches or less - 1/4 inch (6.5mm) 17 to 18 inches - 3/8 inch (9.5mm) Over 18 inches - 1/2 inch (13mm)



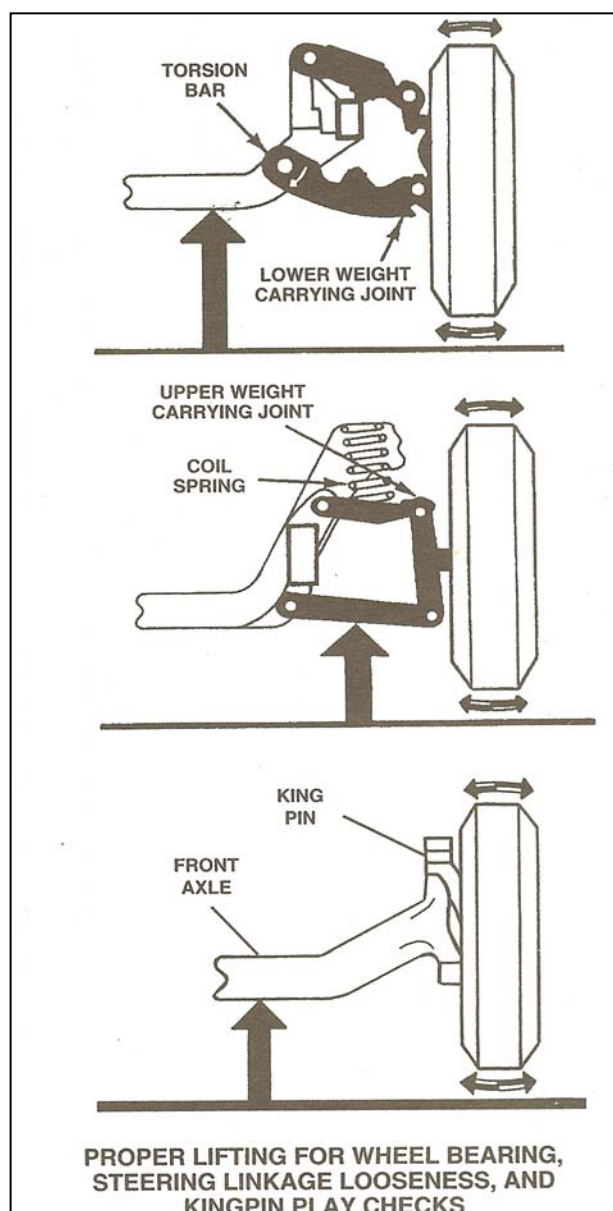
[X] Kingpin Play

Procedure:

- First eliminate all wheel bearing movement by applying service brake.
- With front end lifted as illustrated for inspecting wheel bearings, grasp the tire at the top and bottom and attempt to move in and out to detect looseness. A pry bar may be necessary on heavy wheels.
- Measure the movement at the top or bottom of the tire at the outer circumference.

Reject Vehicle: If measured movement at top or bottom of tire is greater than:

Wheel Size: 16 inches or less - 1/4 inch (6.5mm) 17 to 18 inches - 3/8 inch (9.5mm) Over 18 inches - 1/2 inch (13mm)



