

UNIVERSITY OF MICHIGAN  
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APPENDIX A  
ITEM WRITERS' GUIDE FOR  
TRAFFIC CONTROL DEVICES:  
A PRELIMINARY OUTLINE

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Transportation  
Research Institute

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## Index of Signs, Signals & Markings

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## INTRODUCTION

## Introduction

This document was prepared as a convenient reference to be consulted during the construction of sign items. It essentially presents a non-technical abbreviation of the Manual on Uniform Traffic Control Devices (May 1970 Draft) and the Uniform Vehicle Code (1968 Revised Edition).

Each traffic control device is described in terms of 3 characteristics: 1) what it looks like (e.g. color, shape), 2) where it is commonly deployed and 3) how it should be interpreted. In some cases a picture depicting the traffic control device has also been included.

It is hoped that further refinement of this preliminary document might result in a signing manual appropriate for the relatively unsophisticated student or driver.

**REGULATORY SIGNS**

Physical Characteristics  
(color, shape & message)

An octagon with white message "STOP" and border on a red background

Sample



Deployment  
(where & why)

Placed on the right side of the road near the intersection:

1. Intersections of less important roads with main roads if normal right-of-way is dangerous
2. Street entering a through highway or street
3. Unsignalized intersection in a signalized area
4. Where high speed, restricted view and accidents are found

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver stops at the marked line; if none, then before entering the crosswalk; if none, at a point nearest the intersecting road where a view of the approaching traffic is good. After stopping he must yield to any vehicle which has entered the intersection or constitutes an immediate hazard.

\*

Sign number refers to Manual of Uniform Traffic Control Devices, revised 1970.

**Physical Characteristics**  
(color, shape & message)

A supplemental plate should be mounted just below each stop sign. If the number of approach legs is three or more, the number on the plate should correspond to the number of legs or bear the legend "ALL-WAY". The supplemental plate shall have white letters on a red background.

**Sample****Deployment**  
(where & why)

Placed on the right side of the road near the intersection:

1. As a temporary measure to be used when traffic signals should be installed
2. Where accident problems exist which are susceptible to correction by a Multi - Way Stop
3. Traffic volume is heavy on several legs of the intersection

**Interpretation or  
Driver Action Required**  
(legal & social requirements)

Driver stops at the marked line; if none, then before entering the crosswalk; if none, at a point nearest the intersecting road where a view of the approaching traffic is good. After stopping, he must yield to any vehicle which has entered the intersection or constitutes an immediate hazard. Vehicle arriving first has the right-of-way. If two arrive at same time, the vehicle turning left should yield to oncoming traffic stopped at the stop sign. Usually right-of-way alternates between opposite legs of the intersection.

Physical Characteristics  
(color, shape & message)

A downward pointing equilateral triangle having a red border band and a white interior, and the word "YIELD" in red inside the border band.

Sample



Deployment  
(where & why)

1. On a minor road at the entrance to a major road where a stop sign is not warranted
2. Entrance ramp to an expressway where an adequate acceleration lane is not provided
3. Within an intersection with a divided highway where a stop sign is present at the entrance to the first roadway and further control is necessary at the entrance to the second roadway, or where the median width between the two roads exceeds thirty feet
4. Where there is a separate or channelized right turn lane without an adequate acceleration lane
5. At any intersection where a special problem exists and where an engineering study indicates the problem to be susceptible to correction by use of the yield sign.

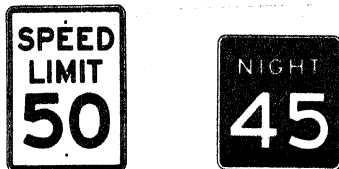
Interpretation or  
Driver Action Required  
(legal & social requirements)

Vehicles controlled by a yield sign need stop only when necessary to avoid interference with other traffic that is given the right-of-way.

Physical Characteristics  
(color, shape & message)

A rectangular sign with black letters on a white background;  
For night speed signs, white letters are used on a black  
background.

Sample



Deployment  
(where & why)

1. At points of change from one speed limit to another
2. Beyond major intersections
3. Periodically to remind driver of the speed limit

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver may not exceed the posted speed limit or travel slower  
than the posted minimum.  
Driver must adjust speed to nighttime limits, if posted, start-  
ing a half hour after sunset.

Physical Characteristics  
(color, shape & message)

A rectangular sign with black letters on a white background. For night speed signs white letters are used on a black background. May be on same sign as speed limit for cars, or below the car sign. Should be clearly marked "TRUCKS"

Sample



Deployment  
(where & why)

1. At points of change from one speed to another
2. Beyond major intersections
3. Periodically to remind driver of the speed limit

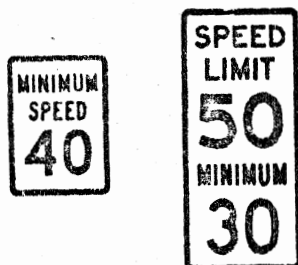
Interpretation or  
Driver Action Required  
(legal & social requirements)

May not exceed the posted speed limit or travel slower than the posted minimum  
Adjust speed to nighttime limits, if posted, starting a half hour after sunset.



**Physical Characteristics**  
(color, shape & message)

Rectangular sign with black legend on white background.  
May be included on speed limit sign.

**Sample****Deployment**  
(where & why)

Displayed only in combination with the posted limit.

**Interpretation or  
Driver Action Required**  
(legal & social requirements)

Driver should not drive below minimum limit except  
where necessary for safe operation.

Physical Characteristics  
(color, shape & message)

A rectangular sign at the beginning of the speed zone having black letters on a white background

Sample



Deployment  
(where & why)

1. Usually in rural areas where motorist will have to slow down to comply with new speed zone ahead
2. Not usually used in urban areas where speeds are relatively low
3. Always followed by a regular speed limit sign

Interpretation or  
Driver Action Required  
(legal & social requirements)

Advanced warning to slow down for reduced speed zone ahead such that motorist is traveling at the reduced speed upon entering the new speed zone

Physical Characteristics  
(color, shape & message)

Square sign; Legend and border of black on white background;  
When restriction applies only to certain periods, there may be  
supplementary legend showing those hours, or the sign may be  
illuminated when the restriction applies.

Sample



Deployment  
(where & why)

To prohibit all turning movements

1. Two shall be used at an intersection: one at the near right hand corner and one at the far left hand corner, facing traffic approaching the intersection.
2. Where there is a traffic signal on the far right corner, the sign on the right side will be placed near that signal.

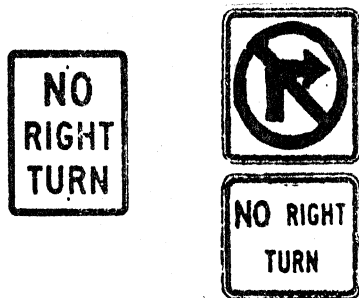
Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver may not make a turn at this intersection, or driver may not turn at this intersection during certain specified hours.

Physical Characteristics  
(color, shape & message)

1. Square or rectangular sign  
Legend and border black on white background, or
2. Square sign with circle inside with arrow bent at 90 degrees to the right, with diagonal slash through it inside circle; red circle and slash with black legend

Sample



Deployment  
(where & why)

Near right hand corner of the intersection

Interpretation or  
Driver Action Required  
(legal & social requirements)

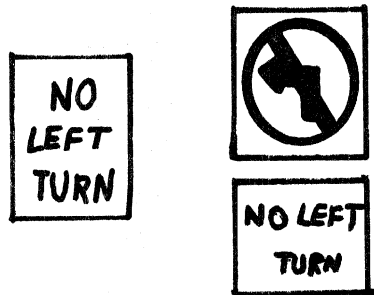
Driver may not turn right at this intersection.

**Physical Characteristics**  
(color, shape & message)

Same as No Right Turn Sign

Square sign; Legend and border of black on white background;  
When restriction applies only to certain periods, there may be  
supplementary legend showing those hours, or the sign may be  
illuminated when the restriction applies.

**Sample**



**Deployment**  
(where & why)

To prohibit left turning movements

1. Two shall be used at an intersection: one at the near right hand corner and one at the far left hand corner, facing traffic approaching the intersection.
2. Where there is a traffic signal on the far right corner, the sign on the right side will be placed near that signal.

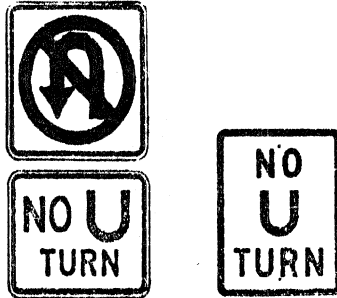
**Interpretation or  
Driver Action Required**  
(legal & social requirements)

Driver may not turn left at this intersection.

Physical Characteristics  
(color, shape & message)

1. Rectangular sign with legend "NO U TURN" and border in black on white background
2. Pictorial sign with No U Turn sign beneath it; Circle and slash are red, other legend ("No U Turn") and border in black

Sample



Deployment  
(where & why)

To be used at or between intersections to indicate locations where U turns are prohibited.

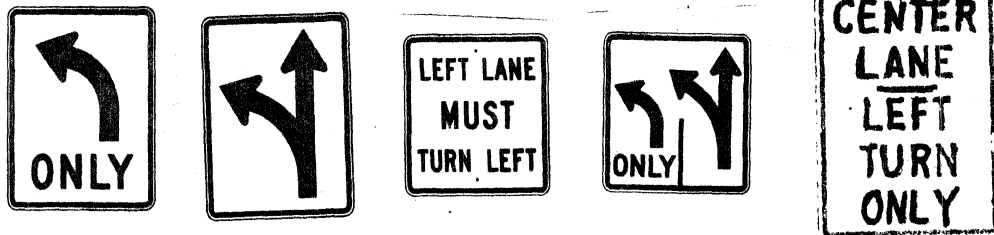
Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver may not make a U turn at this intersection or between intersections where sign is located.

**Physical Characteristics**  
(color, shape & message)

1. Rectangular when mounted over a lane: Square when post-mounted.
2. Mandatory movement sign shall have a single arrow; Regulatory movement sign shall have the word message only; Optional: straight through and curved arrow with lower ends superimposed
3. "OK" may be added to overhead sign.
4. Optional sign shall not be used alone to effect a turn prohibition.

**Sample**



**Deployment**  
(where & why)

1. Overhead signs are placed over the lanes to which they apply.
2. When post-mounted signs are used, one is placed at the intersection so motorists can choose the correct lane in time.
3. Used where there is great turning volume on a two- (or more) lane road

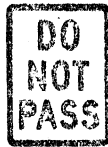
**Interpretation or  
Driver Action Required**  
(legal & social requirements)

Certain turning movements are required or unconventional.  
Certain turning movements are permitted from certain lanes.

**Physical Characteristics**  
(color, shape & message)

Rectangular sign with legend "DO NOT PASS" and border in black on a white background

**Sample**



**Deployment**  
(where & why)

1. May be used on a two- or three-lane road at the beginning of, and at intervals within, a zone through which restricted sight distance or other conditions make overtaking and passing hazardous.
2. May be used in addition to standard pavement markings to emphasize the restriction on passing.
3. An additional sign may be used on the left hand side of the road because the driver about to pass a vehicle ahead often has only a restricted view to the right. (see warning signs--No Passing Zone, sign 2C-39, p. )
4. May be used on highways at medians to restrict turning.

**Interpretation or  
Driver Action Required**  
(legal & social requirements)

Driver may not pass vehicles until an additional sign or pavement markings indicate end of no passing zone. On highways a driver may not change direction at medians, but must use exit or other legal means of turning.



**Physical Characteristics**  
(color, shape & message)

Rectangular sign with legend "PASS WITH CARE" and border in black on a white background; It should be the same size as the Do Not Pass sign when located at the end of a no passing zone.

**Sample**



**Deployment**  
(where & why)

1. Should be used at end on a no passing zone where a Do Not Pass sign has been erected at the beginning of the zone
2. It should be erected in the same manner as the Do Not Pass sign.

**Interpretation or  
Driver Action Required**  
(legal & social requirements)

Passing Permitted  
Driver should use extra caution when passing vehicles in this area.

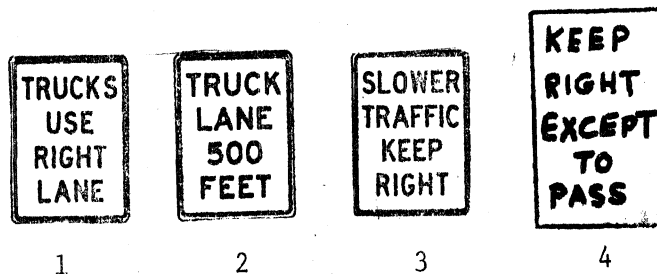
Physical Characteristics  
(color, shape & message)

Rectangular sign with black legend and border on white background

Legend:

1. "TRUCKS USE RIGHT LANE"
2. "TRUCK LANE 500 FEET"
3. "SLOWER TRAFFIC KEEP RIGHT"
4. " KEEP RIGHT EXCEPT TO PASS"

Sample



Deployment  
(where & why)

1. Use where an extra lane has been provided on an upgrade for slow-moving traffic.
2. Sign placed in advance of beginning of lane.
3. In addition, a sign indicating the pavement width transition near the end of the lane just before the top of the hill should be placed on either side of the road.
4. Pavement markings should also indicate how slow-moving lane is to be used.