SECTION VII - BODY AND SHEET METAL

BODY ELEVATION

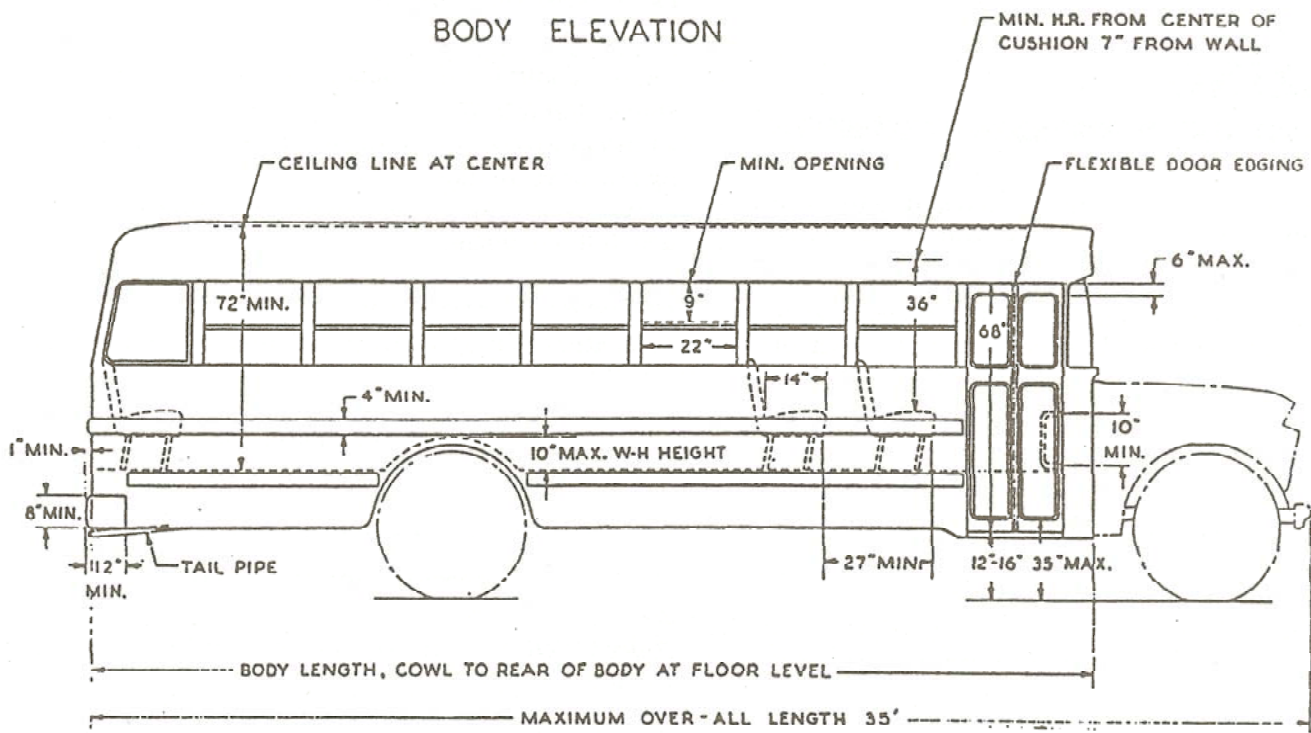


Fig. 1

BODY PLAN

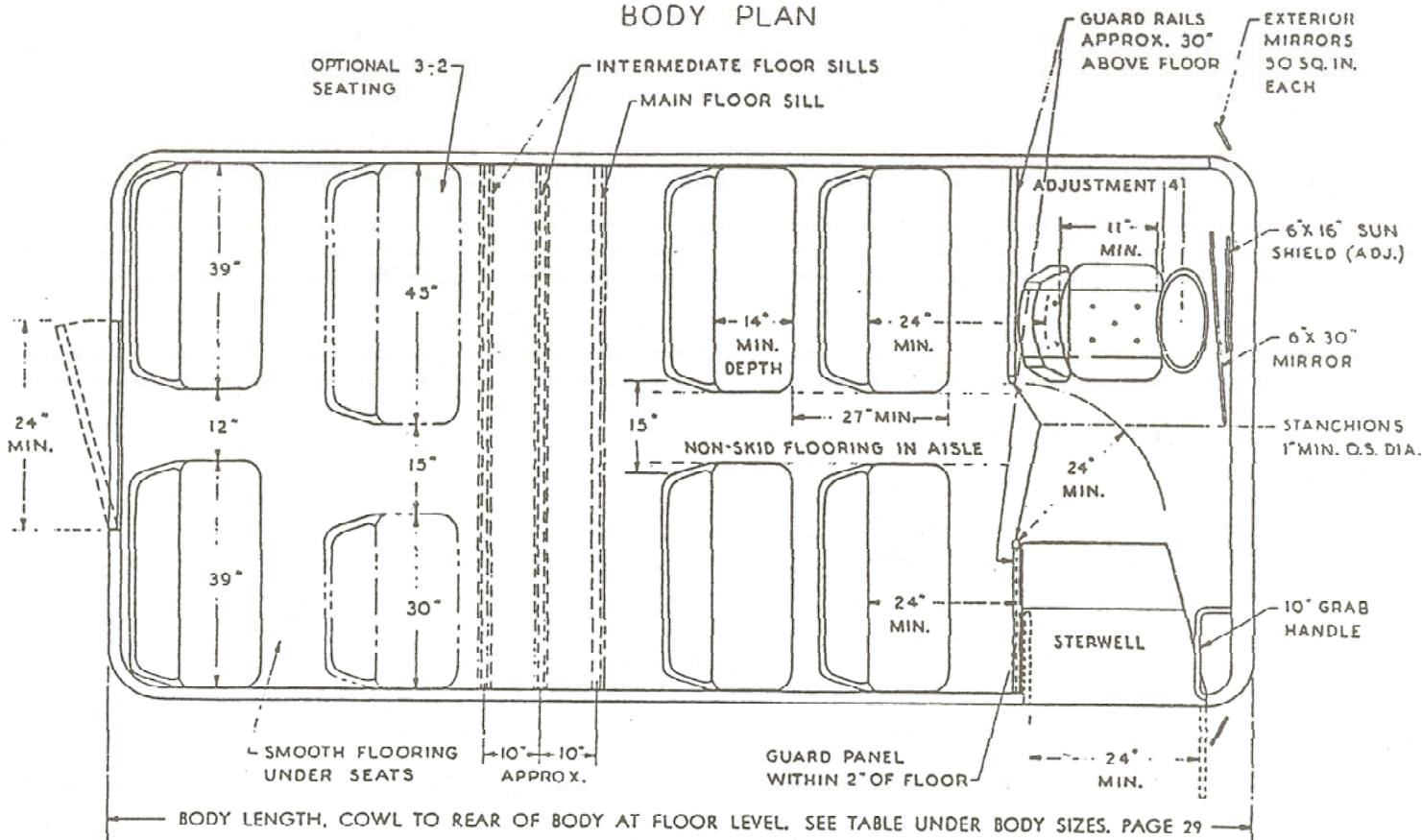


Fig. 2

From NEA Minimum Standards
for School Buses

VEHICLE GLAZING

Automotive safety glazing is marked with the manufacturer's trademark and the letters "AS" followed by a number from 1 through 11. Only ASI (or AS 1 0 - Bullet Resistant) may be used in the windshield. Safety glazing for 1966 and later models also has a glass manufacturer's model number or a DOT code number. See ADDITIONAL GLAZING INFORMATION for position numbers, discoloration areas and markings.