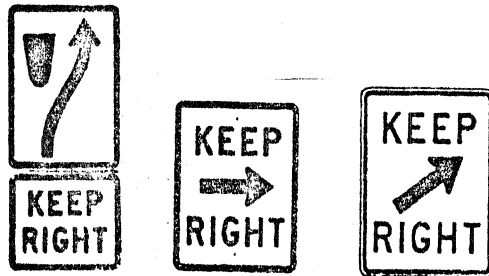
Interpretation or  
Driver Action Required  
(legal & social requirements)

Slower moving traffic should move to the new right hand lane to climb this hill.

Physical Characteristics  
(color, shape & message)

1. Rectangular sign with the words "KEEP RIGHT", with an arrow between the words (either horizontal or diagonal) pointing right
2. May have pictorial sign with smaller "KEEP RIGHT" sign underneath
3. Black legend and border on white background

Sample



Deployment  
(where & why)

1. Within and at the approach end of medians, parkways, loading and refuge islands, at traffic islands, and at underpass piers where traffic is required to keep to the right
2. On a pedestrian island or intersection-channelizing island it should be mounted at the approach end or as close to it as possible.
3. Should be mounted on the base of or just in front of a pier or other obstruction in the center of the roadway

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver must drive around to the right of this obstruction.

Physical Characteristics  
(color, shape & message)

1. White square on which is inscribed a red circle with a white band placed horizontally across the center of the circle
2. Legend "DO NOT ENTER in white letters, with the words "DO NOT" above the band and "ENTER" below the band

Sample



Deployment  
(where & why)

Shall be placed conspicuously in the most appropriate position at the end of a one-way roadway or ramp. Should normally be on the right hand side of roadway, facing traffic entering the roadway or ramp in the wrong direction. A second sign on left hand side may be justified

Interpretation or  
Driver Action Required  
(legal & social requirements)

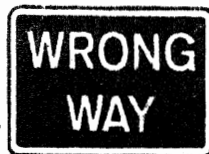
Driver shall not enter this restricted road section.

Physical Characteristics  
(color, shape & message)

Rectangular sign with white legend and border on red background

Legend: "WRONG WAY"

Sample



Deployment  
(where & why)

Used as a supplement to the Do Not Enter sign where an exit ramp intersects a divided highway in a manner that may invite wrong-way entry. Should be placed at a location along the exit ramp or the divided highway farther from the crossroad than the Do Not Enter sign.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is advised that this road conducts traffic in the opposite direction only, and that he must not enter from this side, nor continue driving in this direction.

Physical Characteristics  
(color, shape & message)

1. Square sign with legend:  
"COMMERCIAL VEHICLES EXCLUDED"  
"VEHICLES WITH LUGS PROHIBITED"  
"NO TRUCKS"  
and border black on white background
2. Pictorial sign with No Trucks sign beneath it

Sample



Deployment  
(where & why)

1. The exclusion sign should be placed on the right hand side of the road about 25 feet from the intersection to be clearly visible to all drivers and others turning into road which has exclusion.
2. A supplementary sign may be placed on the left hand side of restricted road.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers may not use roads where the type of vehicle he is driving is excluded.

Physical Characteristics  
(color, shape & message)

Rectangular sign, legend "PEDESTRIANS PROHIBITED" and border in black on white background

Sample



Deployment  
(where & why)

1. Should be at interchanges or elsewhere where pedestrians can enter the expressway right-of-way and endanger themselves or others, particularly where they attempt to cross the roadways
2. Should also be used at underpasses or elsewhere where safe pedestrian facilities are not provided.
3. The sign should be erected wherever it can be most effective.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Pedestrians should not enter or walk on roads where they are excluded for their safety.

Physical Characteristics  
(color, shape & message)

1. Rectangular sign with legend:  
"NO BICYCLES"  
"MOTOR-DRIVEN CYCLES PROHIBITED"  
"NONMOTORIZED TRAFFIC PROHIBITED"  
and border in black on white background
2. Pictorial sign with No Bicycle sign beneath it
3. Circle and slash are red, other legend and border are black

Sample



Deployment  
(where & why)

1. The exclusion sign should be placed on the right hand side of the road about 25 feet from the intersection to be clearly visible to all drivers and others turning into road which has exclusion
2. A supplementary sign may be placed on the left hand side of restricted road.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers may not use roads where the type of vehicle he is driving is excluded.



Physical Characteristics  
(color, shape & message)

1. Horizontal rectangle with white arrow pointing right or left on black background with the words "ONE WAY" centered in the arrow; or
2. Vertical rectangle with black lettering and a right or left pointing arrow on a white background

Sample



Deployment  
(where & why)

Shall be placed on the near right hand and far left hand corners of the intersection so as to face traffic entering or crossing the one-way street. Where intersection is signalized, the signs should be placed near the appropriate signal bases. Should always be placed parallel to the one-way street directly opposite the exits from alleys and other public ways

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers and all traffic may only travel on this street in direction indicated by the arrow.

Physical Characteristics  
(color, shape & message)

Vertical rectangle which should display the following information:

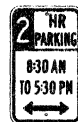
1. Restriction or prohibition
2. Time of day it is applicable, if not all hours
3. Days of week applicable, if not all days

Also should be a single-headed arrow pointing in direction the regulation is in effect if sign is at end of zone, or double-headed arrow pointing both ways if sign is at intermediate point  
Instead of arrows, if signs face traffic at 90° to curb, there may be included:

- "HERE TO CORNER"  
"HERE TO ALLEY"  
"THIS SIDE OF SIGN"  
"BETWEEN SIGNS"

Where parking is prohibited at all or at specified times, "PARKING" shall have red letters and border on a white background, and where only limited time parking is permitted, or where parking is permitted only in a particular manner, the sign shall have green letters and borders. For emphasis, the word "NO" or the numeral showing the time limit in hours or minutes may be in a reversed color arrangement in the upper left hand corner of the sign, i.e., in white on a rectangular area of red or green. This design should be confined to signs using the word "PARKING" rather than "STOPPING" or "STANDING" so that the proper size and series of letters need not be sacrificed.

Sample



Deployment  
(where & why)

1. Should be set at an angle of not less than 30° nor more than 45° with line of traffic
2. Where zone is long, signs showing double arrow at an intermediate point should be used.
3. If the signs are mounted at an angle of 90° to the curb line, two signs must be mounted back to back at the transition point between two parking zones, each with the appended plate reading "THIS SIDE OF SIGN".

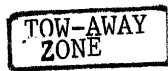
Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is advised that there are either full or partial restrictions on parking at location specified on this sign.

Physical Characteristics  
(color, shape & message)

Rectangular sign reading "TOW AWAY ZONE" in red with a red border on a white background

Sample



Deployment  
(where & why)

1. Where it is essential for all traffic lanes to be kept open for moving
2. Appended to or incorporated in any parking prohibition sign

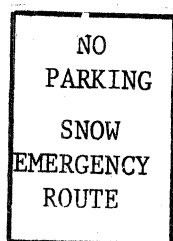
Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is advised that his car will be towed away if he is caught parking in this location.

Physical Characteristics  
(color, shape & message)

Vertical rectangle, having white background with upper part of plate a red background; Legend will vary according to the regulations.

Sample



Deployment  
(where & why)

Where special parking restrictions are imposed automatically for periods of heavy snowfall

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is advised that special parking restrictions are in effect during periods of heavy snowfall.

**Physical Characteristics**  
(color, shape & message)

Vertical rectangles with red legend and border on white background; Legend varies according to need, but is usually "NO PARKING ON PAVEMENT", "NO PARKING EXCEPT ON SHOULDER" or "NO STOPPING ON PAVEMENT", etc.

**Sample****Deployment**  
(where & why)

Usually at points of interest or scenic beauty, or rural business areas where violations are prevalent and where stopping or parking on the pavement obstructs the normal flow of traffic and presents a hazard.

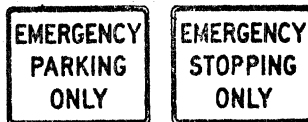
**Interpretation or  
Driver Action Required**  
(legal & social requirements)

Driver may not stop or park on the pavement.

**Physical Characteristics**  
(color, shape & message)

Horizontal, rectangular sign with legend "EMERGENCY PARKING ONLY" or "EMERGENCY STOPPING ONLY" and border in black on white background

**Sample**



**Deployment**  
(where & why)

May be used on expressways or other structures a short distance beyond an interchange entrance and at random intervals as needed, particularly where scenic or other attractions create a tendency for people to stop temporarily and where no turnabout or rest areas have been provided.

**Interpretation or  
Driver Action Required**  
(legal & social requirements)

Driver should only stop or park in these areas if there is an emergency such as a flat tire, etc.

Physical Characteristics  
(color, shape & message)

Rectangular sign with legend "WALK ON LEFT FACING TRAFFIC"  
and border in black on a white background

Sample



Deployment  
(where & why)

1. Used on rural highways where no sidewalks are provided to encourage safer pedestrian habits.
2. Should be erected on the right hand side of road where pedestrians must walk on the pavement or road shoulder in absence of pedestrian pathways or sidewalks.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Pedestrians should walk on the left side of the road  
(facing traffic) when no sidewalks are provided.

Physical Characteristics  
(color, shape & message)

Rectangular sign with legend "NO HITCH HIKING" and border in black on a white background

Sample



Deployment  
(where & why)

May be used at locations where hitch hiking has been observed contrary to law.

Interpretation or  
Driver Action Required  
(legal & social requirements)

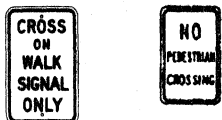
Pedestrians are prohibited from standing in the road for purposes of soliciting a ride. Drivers are also discouraged from picking up such pedestrians.



**Physical Characteristics**  
(color, shape & message)

Rectangular sign with legend :  
"CROSS ONLY AT CROSS WALKS"  
"NO PEDESTRIAN CROSSING"  
and border in black on white background

**Sample**



**Deployment**  
(where & why)

1. The Cross Only at Cross Walks sign may be used at a point which is considered hazardous, especially in front of a school or other public building where a crossing is not designated.
2. The Cross Only at Cross Walks sign may be used where crosswalks are clearly defined.
3. The No Pedestrian Crossing may be used where it appears safe or convenient to cross, but is unsafe to do so.

**Interpretation or  
Driver Action Required**  
(legal & social requirements)

1. The Cross Only at Cross Walks sign is used to discourage jay-walking or unauthorized crossing.
2. The No Pedestrian Crossing sign is used to prohibit pedestrians from crossing a roadway where it would be unsafe to do so.

Physical Characteristics  
(color, shape & message)

Rectangular sign with legend:  
"CROSS ON GREEN LIGHT ONLY"  
"CROSS ON WALK SIGNAL ONLY"  
"PUSH BUTTON FOR GREEN LIGHT"  
"PUSH BUTTON FOR WALK SIGNAL"  
and border in black on white background

Sample



Deployment  
(where & why)

1. Should be mounted immediately above or in unit with pedestrian push-button
2. Are used to supplement traffic signal controls

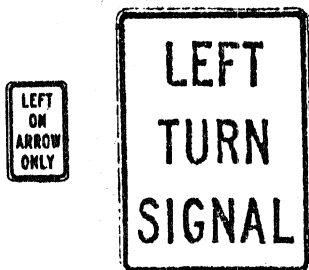
Interpretation or  
Driver Action Required  
(legal & social requirements)

Pedestrians should cross road on green light or walk signal only, and may have to take certain actions to obtain signal.

Physical Characteristics  
(color, shape & message)

Rectangular sign with legend:  
"LEFT ON ARROW ONLY"  
"LEFT (RIGHT) TURN SIGNAL"  
and border in black on white background

Sample



Deployment  
(where & why)

At certain locations to identify or clarify signal meaning or control

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver may turn on arrow only or when permitted by lighted signal.

Physical Characteristics  
(color, shape & message)

Rectangular sign with legend:  
"STOP HERE ON RED"  
and border in black on white background

Sample



Deployment  
(where & why)

At certain locations to clarify signal meaning or control

Supplements traffic signal control

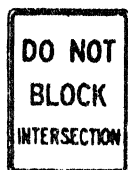
Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver must stop at this point at a red light.

Physical Characteristics  
(color, shape & message)

Rectangular sign with legend "DO NOT BLOCK INTERSECTION"  
and border in black on white background

Sample



Deployment  
(where & why)

1. At certain locations to clarify signal meaning or control
2. To insure avoidance of vehicle obstructions in intersections
3. At offset intersections or obscure roadways

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver should be sure complete passage is possible before  
entering intersections so as to avoid blocking the  
intersection.

Physical Characteristics  
(color, shape & message)

Rectangular sign with legend "USE LANE(S) WITH GREEN ARROW"  
and border in black on a white background

Sample



Deployment  
(where & why)

1. At certain locations to clarify signal meaning or control
2. To supplement lane direction control signals

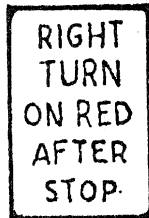
Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver must obey lane direction signals in his lane.

Physical Characteristics  
(color, shape & message)

Rectangular sign with legend "RIGHT TURN ON RED AFTER STOP"  
and border in black on a white background

Sample



Deployment  
(where & why)

At certain locations:

1. To permit right turns when not generally permitted by law
2. To remind motorists of right turns on red permitted by law-- particularly at busy intersections
3. To clarify signal meaning or control

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver may turn right on a red signal after stopping, when traffic and pedestrians permit.

Physical Characteristics  
(color, shape & message)

Rectangular sign with legend "KEEP OFF MEDIAN" and border  
in black on white background

Sample



Deployment  
(where & why)

Should be erected on left side of road within the median  
wherever there is a tendency for drivers to enter or  
cross; Also spaced at random intervals as needed.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver may not drive onto or park on median.



SIGN OR DEVICE Road Closed Sign 2B-37  
(See also Signs for Construction and Maintenance Operations)

Physical Characteristics  
(color, shape & message)

Rectangular sign with legend "ROAD CLOSED" and border in black on a white background

Sample



Deployment  
(where & why)

Should be used to mark roads that have been closed to all traffic either because of construction or maintenance operations, or because of a temporary emergency; Where sign faces through traffic it should be preceded by an Advance Road Closed warning sign (see 6B-13) and, if applicable, an Advance Detour warning sign (see 6B-12). (Construction and Maintenance sign section).

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver may not enter or drive on roads that are closed and marked because of situations described above.

SIGN OR DEVICE Local Traffic Only 2B-38

(See also Signs for Construction and Maintenance)

Physical Characteristics  
(color, shape & message)

Horizontal rectangles with legned:

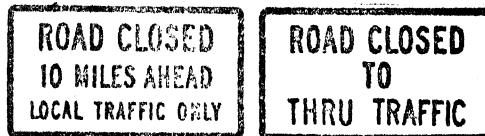
"ROAD CLOSED (10) MILES AHEAD -- LOCAL TRAFFIC ONLY"

"ROAD CLOSED TO THRU TRAFFIC " (urban)

Words "BRIDGE OUT" (or other) may be substituted for "ROAD CLOSED" where applicable.

Where the sign faces through traffic, it shall be preceded by Advance Road Closed warning sign.

Sample



Deployment  
(where & why)

Where through traffic must detour to avoid a closing of the highway for construction or maintenance work, or for a temporary emergency some distance beyond, but where the highway is open to the point of closure.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Unless your designation is within the specified area ahead, you are not to use this route, as through travel is not possible.

**Physical Characteristics**  
(color, shape & message)

Black legend on white background

Possible Legend:

"WEIGHT LIMIT ( ) TONS"

"AXLE WEIGHT LIMIT ( ) TONS"

"NO TRUCKS OVER ( ) LBS EMPTY WT."

"WEIGHT LIMIT ( ) TONS PER AXLE  
10 TONS GROSS"

**Sample**



**Deployment**  
(where & why)

Located immediately in advance of the section of highway  
or the structure to which it applies

**Interpretation or  
Driver Action Required**  
(legal & social requirements)

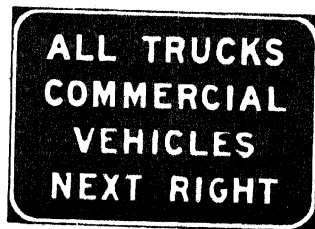
Driver may not drive through this (area) if his vehicle  
and load exceed specified weight, as road or structure  
will be in danger of collapse if the weight limit is exceeded.

Physical Characteristics  
(color, shape & message)

Rectangular sign with legend "ALL TRUCKS/COMMERCIAL VEHICLES NEXT RIGHT"

Normal combination is black legend on white background; however, the reverse (white legend on black background) is permitted.

Sample



Deployment  
(where & why)

Should supplement a series of guide signs standardized for identification and operation of Weigh Stations which are located at points of entry and elsewhere; Above sign should direct the concerned traffic into the Weigh Station.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers of motor vehicles must enter Weigh Station for weighing, inspection, and clearance.

Physical Characteristics  
(color, shape & message)

Horizontal, rectangular sign with legend "TRUCK ROUTE" and border in black on a white background

Sample



Deployment  
(where & why)

Should be used to mark an unnumbered truck route which has been designated by proper authority, where either a weight limit restriction or a truck exclusion has been imposed on alternate routes (see also selective exclusion sign 2B-27, p.20.

Interpretation or  
Driver Action Required  
(legal & social requirements)

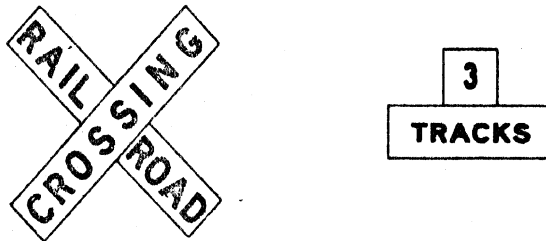
Drivers of trucks must use special routes either because of weight limit restrictions or truck exclusion.

Physical Characteristics  
(color, shape & message)

Crossbuck shall be white with words "RAILROAD CROSSING" in black.

If there are two or more tracks, number should be indicated on an auxiliary sign of inverted T shape mounted below crossbuck.

Sample



Deployment  
(where & why)

1. Crossbuck should be used at every railroad crossing, alone or in combination with other protective devices. Usually located on railroad right-of-way
2. The sign shall be erected on the right hand side of the road on each approach to the crossing.
3. The distance that would be assumed to separate tracks before an additional crossing sign is considered necessary is 100 feet.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is warned that he is approaching a railroad crossing. Drivers of certain vehicles must stop before crossing (school bus, taxis, vehicles carrying explosives or flammable liquids), not less than 15 feet from nearest rail and shall look in both directions. (See Uniform Vehicle Code, section 11-703, P. 153)

Physical Characteristics  
(color, shape & message)

Any additional signs to aid in law enforcement and regulation usually specified by local law or custom. Use and interpretation of these miscellaneous signs are fairly obvious. Special signs should not be used if standard sign would serve that purpose.

**WARNING SIGNS**



Physical Characteristics  
(color, shape & message)

1. Diamond shaped sign with black arrow bent at 90° angle right of left and black border on a yellow background.
2. Additional protection may be provided by use of the Advisory Speed plate. See warning sign 2C-36, p: 79, for example.

Sample



Deployment  
(where & why)

Used where engineering investigations of road show the recommended speed on a turn to be 30 mph or less and this is equal to or less than the speed limit established by law for that section of highway

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is warned of turn and should adjust speed and driving accordingly.

Physical Characteristics  
(color, shape & message)

1. Diamond shaped sign with black arrow curved either direction and black border on a yellow background.
2. Additional protection may be provided by use of Advisory Speed plate. See warning sign 2C-36, p. 79, for example.

Sample



Deployment  
(where & why)

Used where engineering investigations of road show the recommended speed on a curve to be between 30 and 60 mph, and this speed is equal to or less than the speed limit established by law for that section of the highway

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is warned of curve, and should adjust speed and driving accordingly.

Physical Characteristics  
(color, shape & message)

Diamond shaped sign with arrow bent first to the left  
and then to the right, or vice versa  
Black legend and border on a yellow background

Sample



Deployment  
(where & why)

Used to mark two curves or a curve and a turn in the opposite direction which are separated by a tangent of less than 600 feet

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is forewarned that the road turns to the left and then to the right (or vice versa), and he should take appropriate action (slow down).

Physical Characteristics  
(color, shape & message)

Diamond shaped sign with arrowed curve first to the right  
and then to the left, or vice versa  
Black legend and border on a yellow background

Sample



Deployment  
(where & why)

1. Used wherever there are two curves in opposite directions separated by a tangent of less than 600 feet
2. This sign indicates a less than 90° reversal in the road.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is advised that the road curves in opposite directions ahead, and he should take appropriate action (slow down).

Physical Characteristics  
(color, shape & message)

Diamond shaped sign with an arrow curved right and left several times to indicate the alignment of the road

Black legend and border on a yellow background

Sample



Deployment  
(where & why)

Used where there is a series of turns or curves, as defined in the warrants for Turn and Curve signs, separated by a tangent of less than 600 feet

- a. If the first turn or curve is to the right, a Right Winding Road sign is used.
- b. If the first turn is to the left, a Left Winding Road sign is used.

These shall be erected in advance of the curve.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is advised of winding road ahead, and should slow down and drive accordingly.

Physical Characteristics  
(color, shape & message)

Horizontal rectangle having a large arrow pointing to the right or left, or both; Background is yellow, with symbol in black.

Sample



Deployment  
(where & why)

1. Should be placed on the outside of a curve or on the far side of an intersection, in line with and at right angles to approaching traffic
2. Should be visible for at least 500 feet
3. May also be used as a supplement to the curve or reverse curve or winding road sign

Interpretation or  
Driver Action Required  
(legal & social requirements)

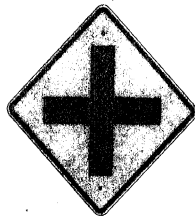
Driver should beware of sharp change of alignment in direction of travel, and slow down.

Physical Characteristics  
(color, shape & message)

Diamond shaped sign with a cross in the center; The relative importance of intersecting roads is shown by different widths of lines in diagram.

Black legend and border on a yellow background

Sample



Deployment  
(where & why)

Should be placed on a through highway near a crossroad

Interpretation or  
Driver Action Required  
(legal & social requirements)

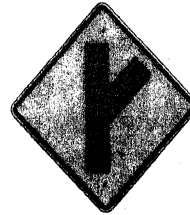
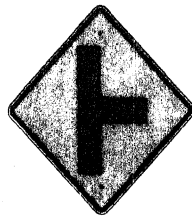
There is an obscured crossroad intersection ahead which may or may not have traffic control.

Physical Characteristics  
(color, shape & message)

Diamond shaped sign showing a side road symbol, either left or right, and at an angle of either 90° or 45°

Black legend and border on a yellow background

Sample



Deployment  
(where & why)

Should be placed on a through highway near a crossroad

Interpretation or  
Driver Action Required  
(legal & social requirements)

There is an obscured side road intersecting the through road ahead either at 90° or less -- caution!

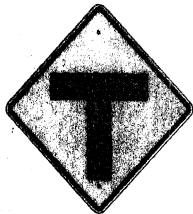


Physical Characteristics  
(color, shape & message)

A diamond shaped sign with:

1. Black "T" and border on a yellow background.
2. The relative importance of the intersecting roads may be shown by different widths of the line in the diagram;
3. A double-headed large arrow sign may be placed at the head of the T, directly in line with approaching traffic.

Sample



Deployment  
(where & why)

1. Should be used at approach to a T-intersection on a road that forms the stem of the T
2. Should not be used on approach where traffic is required to stop before entering the intersection
3. Nor at a T-intersection that is channelized by traffic islands, nor where junction signs or Advance Turn arrows are present

Interpretation or  
Driver Action Required  
(legal & social requirements)

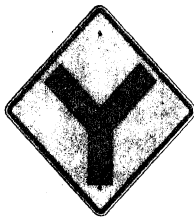
Driver is warned that he is approaching a T-intersection where he must turn right or left.

Physical Characteristics  
(color, shape & message)

A diamond shaped sign:

1. Black symbol on a yellow background.
2. The relative importance of intersecting roads may be shown by different widths of line in the diagram.
3. A double-headed large arrow sign may be erected at the fork of the Y, directly in line with approaching traffic.

Sample



Deployment  
(where & why)

1. Should be used to warn traffic approaching a Y-intersection on the road that forms the stem of the Y
2. Not to be used at Y-intersections that are channelized by traffic islands, nor where junction signs or Advance Turn Arrows are present.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is warned that he is approaching a Y-intersection where he must bear to the right or left.

Physical Characteristics  
(color, shape & message)

Diamond Shaped sign with black legend "STOP AHEAD" on  
a yellow background

Sample



Deployment  
(where & why)

1. Used upon approaching a stop sign that is not visible for a sufficient distance or prevailing approach speeds are high, to permit the driver to bring his vehicle to a stop at the stop sign
2. May be used for emphasis where there is poor observance of stop sign.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is warned to prepare to stop at approaching intersection.