[X] Proper Markings

Procedure: Inspect glass for proper markings.

Reject Vehicle if:

- Improper or unmarked glazing materials are used for specific positions.
- Any materials other than specified materials are used.

[X] Left Front Window

Procedure: Inspect operation of window at driver's left. Window must open readily even though the vehicle has approved turn signals.

Reject Vehicle: If window at driver's left cannot be readily opened to permit arm signals.

[X] Cracks, Chips and Discoloration

Procedure: Inspect windshield and all windows for hazardous cracks, chips, sharp edges and discoloration of the glazing.

Advise Driver: If there are signs of the beginning of glazing discoloration. "Discoloration" in this case means anything which impairs the transparency of the glazing.

Reject Vehicle if:

- There are cracks, discoloration or scratches to the front, right, left or rear of the driver which interfere with his vision.
- Any windows are broken, have exposed sharp edges, or are cracked or separated allowing one piece of glass to be moved relative to another.
- The windshield has star chips (stone nicks) larger than 1% inches in diameter at any location in the unshaded portion of the diagram.
- The windshield, vent, or front door has discoloration at any location in the unshaded portion of the diagrams.
- The rear window is discolored so that the driver does not have a clear view 200 feet to the rear of the vehicle unless all rear vision is accomplished with outside rearview mirrors.

[X] Stickers, Tinting

Procedure: Inspect all glass for unauthorized material or conditions that obscure driver's vision.

Reject Vehicle if:

- Glazed surfaces contain any stickers not permitted by law or regulation.
- Surfaces contain unauthorized tinting materials which limits vision.

[X] Side Windows (School Bus Only)

Procedure: Inspect the operation of all full side windows.

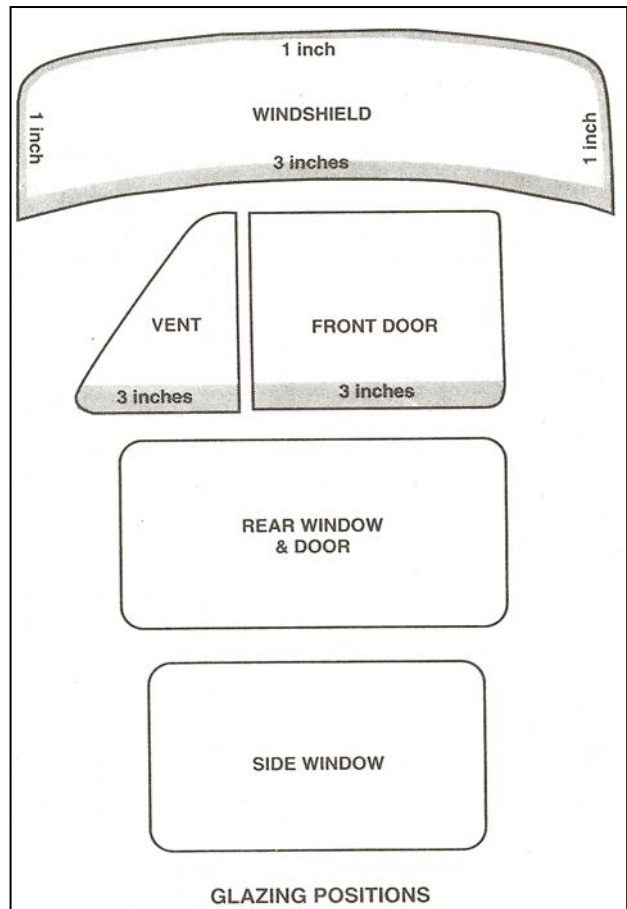
Reject Vehicle if:

- Any full side window cannot be readily opened.
- Any side window does not close properly.

[X] Edging (School Bus Only)

Procedure: Inspect for unbanded exposed edges of glass.

Reject Vehicle: If banding is missing, loose or broken.



Vehicle Glazing - Additional Information

Glazing Material Position Markings

The numbers on the chart below indicate the numerical markings following the letters AS, which should be found on glazing materials in the positions indicated. These numbers come from American National Standards Institute (ANSI) Glazing Standard Z26.1 (1977) and the meaning of each item as follows:

Position

Number Description

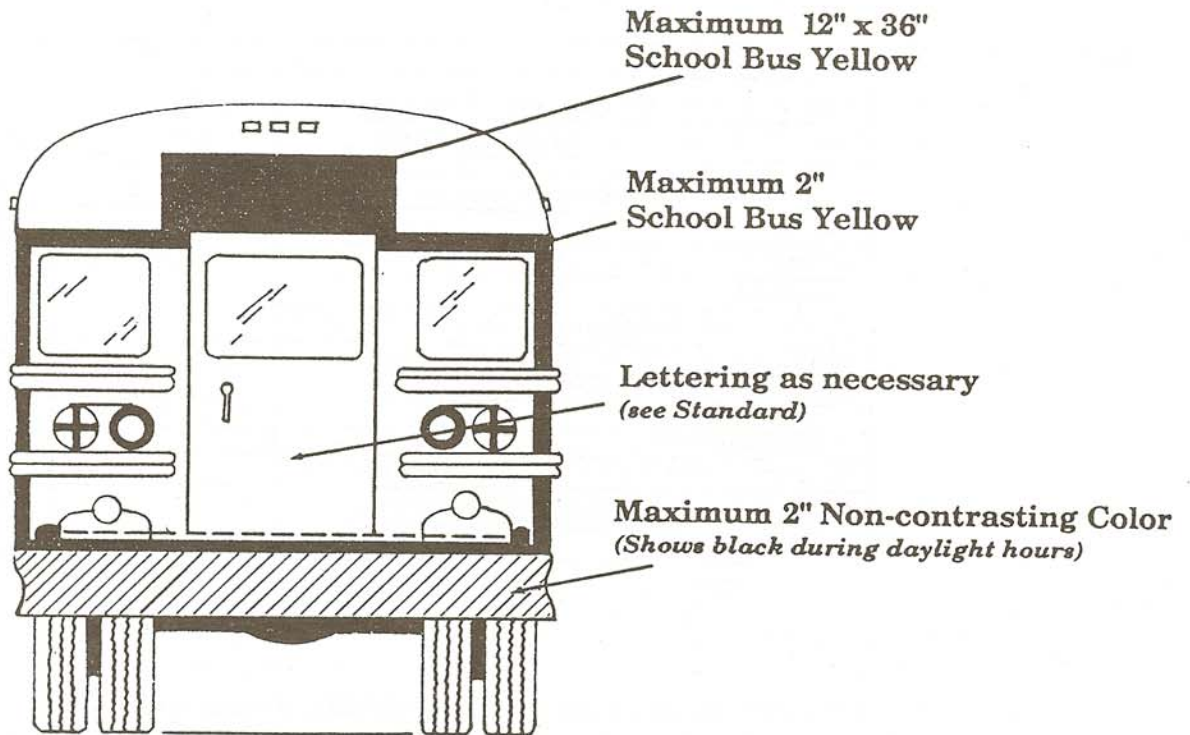
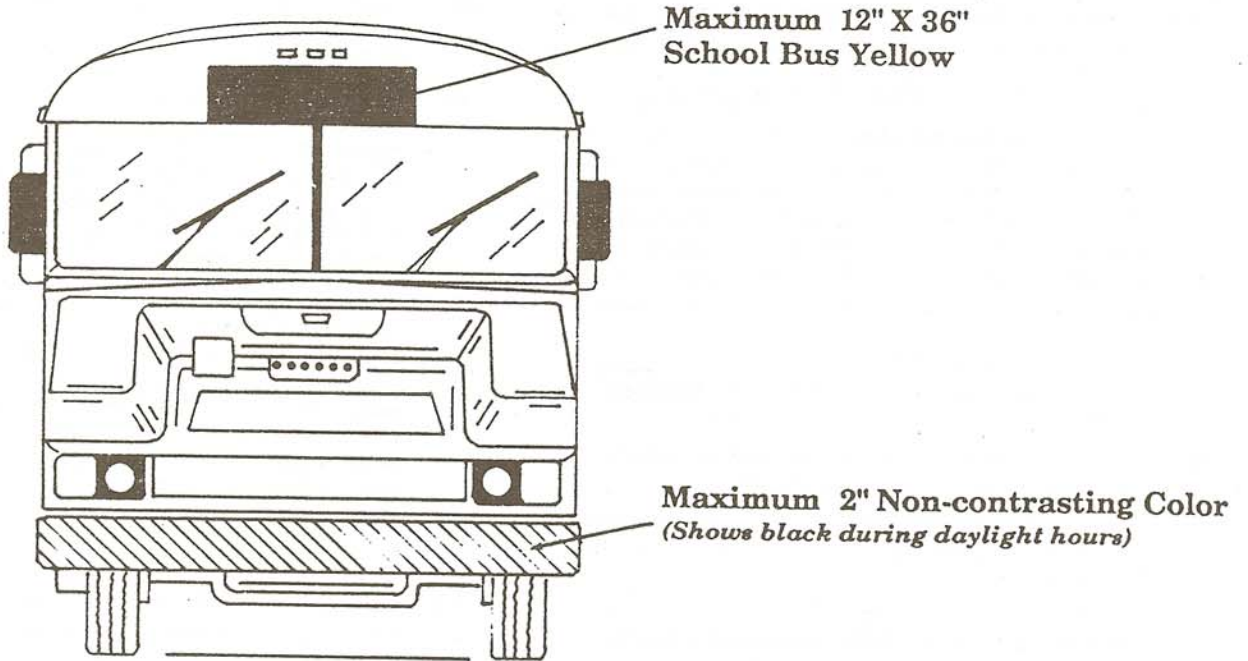
- 13. Safety Glazing Material for use anywhere in motor vehicle.
- 14. Safety Glazing Material for use anywhere in motor vehicle except windshields.
- 15. Safety Glazing Material for use anywhere in a motor vehicle except windshields and certain specified locations.
- 16. Safety Glazing Materials for use in motor vehicles only in the following specific locations.