**Physical Characteristics  
(color, shape & message)**

Diamond shaped sign with black legend "YIELD AHEAD" on a yellow background

**Sample**



**Deployment  
(where & why)**

Should be used before approaching a yield sign that is not visible for sufficient distance or where prevailing approach speeds are high, to permit driver to bring his vehicle to a stop if necessary at the yield sign.

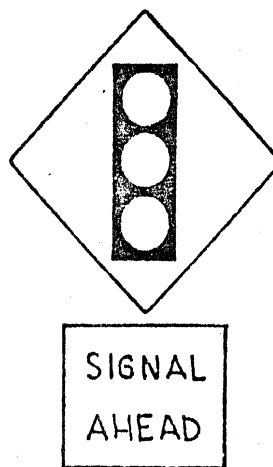
**Interpretation or  
Driver Action Required  
(legal & social requirements)**

Driver is warned that he is approaching an intersection where he must yield to other traffic and, therefore, must slow down.

Physical Characteristics  
(color, shape & message)

A diamond shaped sign, yellow with black legend "SIGNAL AHEAD", or a black traffic signal with red, yellow and green color, having a rectangular sign below it with the legend "SIGNAL AHEAD".

Sample



Deployment  
(where & why)

Should be used in advance of any signalized location where the signal is not visible for 600 feet in advance of intersection, or where prevailing approach speeds are high or conditions of visibility are such as to warrant an advance warning

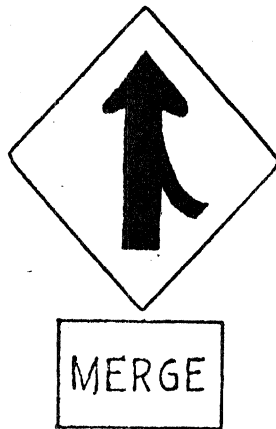
Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is warned of traffic signal controlled intersection and should prepare to stop.

**Physical Characteristics**  
(color, shape & message)

Diamond shaped sign with symbol in black on yellow background and a rectangular plate just below with the word "MERGE"

**Sample**



**Deployment**  
(where & why)

1. Should be erected on side of major road on which merging traffic will be encountered and in such a position as not to obstruct the driver's view of vehicles on the entering road
2. An additional sign may be placed on the entering road as a reminder.
3. Where two roads of approximately equal importance converge, a sign should be placed on each roadway.

**Interpretation or  
Driver Action Required**  
(legal & social requirements)

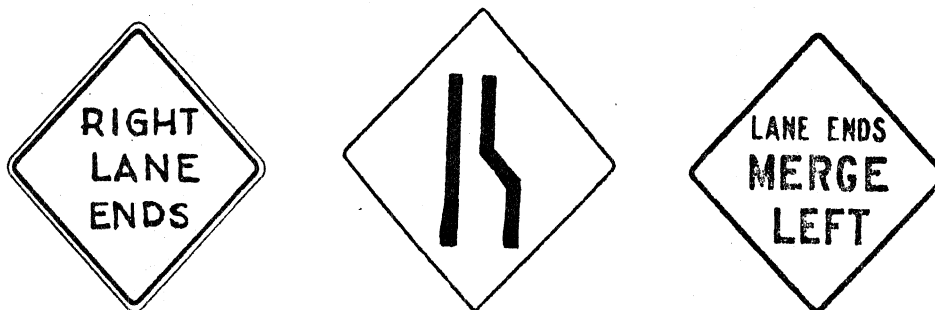
Driver is warned that merging movements may be encountered in advance of a point where two roads converge and no turning conflict occurs.

Physical Characteristics  
(color, shape & message)

Diamond shaped sign in yellow with black legend

1. Diagrammatic with lines indicating lane reduction
2. Word sign with legends such as:  
" RIGHT (LEFT) LANE ENDS"  
"LANE ENDS, MERGE LEFT (RIGHT)"

Sample



Deployment  
(where & why)

1. In advance of any reduction in lanes
2. On one-way roadways where the width of the median island will permit, two signs can be placed facing approaching traffic, one on the right and one on the left side, on the median island
3. Lane Ends, Merge (Left, Right) sign intended as supplement to Pavement Width Transition sign

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver should beware that there is a reduction in the number of lanes in the pavement ahead, and that he will have to shift according to the new road marking.

Physical Characteristics  
(color, shape & message)

A diamond shaped sign with black legend on a yellow background.  
Additional protection may be provided by use of reflector markers.

Sample



Deployment  
(where & why)

Used in advance of a transition on two-lane roads where pavement is reduced abruptly to a width such that two cars cannot pass safely without reducing speed.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver should reduce speed in advance of narrow pavement.



Physical Characteristics  
(color, shape & message)

A diamond shaped sign with a black legend reading "NARROW BRIDGE"  
and black border on a yellow background  
Additional protection may be provided by the use of reflector  
markers.

Sample



Deployment  
(where & why)

Used in advance of a bridge having a clear two-way road width of  
16-18 feet, or any bridge having a roadway clearance less than the  
width of the approach pavement

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver should reduce speed in advance of bridge

**Physical Characteristics**  
(color, shape & message)

Diamond shaped sign with black legend "ONE LANE BRIDGE" and border on a yellow background

**Sample**



**Deployment**  
(where & why)

Used on two-way roads in advance of bridges

- 1.) having a clear road width of less than sixteen feet
- 2.) having a clear road width of less than eighteen feet when commercial vehicles constitute a high proportion of traffic
- 3.) when the alignment of the road is poor on the approach to a structure having a clear road width of less than eighteen feet

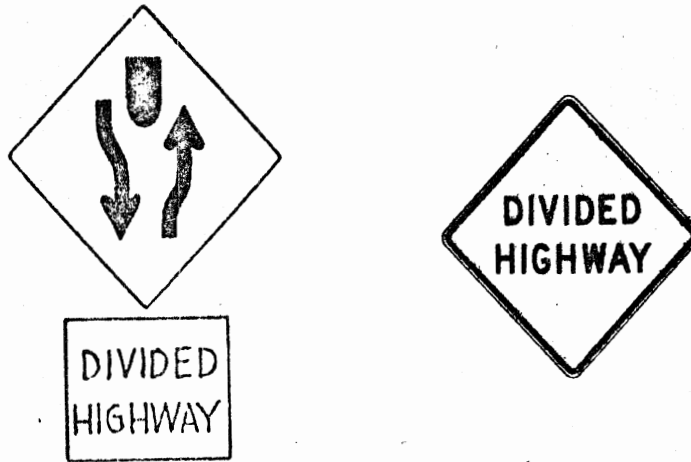
**Interpretation or  
Driver Action Required**  
(legal & social requirements)

Driver should reduce speed in advance of bridge and be prepared to yield to oncoming traffic.

Physical Characteristics  
(color, shape & message)

A diamond shaped sign with either a pictorial legend and legend plate or a sign with legend only  
The symbol and legend, "DIVIDED HIGHWAY" are black on a yellow background. ("DIVIDED ROAD" may be used as an alternate legend).

Sample



Deployment  
(where & why)

Used on approaches to a section of highway (not intersection or junction) where opposing flows of traffic are separated by a physical barrier

Interpretation or  
Driver Action Required  
(legal & social requirements)

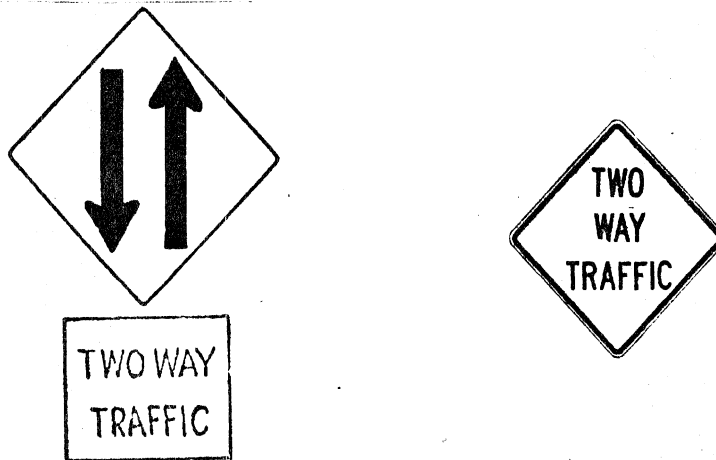
Driver is warned that a physical barrier exists ahead to separate opposing traffic streams.

Physical Characteristics  
(color, shape & message)

Diamond shaped sign, either diagrammatic or with a word message:

1. The diagram has two vertical arrows pointing in opposite directions with a supplementary two way traffic sign beneath.
2. Word sign has legend: "TWO WAY TRAFFIC"

Sample



Deployment  
(where & why)

Located in advance of the transition of a one-way roadway to a two-way roadway or along a two-way roadway to remind drivers from time to time

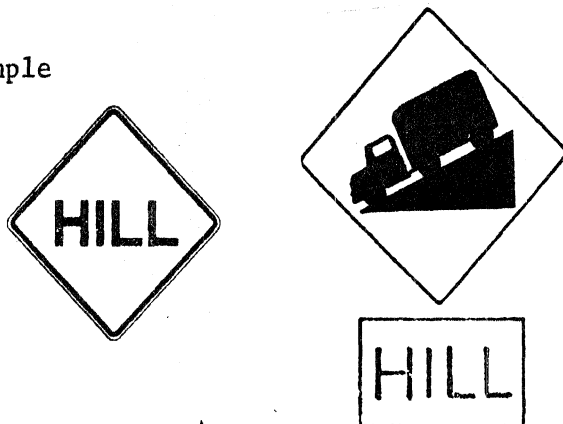
Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is forewarned that a separated one-way roadway is becoming a two-way roadway, and he will be exposed to oncoming traffic.

**Physical Characteristics**  
(color, shape & message)

A diamond shaped sign with a pictorial legend and legend plate;

Or a diamond shaped sign with the black legend "Hill" on a yellow background.

**Sample****Deployment**  
(where & why)

Used in advance of a downgrade where length, % of grade, horizontal curvature, or combination thereof, is such as to require special precautions on the part of drivers of any or all vehicles

**Interpretation or  
Driver Action Required**  
(legal & social requirements)

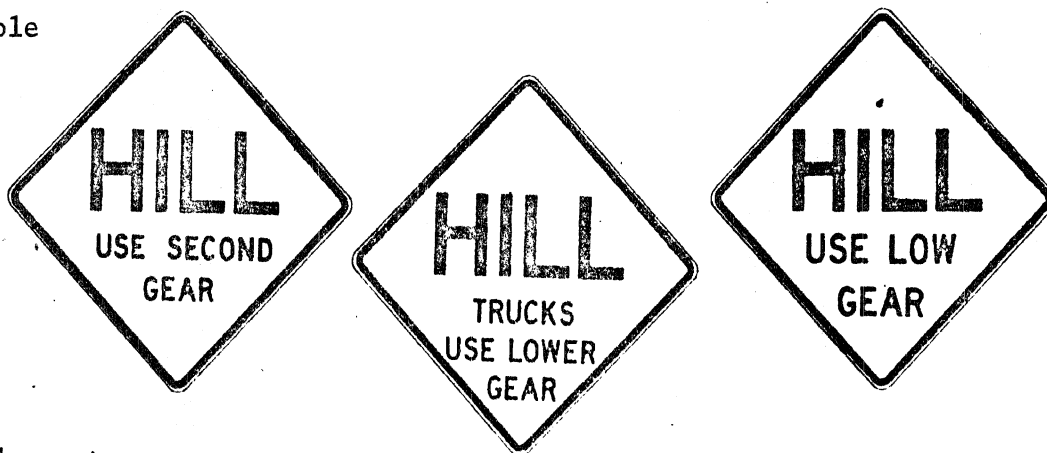
Driver should reduce speed and take special precautions on the downgrade.

Physical Characteristics  
(color, shape & message)

A diamond shaped sign

Black legend "HILL; USE SECOND GEAR" or "HILL: USE LOW GEAR"  
or "HILL: TRUCKS USE LOWER GEAR" and border on a yellow  
background

Sample



Deployment  
(where & why)

Where conditions require a descent of the grade in intermediate or low gear, this sign is used.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers of vehicles are warned that they should descend in second gear and use other precautions.

Physical Characteristics  
(color, shape & message)

A diamond shaped sign with a black legend "BUMP" and border on a yellow background

Sample



Deployment  
(where & why)

Used to give warning of a sharp rise in the profile of the road that is sufficiently abrupt to create a hazardous condition, to cause considerable discomfort to passengers, to cause shifting of cargo, or to deflect a vehicle from its true course at normal driving speeds for the road

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver should reduce speed to prepare for a bump.

**Physical Characteristics**  
(color, shape & message)

Black legend "DIP" and border on a yellow background  
on a diamond shaped sign

**Sample**



**Deployment**  
(where & why)

Used to give warning of a depression in profile of the road that is sufficiently abrupt to create a hazardous condition, to cause considerable discomfort to passengers, to cause a shifting of cargo, or deflect a vehicle from its true course at normal driving speeds for the road

**Interpretation or  
Driver Action Required**  
(legal & social requirements)

Driver should reduce speed in advance to prepare for the dip.