- 5. Safety Glazing Materials for use in motor vehicles only in the following specific locations at levels not requisite for driving visibility.
- 6. Safety Glazing Material for use only in House- or Property-Carrying Trailers, in the rear windows of convertible passenger car tops, in windscreens for motorcycles, in flexible curtains or readily removable windows, or in ventilators used in conjunction with readily removable windows.
- 7. Safety Glazing Material for use only in House- or Property-Carrying Trailers and at levels not requisite for driving visibility in the rear window of convertible passenger car tops, in windscreens for motorcycles, in flexible curtains or readily removable windows, or in ventilators used in conjunction with readily removable windows.
- 8. Bullet Resistant Glass for use anywhere in motor vehicle.
- 9. Bullet Resistant Glass for use anywhere in motor vehicles except windshields.

GLAZING POSITION MARKINGS			
(This chart excerpted from ANSI Standard 226.1 Table AI)		Glazing Material Applicable When Marked With "AS" Designation Indicated Below	
		At Levels Requisite for Driving Visibility	
		At Levels Not Requisite for Driving Visibility*	
TRUCKS AND TRUCK TRACTORS	Windshields	1, 10	1*, 1a*
	Windows to Immediate Right and Left of Driver	1,2,10,11	1, 2, 3, 10, 11
	Rearmost Window if Used for Driving Visibility	1, 2, 8, 10, 11	1, 2, 3, 4, 5, 8, 9, 10, 11
	Glazing to Rear of Driver Where Other Means to Afford Visibility of the Highway is Provided	1, 2, 3, 4, 5, 8, 9, 10, 11	
	Folding Doors	1, 2, 4, 8, 1a, 11	1, 2, 3, 4, 5, 8, 10,11
	<i>All Other Glazing Except As Listed Above</i>	1, 2, 10, 11	1, 2, 3, 10, 11
BUSES	Windshields		1*, 1a*
	Glazing to Immediate Right and Left of Driver		1, 2, 3, 10, 11
	Rearmost Window if Used for Driver Visibility	1, 2, 8, 10, 11	1, 2, 3, 8, 9, 10, 11
	Interior Partitions and Auxiliary Wind Deflectors	1, 2, 4, 10, 11	1, 2, 3, 4, 5, 10, 11
	Folding Doors	1, 2, 4, 8, 10, 11	1, 2, 3, 4, 5, 8, 9, 10, 11
	Stande Windows	-----	1, 2, 3, 4, 5, 8, 9, 10, 11
	Openings in Roofs Not Required for Driving Visibility		1, 2, 3, 4, 5, 10, 11
	Flexible Curtains, Readily Removable Windows, Ventilators Used in Conjunction with Readily Removable Windows	1, 2, 4, 6, 10, 11	1, 2, 3, 4, 5, 6, 7, 10, 11
	<i>All Other Glazing Except as Listed Above</i>	1, 2, 3, 10, 11	1, 2, 3, 10,11
HOUSE TRAILERS AND PROPERTY-CARRYING TRAILERS	All Glazing		1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

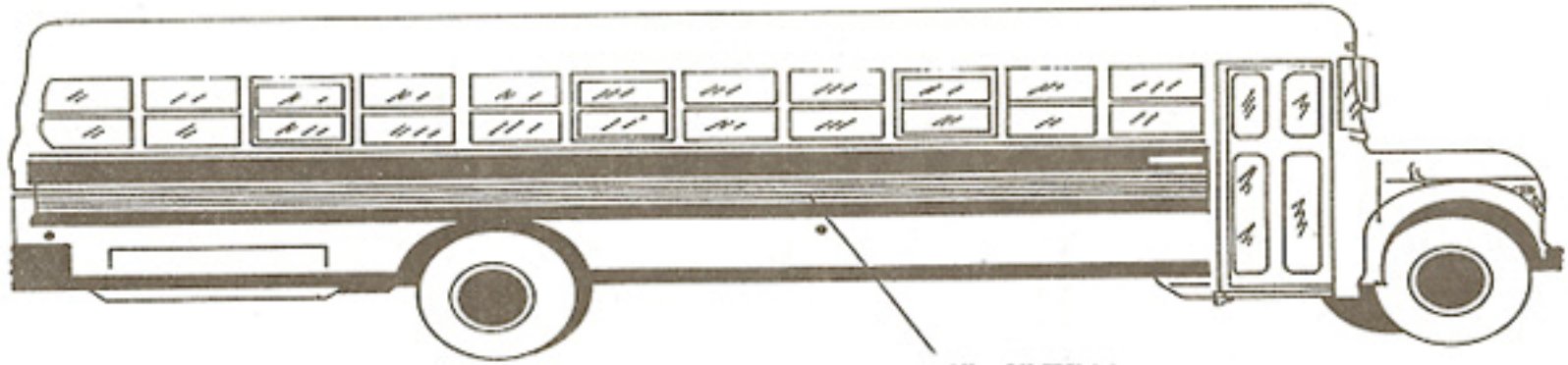
* Glazing material which is intentionally made so that only a portion of a single sheet has a luminous transmittance of not less than 70 percent will be marked at the edge of the sheet to show limits of the area that may be used at levels requisite for driving

visibility. The marks A S1 or At S2 etc.will be used with the arrow pointing to the portion of the sheet having a luminous transmittance of not less than 70 percent, and the number indicating the item with which that portion of the sheet complies.