**Physical Characteristics**  
(color, shape & message)

A diamond shaped sign with legend "PAVEMENT ENDS" and border in black on a yellow background

**Sample**



**Deployment**  
(where & why)

Used to warn where a pavement surface changes from a hard-surfaced pavement to a low-type surface or earth road (gravel or dirt surface)

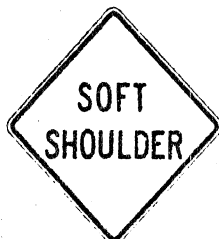
**Interpretation or  
Driver Action Required**  
(legal & social requirements)

Driver should reduce speed to prepare for change in road surface (usually such transitions are rough).

Physical Characteristics  
(color, shape & message)

A diamond shaped sign with black legend "SOFT SHOULDER"  
and border on a yellow background

Sample



Deployment  
(where & why)

Used to warn of a shoulder condition that presents a  
hazard to vehicles that may get off the pavement

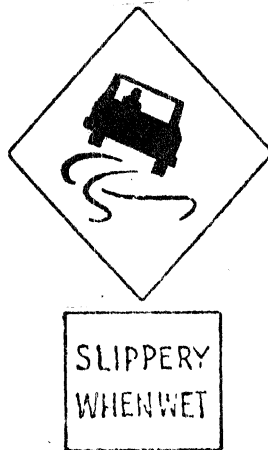
Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver should be extremely cautious of leaving road and  
going onto the shoulder, as it is soft and will not support  
the weight of a vehicle.

Physical Characteristics  
(color, shape & message)

A diamond shaped sign with a pictorial legend and additional legend plate. The symbol is black and says "SLIPPERY WHEN WET", on a yellow background.

Sample



Deployment  
(where & why)

Used to warn of a condition where the highway surface is extraordinarily slippery when wet; It should be located in advance of the beginning of the slippery section and at appropriate intervals on long sections of such pavement.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver should reduce speed and avoid skid-producing actions when the pavement is wet.

Physical Characteristics  
(color, shape & message)

A round sign with black legend, "X" and border on a yellow background

Sample



Deployment  
(where & why)

1. Used in advance of every railroad crossing except at a minor spur or siding which is infrequently used and which is guarded by train crews, or in business districts of large cities where railroad crossings are fully protected, or where the physical conditions are such that even a partially effective display of the sign is impossible.
2. On a divided highway it may be desirable to erect a supplemental sign on the left shoulder of the road.
3. In a residential or business district where low speeds are prevalent, the sign may be placed a minimum distance of 100 feet from the crossing. If a street intersection is within 100 feet, an additional sign or signs may be placed to warn traffic approaching the crossing from each intersected street.

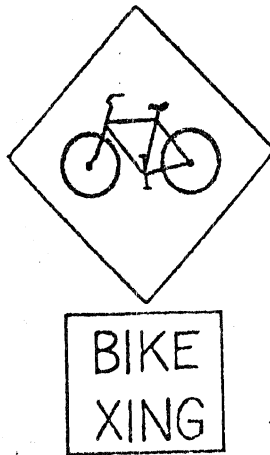
Interpretation or  
Driver Action Required  
(legal & social requirements)

1. Advance warning to the driver that a RR grade crossing is directly ahead
2. All vehicles must stop at certain railroad grade crossings.
3. Certain vehicles must stop at all railroad grade crossings.

Physical Characteristics  
(color, shape & message)

A diamond shaped sign having a black symbol and legend on a yellow background, with legend plate

Sample



Deployment  
(where & why)

Used in advance of a point where an officially designated bicycle trail crosses

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should use extra caution and be prepared to stop, as bicycle crossings are frequent.

Physical Characteristics  
(color, shape & message)

Diamond shaped signs having black symbols and legends on a yellow background, and a legend plate

Sample



PED  
XING



DEER  
XING

Deployment  
(where & why)

Used to warn drivers of unexpected hazard or vehicular traffic. If hazards are seasonal or temporary the signs should be removed if and when the hazardous conditions are terminated.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is warned to use extra caution in this area and to be alert for the warned hazard.

Physical Characteristics  
(color, shape & message)

A diamond shaped sign with black symbols on a yellow background

Sample



Deployment  
(where & why)

1. Used at loading and refuge islands, traffic islands with curbs and other obstructions in the road where traffic is permitted to pass on either side of the island or obstruction.
2. On an island it should be mounted at the approach end or as close as is practical. It should be mounted on the face or just in front of a pier or other large obstruction, in which case stripe markings on the obstruction should be discontinued to leave a three inch space around the outside of the sign.
3. Where traffic must keep to the right, the Keep Right regulatory sign should be used.

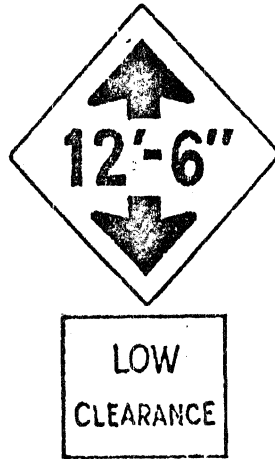
Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is warned that he must drive either in the right or left lane because of an obstruction.

Physical Characteristics  
(color, shape & message)

A diamond shaped sign with black legend on a yellow background, and a legend plate

Sample



Deployment  
(where & why)

1. Used to warn of low overhead clearance where clearance is less than 12 inches greater than maximum height of vehicle and load.
2. Erected on or in advance of structure. Where clearance is less than legal limit, a sign to that effect should be placed at nearest intersecting road or a wide point in the road where a vehicle which may need to can detour or turn around.
3. In the case of an arch or other structure under which clearance varies greatly, two or more signs should be used as necessary on the structure itself.

Interpretation  
or Driver Action  
Required  
(legal & social  
requirements)

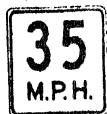
If driver's vehicle height is under limit, he may proceed.  
If the vehicle is over the limit, driver should make a detour or turn around, but should not pass through the structure.



**Physical Characteristics**  
(color, shape & message)

A square sign with black legend on a yellow background;  
The speed shown shall be a multiple of 5 mph.

**Sample**



**Deployment**  
(where & why)

1. May be used in conjunction with any standard yellow warning sign to indicate maximum recommended speed around a curve or through a hazardous location during good weather or prevailing weather conditions. It should only be used to supplement a warning sign and should never be used alone.
2. Should be mounted on same assembly with standard warning sign normally below it.

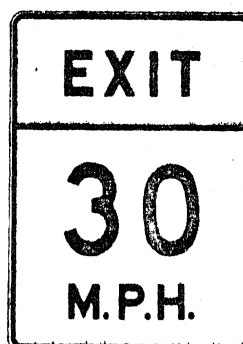
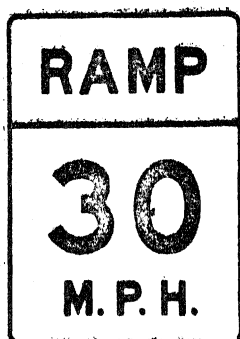
**Interpretation or  
Driver Action Required**  
(legal & social requirements)

Driver is advised that limit shown is advisory and should not be exceeded. Advisory speed is posted for ideal or prevailing conditions.

Physical Characteristics  
(color, shape & message)

A vertical rectangular sign in yellow with a black legend worded as shown below

Sample



Deployment  
(where & why)

At beginning of a ramp which has been designated as one which necessitates additional speed control

Interpretation or  
Driver Action Required  
(legal & social requirements)

The driver should conform to new speed zone while exiting on this ramp. The design of the ramp is such that the posted speed is the maximum safe speed under ideal conditions.

**Physical Characteristics**  
(color, shape & message)

Diamond shaped sign with black legend "Dead End" or "No Outlet" on a yellow background

**Sample****Deployment**  
(where & why)

The sign should be placed sufficiently in advance of dead-end street so the driver may avoid the dead end by turning at the nearest intersecting street.

**Interpretation or  
Driver Action Required**  
(legal & social requirements)

The driver is advised that this street has no outlet and that he should not enter it as a through street.

Physical Characteristics  
(color, shape & message)

Isosceles triangle pointing toward the road with legend "No Passing Zone" in black on a yellow background

Sample



Deployment  
(where & why)

Used on a two-lane road to warn of the beginning of a no passing zone identified by conventional pavement markings; Posted on the left side of the roadway at the beginning of the no passing zone. See also: regulatory sign 2B-20, p.14- "Do Not Pass."

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is advised that this is a zone where he may not pass.

Physical Characteristics  
(color, shape & message)

Black legend and border on a yellow background.

Sample



FARM  
MACHINERY



CATTLE  
XING

Deployment  
(where & why)

The applications of such signs are sufficiently apparent as to require no detailed explanation. Special expressway design features may warrant the use of such warning signs to meet unusual conditions.

Interpretation or  
Driver Action Required  
(legal & social requirements)

The meaning of special warning signs is self evident. The driver is warned that special conditions exist which warrant his attention.

**SIGNS FOR CIVIL DEFENSE**

Physical Characteristics  
(color, shape & message)

This is a circular sign carrying a directional arrow and the legend "Evacuation Route". The marker may be used as a legend on a non-reflectORIZED white square plate. The standard civil defense symbol, inscribed in a triangle within a ring, shall appear at the bottom of the sign. The legend, arrow, symbol, and border shall be in white with a blue background. At least the arrow and border should be reflectORIZED. The arrow designs shall include a straight vertical arrow pointing upward, a straight horizontal arrow pointing to the left or right, and a bent arrow pointing to the left or right for advance warning of a turn. The arrow may be a separate unit attached to the face of the sign.

Sample



Deployment  
(where & why)

This sign shall be erected 150 to 300 feet in advance of, and at any turn in an approved evacuation route, and elsewhere for straight-ahead confirmation where needed. In urban areas it shall be mounted at the right of the roadway, not less than 7 feet above the top of a curb. It shall not be placed where it will conflict with normal signs. If there is a conflict, civil defense signs take precedence.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Use this route in a civil defense emergency to vacate the area.

Physical Characteristics  
(color, shape & message)

A rectangular sign with black legend on a white background.  
Height should not normally exceed 4 feet to bottom of sign.

Sample



Deployment  
(where & why)

This sign should be erected on shoulder as near as practicable to the right hand edge of the road, or preferably on a portable mounting or barricade partly on completely in the road. Unless adequate advance warning signs are used, it should not be so placed as to create a complete and unavoidable blockade. Where feasible, the sign should be located at an intersection that provides a detour route.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers are warned of dangerous radiological or biological contamination and should keep out of area.



Physical Characteristics  
(color, shape & message)

A standard Stop sign is used with a supplemental panel "Traffic Regulation Post" mounted directly below the Stop sign. The supplemental sign should have a black legend on a reflectorized white background.

Sample



Deployment  
(where & why)

This sign is erected in the same manner as an Area Closed sign at a point where traffic must stop to be checked.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Used to designate a point where an official post has been set up to impose such controls as are necessary to limit congestion, expedite emergency traffic, exclude unauthorized vehicles, or protect the public. Drivers should obey controls.

Physical Characteristics  
(color, shape & message)

A rectangular sign with black legend and border on a white background

Sample



Deployment  
(where & why)

This sign should be erected at random intervals as needed in the same manner as other standard speed signs. In rural areas it should be mounted on the right hand side of the road with the lower edge of the sign not less than 5 feet above the crown of the road. Where an existing speed limit sign is in a suitable location, the Top Safe Speed sign may be mounted over the face of the older sign.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should drive at the safe top speed (as fast as possible).

Physical Characteristics  
(color, shape & message)

A rectangular sign with black legend and border on a white background

Sample



Deployment  
(where & why)

This sign should be erected in a manner similar to that of the Emergency Speed Sign. Used at an intersection, entrance to a route on which a traffic regulation post is located.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Its intent is to notify drivers of the presence of the post so that those who do not have priority permits issued by civil defense authorities can detour on another route, or turn back without making a needless trip and without adding to the screening load at the post. Local traffic, without permits, may proceed as far as the regulation post.

Physical Characteristics  
(color, shape & message)

Series of directional signs which carry the designation of the center and an arrow indicating the direction to the center;  
The signs are rectangular, with a black legend and border on a white background.

Sample



Deployment  
(where & why)

These are erected at intersections and elsewhere on the right hand side of the road as a guide sign.

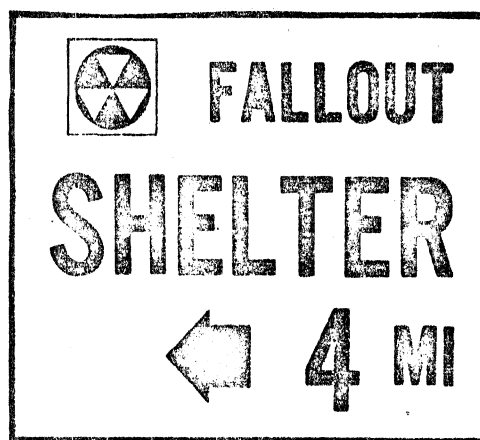
Interpretation or  
Driver Action Required  
(legal & social requirements)

If the driver needs the center for civilian relief, communication, medical service, etc, he should follow the series of directional signs.

Physical Characteristics  
(color, shape & message)

This is a horizontal rectangle containing the identifying "public fallout shelter" emblem in the upper left part of the sign. The colors of the emblem are yellow triangles inscribed in a black circle placed on a yellow square. The words "Fallout Shelter", the directional arrow, the distance to the shelter, and the border are in black against white.

Sample



Deployment  
(where & why)

This sign is placed in accordance with approved plans of state and local civil defense directors. Erection should conform to established highway signing standards. It should not be placed in competition with other necessary highway guide and regulatory signs.

Interpretation or  
Driver Action Required  
(legal & social requirements)

In case of a civil defense emergency, follow these directions to the nearest fallout shelter.

**TRAFFIC SIGNALS**

Physical Characteristics  
(color, shape & message)

A circular steady red signal

Sample

Deployment  
(where & why)

1. This signal is used to prohibit traffic from entering the intersection or another controlled area.
2. When displayed with a green arrow, it permits traffic to make specified turns, and to prohibit traffic from proceeding straight ahead. This is optional where it is physically impossible for traffic to go straight ahead.

Interpretation or  
Driver Action Required  
(legal & social requirements)

1. Traffic should stop at the stop line, or if none, before the crosswalk or near side of the intersection, or if none, before entering the intersection, and should remain until indicated to proceed.
2. When there is a sign permitting a turn, drivers may cautiously enter intersection to make the turn, after stopping to yield the right-of-way to other traffic and pedestrians lawfully using the intersection or adjacent crosswalk.
3. Pedestrians facing a steady red signal shall not enter the road.

Physical Characteristics  
(color, shape & message)

A red arrow within a traffic signal

Sample

Deployment  
(where & why)

A steady red arrow indication shall only be used in a separate signal face which controls a single traffic movement, and which also contains yellow and green arrow lenses.

Interpretation or  
Driver Action Required  
(legal & social requirements)

1. A driver may not enter the intersection to make the movement indicated by the arrow, and shall stop at a marked stop line or before entering the crosswalk, and shall wait until a new signal indicates he may move.
2. Pedestrians facing a steady red arrow may not enter the roadway.



Physical Characteristics  
(color, shape & message)

A circular yellow light having a range of approximately 3 to 6 seconds. Generally the longer intervals are appropriate to higher approach speeds.

Sample

Deployment  
(where & why)

1. Shall be given following a circular green indication in the same signal face.
2. Is an optional alternative to a yellow arrow indication following a green arrow indication in a separate signal face used exclusively to control a single directional movement.

Interpretation or  
Driver Action Required  
(legal & social requirements)

1. The driver is warned that the green signal is being ended and red is coming immediately, so that he shall either not enter the intersection or, if in the intersection, clear it as quickly as possible.
2. There is not enough time for pedestrians to cross the roadway before a red light appears, so they should not step onto the roadway.

Physical Characteristics  
(color, shape & message)

A lighted yellow arrow

Sample

Deployment  
(where & why)

1. A steady yellow arrow indication shall be used following a green arrow indication displayed simultaneously with a circular red indication in the same signal face.
2. A steady yellow arrow indication may be used following a green arrow indication in a separate signal face used exclusively to control a single directional movement.
- d. A yellow arrow may be used to indicate the clearance interval following the termination of a green arrow displayed simultaneously with a continuing circular green indication in the same signal face.

Interpretation or  
Driver Action Required  
(legal & social requirements)

1. The driver is warned that the green signal is being ended and red is coming immediately, so that he shall either not enter the intersection or, if in the intersection, clear it as quickly as possible.
2. There is not enough time for pedestrians to cross the roadway before a red light appears, so they should not step onto the roadway.

Physical Characteristics  
(color, shape & message)

Circular green signal

Sample

Deployment  
(where & why)

A steady circular green indication shall be given only when it is intended to permit traffic to proceed in any direction which is lawful and practical.

Interpretation or  
Driver Action Required  
(legal & social requirements)

1. A driver may proceed straight through or turn right or left unless a sign prohibits such a move, but he must yield the right-of-way to all other traffic lawfully in the intersection.
2. Pedestrians (except when the pole green signal is an arrow) may proceed across roadway within the marked or unmarked crosswalk.

Physical Characteristics  
(color, shape & message)

Green arrow

Sample

Deployment  
(where & why)

A steady green arrow indication shall be used only when there would be no conflict with other vehicles or with pedestrians crossing in conformation with a "Walk" indication.

Interpretation or  
Driver Action Required  
(legal & social requirements)

A driver may cautiously enter the intersection only to make the movement indicated by such arrow, or such other movement as is permitted by other indications shown at the same time. Driver must yield to all traffic lawfully in the intersection, including pedestrians in the crosswalk.

Physical Characteristics  
(color, shape & message)

The illumining element in a flashing signal shall be flashed continuously at a rate of not less than 50 nor more than 60 times per minute. The illuminated period of each flash shall be not less than half and not more than two-thirds of the total flash cycle.

Sample

Deployment  
(where & why)

1. At intersections where it is necessary to supplement signal traffic control
2. To warn of a dangerous intersection or
3. To provide an alternative to stop and go signals during non-peak periods

Interpretation or  
Driver Action Required  
(legal & social requirements)

Flashing red - Driver must stop and proceed when the intersection is clear.

Flashing yellow - Driver must slow down and proceed cautiously through the intersection.

Flashing green - Driver may continue through the intersection.

Physical Characteristics  
(color, shape & message)

These are the same as regular intersection traffic signals.

Sample

Deployment  
(where & why)

1. At industrial track crossings and other places where train movements are slow, the traffic is controlled by signal at a nearby intersection.
2. Regular intersection controls will stop traffic opposing RR crossing and permit traffic that will not interfere to continue.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Steady red signal - Traffic should stop at the stop line, or if none, before the crosswalk or near side of intersection, or if none, before entering intersection, and should remain until indicated to proceed.

Steady yellow signal - Driver is warned that the green signal is being ended and red is coming immediately.

Steady green signal - Driver may proceed.

Physical Characteristics  
(color, shape & message)

Sign with message of signal

Sample



Deployment  
(where & why)

1. These are used with traffic signals and should be placed adjacent to the signal face to which they apply.
2. A stop sign should not be used with any signal operation except:
  - a) When the signal flashes red at all times.
  - b) When a minor street or driveway is located within or adjacent to the controlled area but does not warrant separate signal control due to extremely low potential conflict.
3. Signals should be brighter and have a more dominant position than the sign.

Interpretation or  
Driver Action Required  
(legal & social requirements)

These emphasize or clarify the meaning of the signal which they supplement.

Physical Characteristics  
(color, shape & message)

Same as steady traffic control signals

Sample

Deployment  
(where & why)

1. These are in operation only during specified periods of the day.
2. They are used where the number of adequate gaps in traffic during the period when children are using the crosswalk is less than the number of minutes in the same period.
3. Pedestrian indications shall be provided at least for each crosswalk established as a school crossing.
4. At an intersection the signal normally should be traffic actuated. As a minimum it should be semi-traffic actuated, but full actuation with detectors on all approaches may be desirable. Intersection installations that can be fitted into progressive signal systems may have pre-timed control.
5. At non-intersection crossings, the signal should be pedestrian actuated, parking and other obstructions to view should be prohibited for at least 100 feet in advance of and 20 feet beyond the crosswalk, and the installation should include suitable standard signs and pavement markings. Special police supervision and/or enforcement should be provided for a new non-intersection installation.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Steady red signal - Traffic should stop at the stop line, or if none, before the crosswalk or near side of intersection, or if none, before entering intersection, and should remain until indicated to proceed.

Steady yellow signal - Driver is warned that the green signal is being ended and red is coming immediately.

Steady green signal - Driver may proceed.

P.S. Driver should be extra alert for pedestrians at all times of the day.



Physical Characteristics  
(color, shape & message)

Same as red, yellow and green traffic signals

Sample

Deployment  
(where & why)

1. Used at intersections that would not otherwise warrant signals, to maintain proper grouping of vehicles and effectively regulate group speed.
2. Resultant signal spacing may never be less than 1000 feet.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Steady green signal - Driver may proceed.

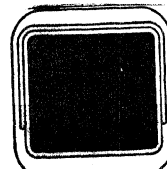
Steady yellow signal - Driver is warned that the green signal is being ended and red is coming immediately.

Steady red signal - Traffic should stop at the stop line, or if none, before the crosswalk or near side of intersection, or if none, before entering intersection, and should remain until indicated to proceed.

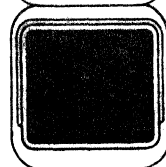
Physical Characteristics  
(color, shape & message)

A rectangular shaped signal with legend "Walk" or "Don't Walk"  
"Walk" is Lunar white and "Don't Walk" is Portland orange.  
When not illuminated, they should not be readable by people  
at the far end of the crosswalk.

Sampl.



Deployment  
(where & why)



1. When any volume of pedestrian activity requires the use of a pedestrian clearance interval to minimize vehicle-pedestrian conflicts or to assist pedestrians in making a safe crossing
2. When multi-phase or split-phase timing would tend to confuse pedestrians guided only by vehicle signal indications
3. When pedestrians cross part of the street, to or from an island, during a particular interval where they should not be permitted to cross another part of that street during any part of the same interval

Interpretation or  
Driver Action Required  
(legal & social requirements)

- The meanings of pedestrian signal indications are as follows:
1. "Don't Walk," steady - While the Don't Walk indication is steadily illuminated, no pedestrian shall enter the roadway in the direction of the indication.
  2. "Don't Walk," flashing - While the Don't Walk indication is flashing, no pedestrian shall start to cross the roadway in the direction of the indication, but any pedestrian who has partly completed his crossing during the Walk indication shall proceed to a sidewalk, or to a safety island.
  3. "Walk," steady - While the Walk indication is steadily illuminated pedestrians facing the signal indication may proceed across the roadway in the direction of the indication.
  4. "Walk," flashing - Where there is a possible conflict of pedestrians with turning vehicles, a flashing Walk indication may be used.

Physical Characteristics  
(color, shape & message)

One or more sections of a standard traffic signal head with a yellow lens in each section illuminated by intermittent flashes.

The beacon should not be included within the border of the sign it supplements.

Sample

Deployment  
(where & why)

Typical applications:

1. Obstructions in or immediately adjacent to the road
2. Supplemental to advance warning signs.
3. Mid-block crosswalks
4. At intersections where warning is required
5. Supplemental to regulatory signs, except Stop, Yield, and Do Not Enter.

These are used only to supplement, never as a stand-alone warning device.

Interpretation or  
Driver Action Required  
(legal & social requirements)

The driver is warned that there is some type of hazard ahead and he should read the sign for an explanation.

Physical Characteristics  
(color, shape & message)

Two yellow circular lenses, each having a diameter of not less than 6 inches  
When two are used, they should be vertically aligned and alternately flashed.

Sample

Deployment  
(where & why)

Used with a fixed or variable speed limit sign. Where applicable, and with an appropriate accompanying sign, the flashing of a beacon speed limit sign may be used to indicate that the speed limit sign is in effect.  
Used near schools at appropriate times.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver should be warned that a special speed zone exists while the signals are flashing, and should adjust his speed accordingly.

SIGN OR DEVICE Intersection Control Beacons 4E-7

(See also "Flashing Operations" 4B-18,  
p. 99.)

Physical Characteristics  
(color, shape & message)

Consist of one or more sections of a standard traffic signal head having yellow or red lenses in each face, which are illuminated by intermittent flashes.

Sample

Deployment  
(where & why)

1. A flashing yellow beacon should not face conflicting vehicular approaches
2. Yellow on one route, usually a major road, and red for the remaining approaches.
3. Red for all approaches, where all-way stop is warranted.
4. A stop sign should be used with a flashing red beacon.
5. Used at an intersection to control two or more directions of traffic.
6. Supplemental indications may be used on one or more approaches in order to provide adequate visibility to approaching motorists.
7. Used at intersections where traffic or physical conditions do not warrant conventional traffic signals but where high accident rates indicate a special hazard.
8. Generally suspended over the center of an intersection.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Flashing red - Driver must stop before entering and proceed when intersection is clear.

Flashing yellow - Driver should slow down and proceed through intersection with caution.

Physical Characteristics  
(color, shape & message)

1. When two lenses are used, they shall be aligned horizontally and flashed simultaneously.
2. A stop sign beacon consists of one or two sections of a standard traffic signal head with a red lens in each section, illuminated by intermittent flashes.