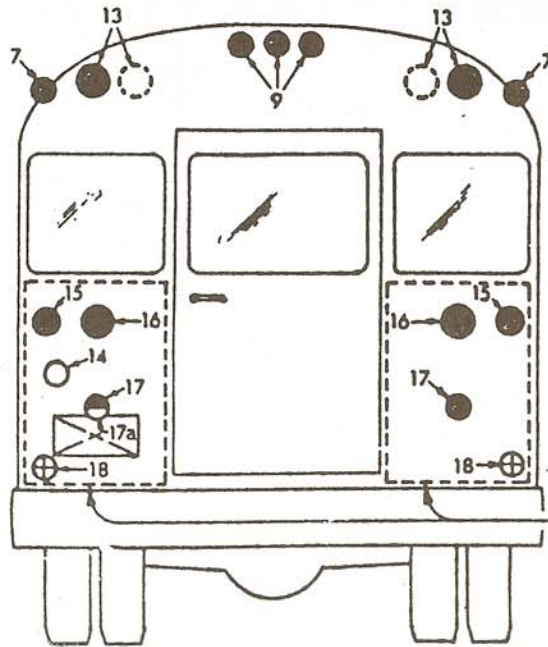
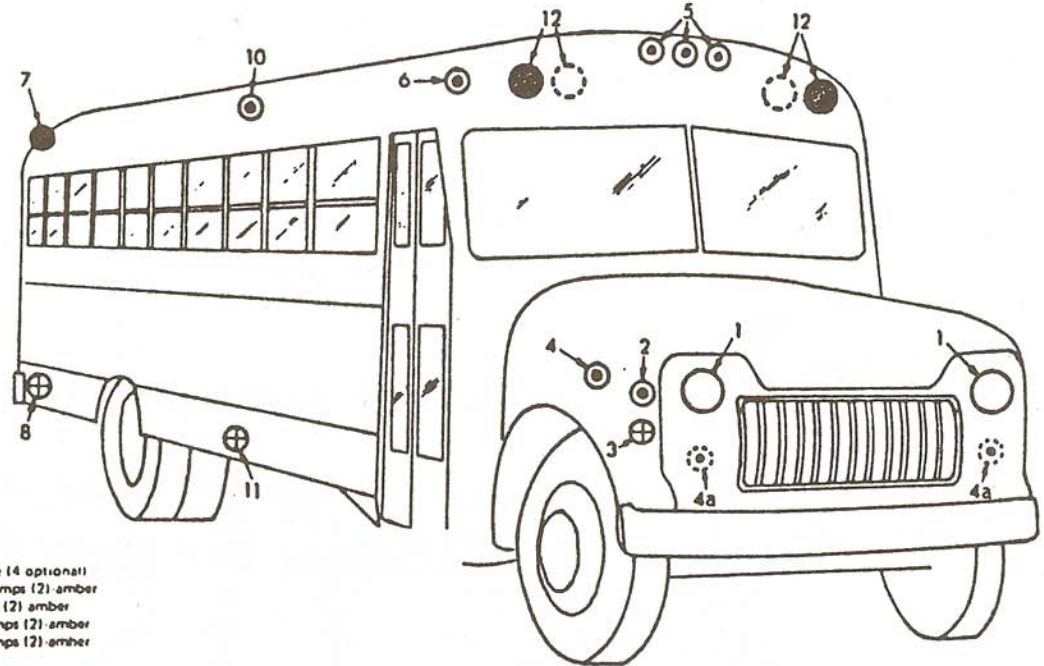
PLACEMENT OF REFLECTIVE MARKINGS

A10



1" - 2" Width
School Bus Yellow

FOR VEHICLES OF 80 OR MORE INCHES OVERALL WIDTH
RECOMMENDED LAMP AND REFLECTOR LOCATIONS
IN ACCORDANCE WITH THE
FEDERAL MOTOR VEHICLE SAFETY STANDARD NO. 108
(DRAWING IS NOT TO SCALE)