Sample

Deployment  
(where & why)

1. The bottom of the housing of a stop sign beacon should not be less than 12 nor more than 24 inches above the top of a stop sign.
2. A stop sign beacon is used as a supplement to a standard stop sign where experience has shown that drivers ignore or miss the sign.

Interpretation or  
Driver Action Required  
(legal & social requirements)

A driver should stop and proceed when intersection is clear, as with a normal stop sign.

Physical Characteristics  
(color, shape & message)

1. The indications provided for each lane may be in separate units or may be superimposed in the same unit.
2. When separate, the red X symbol shall be on the left, yellow X in the middle, and green arrow on the right.
3. The units have rectangular faces (plain or with an arrow or X), in green, yellow or red.

Sample

Deployment  
(where & why)

1. Each lane to be reversed shall have signal faces with a downward pointing green arrow on an opaque background and a red X symbol on an opaque background. Signal faces with a yellow X symbol on an opaque background may be provided.
2. Each nonreversible lane adjacent to a reversible lane shall have a downward pointing green arrow displayed to traffic traveling in the direction permitted, and a red X displayed in the opposite direction.
3. Most common in reversible lane control such as toll booths, or
4. Where there is no need or intent to reverse lanes
  - a) On a freeway to keep traffic out of certain lanes at certain hours to facilitate the merging of traffic from a ramp or freeway
  - b) On a freeway near its end to indicate a lane that ends
  - c) On a freeway or long bridge to indicate a lane that is temporarily closed due to an accident or breakdown.
5. Located over center of lane controlled.
6. If the lane is long, curved or hilly, there will be intermediate control signals.
7. Where intersections are controlled by traffic signals, control signals will be before or beyond intersection.

Interpretation or  
Driver Action Required  
(legal & social requirements)

1. Green arrow (steady) - A driver facing this indication is permitted to drive in the lane over which the arrow signal is located.

2. Yellow X (steady) - A driver facing this indication should prepare to vacate in a safe manner the lane over which the signal is located to avoid, if possible, occupying that lane where a steady red X is displayed.
3. Yellow X (flashing) - A driver facing this indication is permitted to use a lane over which the signal is located for a left turn, using proper caution.
4. Red X (steady) - A driver facing this indication shall not drive in the lane over which the signal is located, and this indication shall modify accordingly the meaning of all other traffic controls present. The driver shall obey all other traffic controls and follow normal safe driving practices.



Physical Characteristics  
(color, shape & message)

1. Consists of standard three color (red, yellow and green) traffic signal indications, generally to be used when drawbridge operation is quite frequent.
2. Consists of two red signal indications in vertical array, separated by a sign reading "Stop on Red Signal."
3. When physical conditions prevent a driver traveling at normal speed from having a continuous view of the signal for 10 seconds before reaching the stop line, an auxiliary signal or a "Drawbridge Ahead" sign with a hazard identification beacon may appear.
4. Should be used in conjunction with gates and other types of protection used at drawbridges.
5. May be supplemental to bells in order to provide additional warning.

Sample

Deployment  
(where & why)

Installed at drawbridges to notify traffic to stop because of road closure (bridge open).

Interpretation or  
Driver Action Required  
(legal & social requirements)

A driver must obey the signals and must stop when signal indicates drawbridge is opened.

Physical Characteristics  
(color, shape & message)

1. A minimum of one signal face should be located over the roadway.
2. A sign with legend "Emergency Signal" should be mounted adjacent to each signal face.
3. A hazard identification beacon should be in advance of emergency traffic signal and should be accompanied by an appropriate warning sign.
4. A minimum of one signal face should face the direction of approach of emergency vehicle.

Sample

Deployment  
(where & why)

These are located in an area that does not meet the warrants prescribed for various types of other traffic signal installations (at an intersection or a direct access to a street from a building housing the emergency vehicle. Its purpose is to obtain the right-of-way for an authorized emergency vehicle (ambulance, fire engine, police car, etc.)

Interpretation or  
Driver Action Required  
(legal & social requirements)

When the signal is yellow, drivers should proceed with caution. When the signal is red, drivers should stop and wait for indication to proceed. At all times drivers should be alert for emergency vehicle movements.

Physical Characteristics  
(color, shape & message)

Two horizontal red lights flashing alternately (may be accompanied by horizontal gate lowered in front of auto). The railroad-highway grade gate arms shall be striped on both sides with alternate diagonal reflectorized stripes of red and white.

Sample

Deployment  
(where & why)

Used where there is a need beyond normal signs to indicate where a railroad crosses a highway

1. Because of reduced visibility
2. Because of high vehicular volume and/or speed
3. Frequent train crossings or high speed train movement

Interpretation or  
Driver Action Required  
(legal & social requirements)

1. A driver of a vehicle approaching a railroad grade crossing shall stop within 50 feet, but not less than 15 feet from the nearest rail of such railroad and shall not proceed until he can do so safely when:
  - a) A clearly visible electric or mechanical signal device gives warning of the immediate approach of a railroad train.
  - b) A crossing gate is lowered or a human flagman gives or continues to give a signal of the approach or passage of a railroad train.
2. No person shall drive any vehicle through, around or under any crossing gate or barrier at a railroad crossing while such gate or barrier is closed or is being opened or closed.

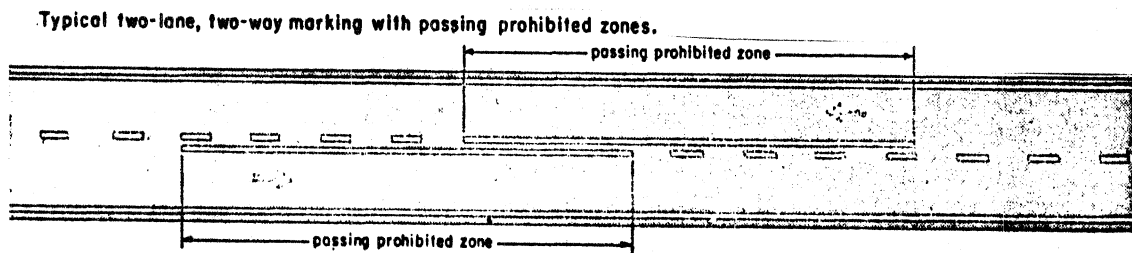
**PAVEMENT MARKINGS**

Physical Characteristics  
(color, shape & message)

Types:

1. A broken yellow line
2. A broken yellow and a solid yellow line
3. A double solid yellow line

Sample



Deployment  
(where & why)

A center line separates traffic traveling in opposite directions. It need not be at the geometric center of the pavement. In locations where a continuous center line is not required, short sections may be useful on approaches to important intersections marked crosswalks, or railroad crossings and around curves or over hill crests, to warn of any unusual condition and control traffic. Center lines are desirable on paved highways under the following conditions:

1. In rural districts on two lane pavements 16 feet or more in width with prevailing speeds of greater than 35 mph.
  2. In residence or business districts on all through highways, and on other highways where there are significant traffic volumes.
  3. On all undivided pavements of four or more lanes.
- Center lines are also desirable at other locations where an engineering study indicates a need for them.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Passing is permitted with a normal broken yellow line.  
Passing is permitted in one direction where there is a double

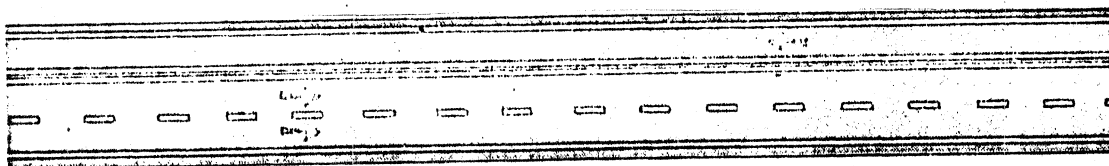
line consisting of a normal broken yellow line and a normal solid yellow line.

Passing is prohibited in both directions where there is a double line consisting of two normal solid yellow lines.

Physical Characteristics  
(color, shape & message)

White lines about 15 feet in length separated by 25 foot intervals

Sample



*Typical two-way marking applications.*

Deployment  
(where & why)

These are generally used to separate lines of traffic moving in the same direction

1. On all multi-lane highways
2. At congested locations where the roadway will accommodate more lanes of traffic than would be the case without the use of lane lines

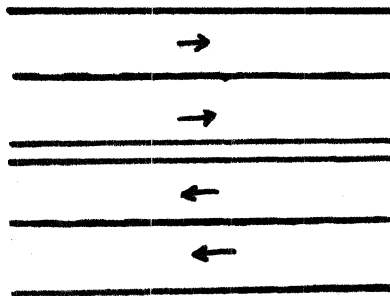
Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers may change lanes with care when it is safe to do so.

Physical Characteristics  
(color, shape & message)

Continuous white line

Sample



Deployment  
(where & why)

These are generally used to separate lines of traffic moving in the same direction

1. On all multi-lane highways
2. At congested locations where the roadway will accommodate more lanes of traffic than would be the case without the use of lane lines

A normal solid white line may be used as the lane line in critical areas where it is advisable to discourage lane changing. Typical locations for such applications are tunnels or bridges having width restrictions and interchange areas where lane changing disrupts traffic flow.

A solid white line may be used to separate through traffic lanes from special secondary lanes, such as uphill truck lanes, left or right turn lanes and transit bus lanes.

Interpretation or  
Driver Action Required  
(legal & social requirements)

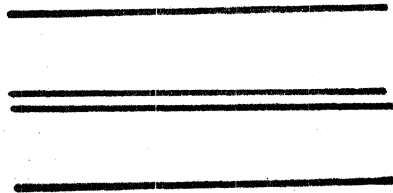
Drivers are discouraged from changing lanes.



Physical Characteristics  
(color, shape & message)

Continuous double white line

Sample



Deployment  
(where & why)

These are generally used to separate lines of traffic moving in the same direction when lane changing is prohibited.

1. On all multi-lane highways
2. At congested locations where the roadway will accommodate more lanes of traffic than would be the case without the use of lane lines

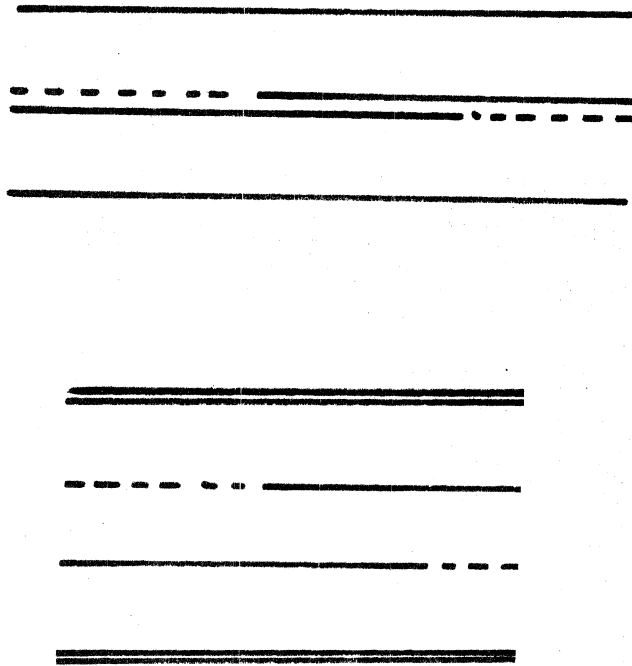
Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers may not change lanes.

Physical Characteristics  
(color, shape & message)

1. One direction no passing marking
  2. Two direction no passing marking
- The lines may be yellow white to indicate a no passing zone.

Sample



Deployment  
(where & why)

1. On a two lane highway the no passing marking should follow the center line throughout the no passing zone. It is used where it is desirable or necessary to limit the passing by vehicles. Example: on hills, curves, etc.
2. On a three lane highway where visibility is limited or where the no passing marking is being moved from one direction to the opposite direction, the no passing marking shall start in advance of the no passing zone at the left hand lane line of the center lane and shall extend diagonally across the center lane to the right hand line at the beginning of the no passing zone, and thence extend along the lane line to the end of the zone.

3. The no passing marking is also used on two way roadways at pavement width transitions and on approaches to obstructions which must be passed on the right. It may also be used on approaches to railroad grade crossings and other locations where passing should be prohibited.

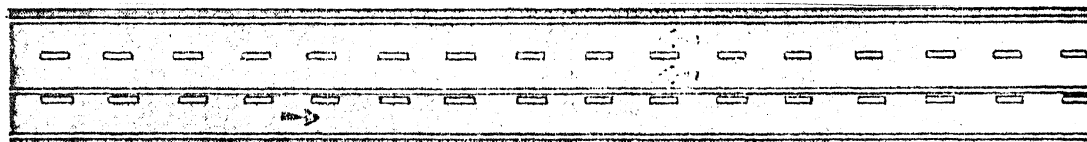
Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers may not pass while this marking is next to his path. Otherwise he may pass with care.