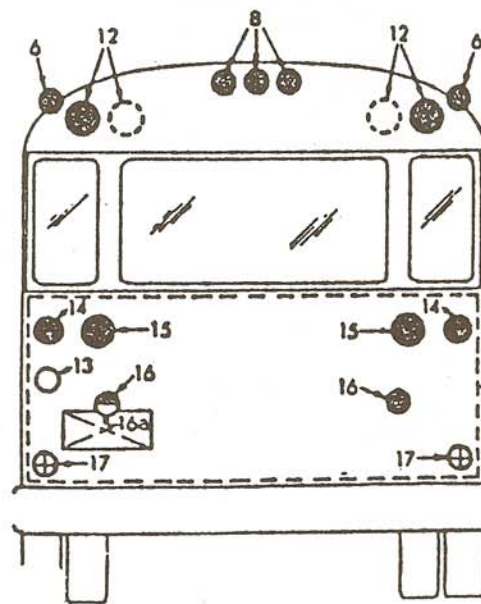
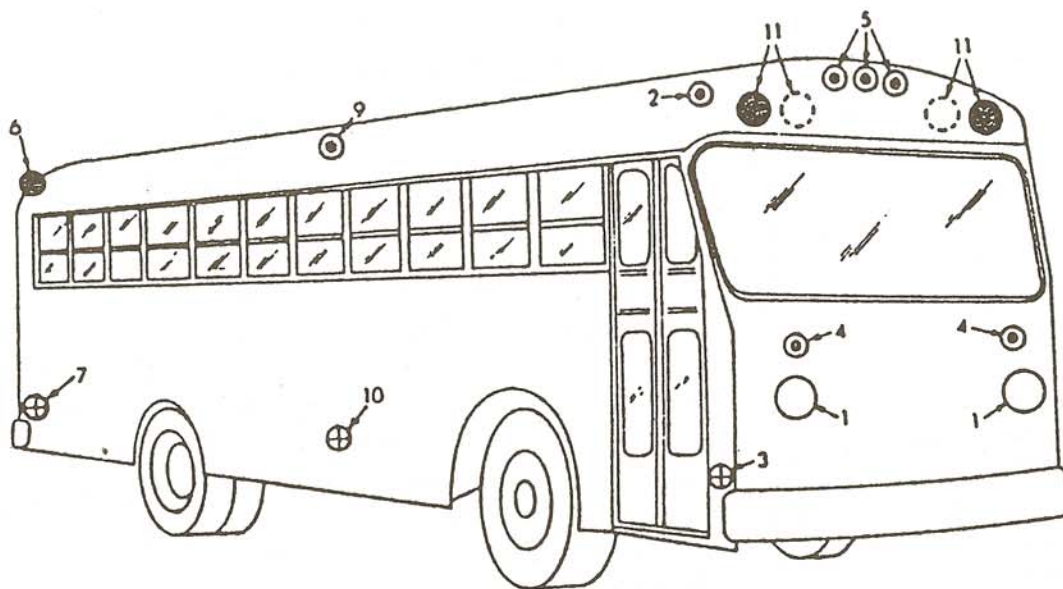
LEGEND

1. Headlamps (2) white (4 optional)
 2. Front side marker lamps (2) amber
 3. Front side reflectors (2) amber
 4. Front turn-signal lamps (2) amber
 - 4a. Front turn-signal lamps (2) amber (optional location)
 5. Front identification lamps (3) amber
 6. Front clearance lamps (2) amber
 7. Combination rear clearance & sidemarker lamps (2)-red (may be four separate lamps, See S4.4 Fed Std. No. 108)
 8. Rear side reflectors (2)-red
 9. Rear identification lamps (3)-red
 10. Intermediate side-marker lamps (2) amber (if vehicle 30' or more overall length)
 11. Intermediate side reflectors (2) amber (if vehicle is 30' or more overall length)
 12. Front school bus warning lamps (2) red (4 lamp system optional - 2 red & 2 amber**) **See S4.1.4 Federal Standard No. 108
 13. Rear school bus warning lamps (2) red (4 lamp system optional - 2 red & 2 amber**) **See S4.1.4 Federal Standard No. 108
 14. Rear backup lamp (1)-white (location optional provided optical requirements are met)
- THE FOLLOWING SHALL BE MOUNTED WITHIN THE DASHED AREA ACCORDING TO MANUFACTURER'S DESIGN.**
15. Rear turn-signal lamps (2)-red or amber
 16. Rear stop lamps (2)-red
 17. Rear taillamps (2)-red
 - 17a. Rear license plate lamp (1)-white combined with taillamp
 18. Rear reflectors (2)-red

The general areas indicated for lamps and reflectors are acceptable to the U.S. Department of Transportation's National Highway Traffic Safety Administration and the Bureau of Motor Carrier Safety. Consult Federal MVSS No. 108 and the applicable tables therein for exact requirements, such as; mounting height limitations, lamp combinations, and alternate locations.

FOR VEHICLES OF 80 OR MORE INCHES OVERALL WIDTH

RECOMMENDED LAMP AND REFLECTOR LOCATIONS IN ACCORDANCE WITH THE FEDERAL MOTOR VEHICLE SAFETY STANDARD NO. 108 (DRAWING IS NOT TO SCALE)



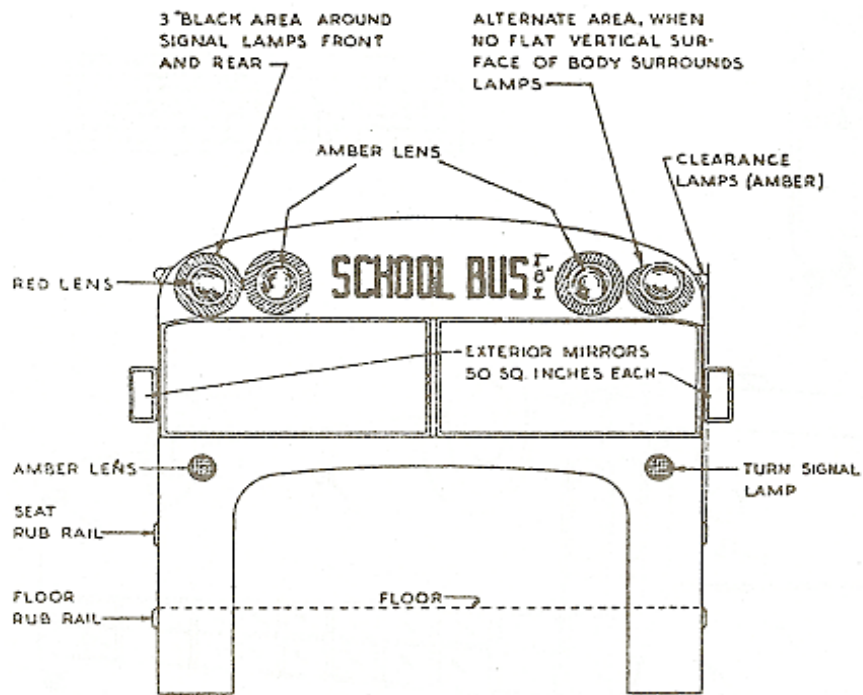
LEGEND

- 1 Headlamps (2) white (4 optional)
- 2 Combination front clearance & side marker lamps (2) amber (may be four separate lamps, See S4.4 Fed Std No. 108)
- 3 Front side reflectors (2) amber
- 4 Front turn-signal lamps (2) amber
- 5 Front identification lamps (3) amber
- 6 Combination rear clearance & side-marker lamps (2) red (may be four separate lamps, See S4.4 Fed Std No. 108)
- 7 Rear side reflectors (2) red
- 8 Rear identification lamps (3) red
- 9 Intermediate side-marker lamps (2) amber (if vehicle 30' or more overall length)
- 10 Intermediate side reflectors (2) amber (if vehicle is 30' or more overall length)
- 11 Front school bus warning lamps (2) red (4 lamp system optional - 2 red & 2 amber**) **See S4.1.4 Federal Standard No. 108
- 12 Rear school bus warning lamps (2) red (4 lamp system optional - 2 red & 2 amber**) **See S4.1.4 Federal Standard No. 108
- 13 Rear backup lamp (1) white (location optional provided optical requirements are met)

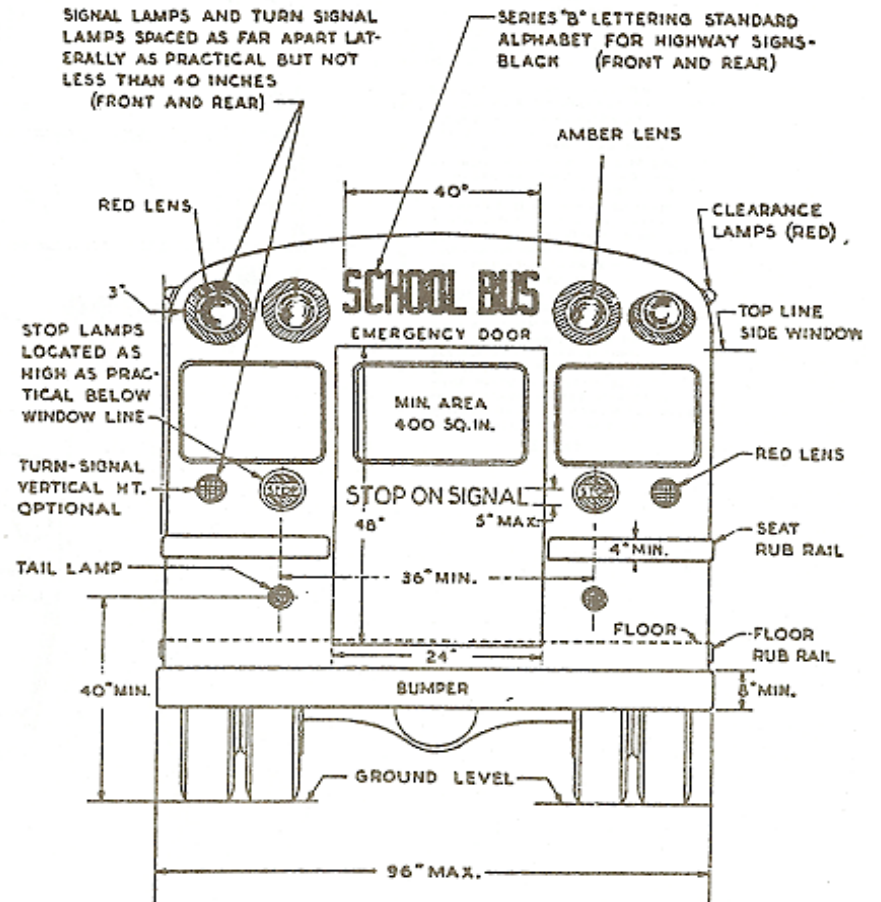
THE FOLLOWING SHALL BE MOUNTED WITHIN THE DASHED AREA ACCORDING TO MANUFACTURER'S DESIGN

14. Rear turn-signal lamps (2) red or amber
15. Rear stop lamps (2) red
16. Rear taillamps (2) red
- 16a. Rear license plate lamp (1) white combined with taillamp
17. Rear reflectors (2) red

The general areas indicated for lamps and reflectors are acceptable to the U.S. Department of Transportation's National Highway Traffic Safety Administration and the Bureau of Motor Carrier Safety. Consult Federal MVSS No. 108 and the applicable tables therein for exact requirements, such as: mounting height limitations, lamp combinations, and alternate locations.



FRONT ELEVATION



REAR ELEVATION

From NEA Minimum Standards for School Buses