Physical Characteristics  
(color, shape & message)

1. Right edge line and paved shoulder marking, if used, shall be solid white.
2. Left edge markings on one way roads should be solid yellow.

Sample



Deployment  
(where & why)

Pavement edge line markings provide an edge-of-pavement guide for drivers. They may also be used where edge delineation is desirable to reducing driving on paved shoulders or refuge areas of lesser structural strength than adjacent pavement. Edge lines should not be continued through intersections and should not be broken for driveways.

Interpretation or  
Driver Action Required  
(legal & social requirements)

The driver should use edge markings as a guide and should avoid driving onto the shoulder or refuge areas unless he is stopping.

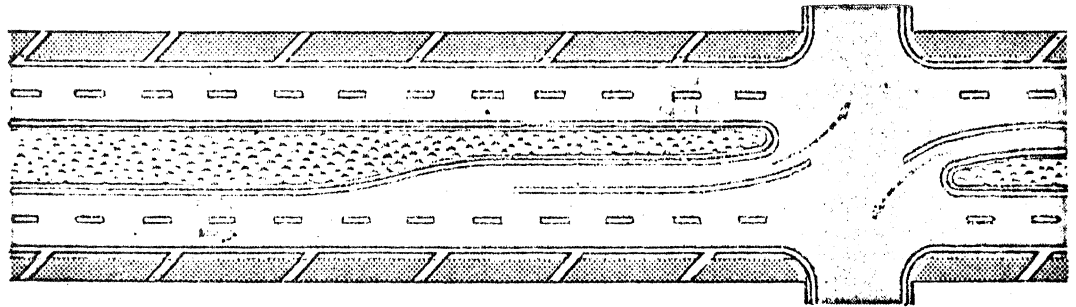
Physical Characteristics  
(color, shape & message)

Types:

1. Dotted line
2. Solid lane lines
3. Channelizing lines

The lines may be yellow or white.

Sample



Deployment  
(where & why)

1. Where road design or reduced visibility conditions make it desirable to provide control or to guide vehicles through an interchange or intersection (such as at offset, skewed, complex multi-legged intersections or where multiple turn lanes are used) a dotted line may be used to extend markings as necessary through the interchange or intersection area.
2. Where greater restriction is required, solid lane lines or channelizing lines may be continued through intersections. The frequent use for the channelizing marking is turning movements.

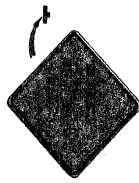
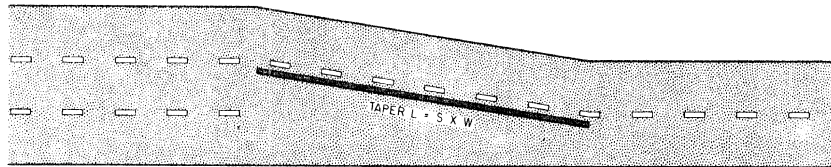
Interpretation or  
Driver Action Required  
(legal & social requirements)

The driver should avoid lane changing and follow pavement markings in his lane.

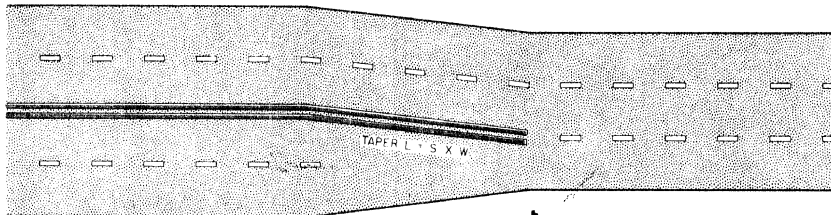
Physical Characteristics and Sample  
(color, shape & message)

Yellow or double yellow solid lines are used to indicate lane reduction.

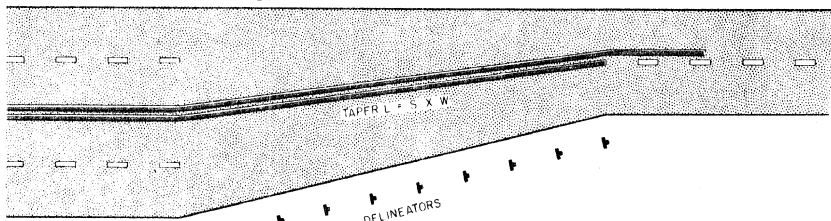
A - FROM 3 LANES TO 2 LANES



B - FROM 4 LANES TO 3 LANES



C - FROM 4 LANES TO 2 LANES



L = Length in feet  
S = 85th percentile speed  
W = Offset in feet

Deployment  
(where & why)

Where pavement markings are used, lane reduction markings shall be used to guide traffic at points where the pavement width changes to a lesser number of through lanes. These markings shall be No Passing markings and shall be used to prohibit passing throughout the transition area, in the direction of convergence. Lane lines should be discontinued one-quarter of the distance between the lane drop warning sign and the point of convergence. Edge lines should be installed at least from the location of the lane drop warning sign to the beginning of the narrower road.

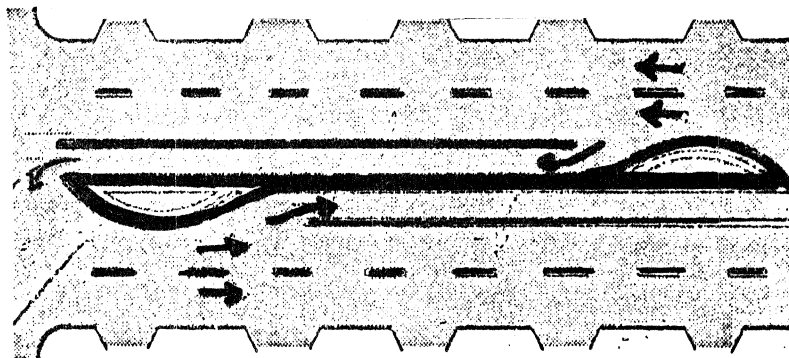
Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should reduce speed and merge with traffic in other lane(s).

Physical Characteristics  
(color, shape & message)

Wide or double solid white line;  
Other markings in the island area such as crosshatching shall  
be white.

Sample



Deployment  
(where & why)

May be used to form traffic islands where travel in the same  
direction is permitted on both sides.

Interpretation or  
Driver Action Required  
(legal & social requirements)

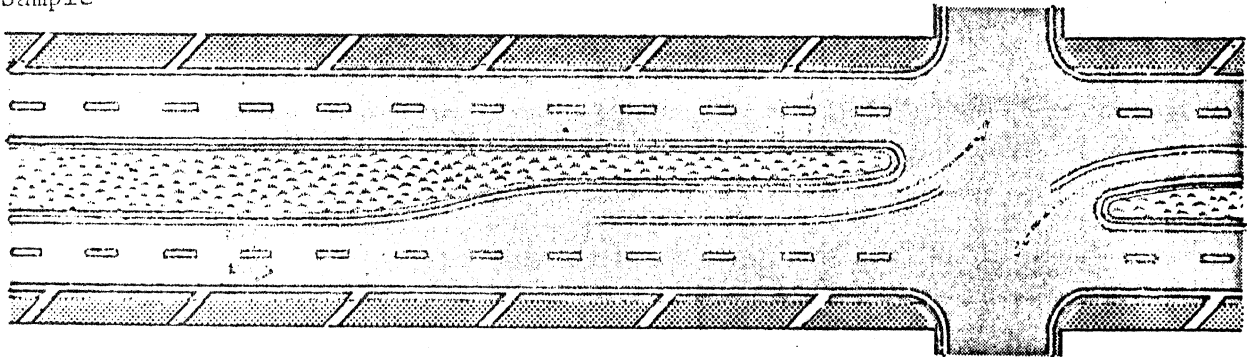
Driver should not drive in the area outlined by these lines.



Physical Characteristics  
(color, shape & message)

Two double yellow lines  
Other markings in median island area such as crosshatching  
shall be yellow.

Sample



Deployment  
(where & why)

Island separates traffic in opposite directions

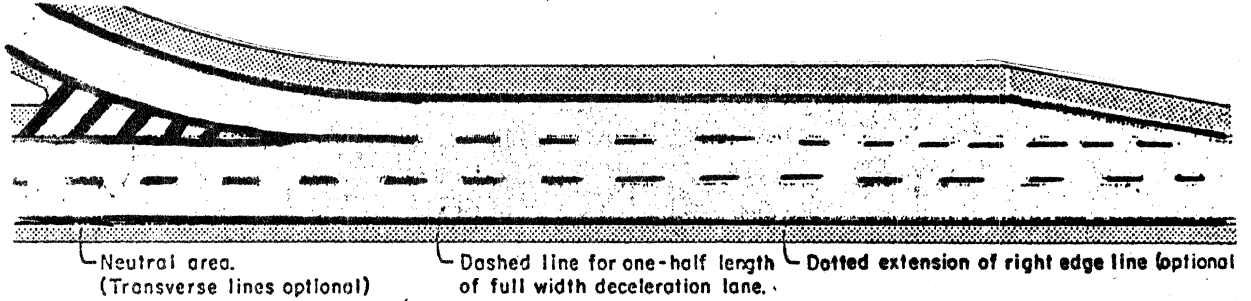
Interpretation or  
Driver Action Required  
(legal & social requirements)

Has the same effect as other islands  
May be crossed at right angles in certain cases

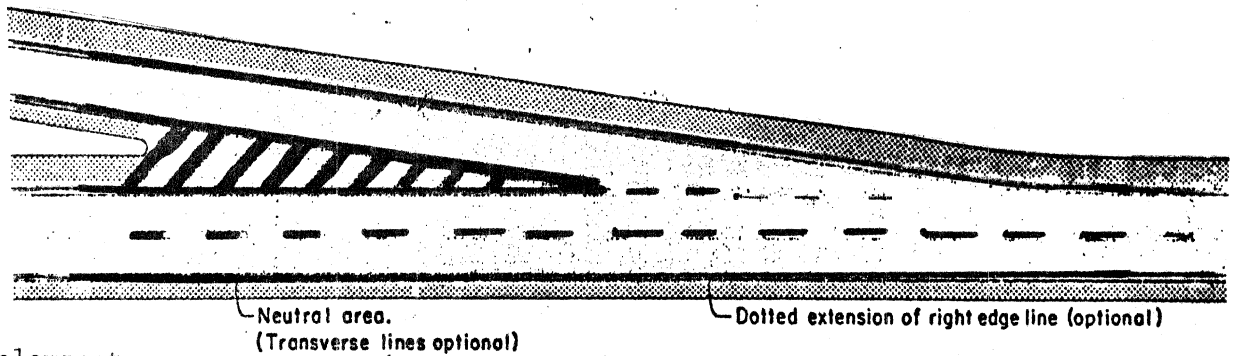
Channelizing lines

Physical Characteristics and Sample  
(color, shape & message)

**PARALLEL DECELERATION LANE**



**TAPERED DECELERATION LANE**



Deployment  
(where & why)

*Typical exit ramp markings.*

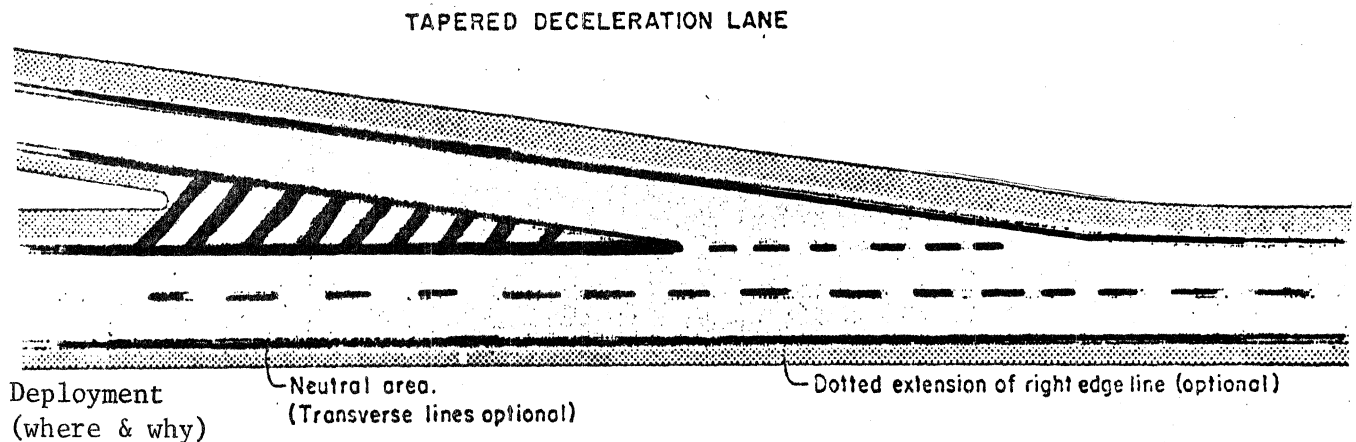
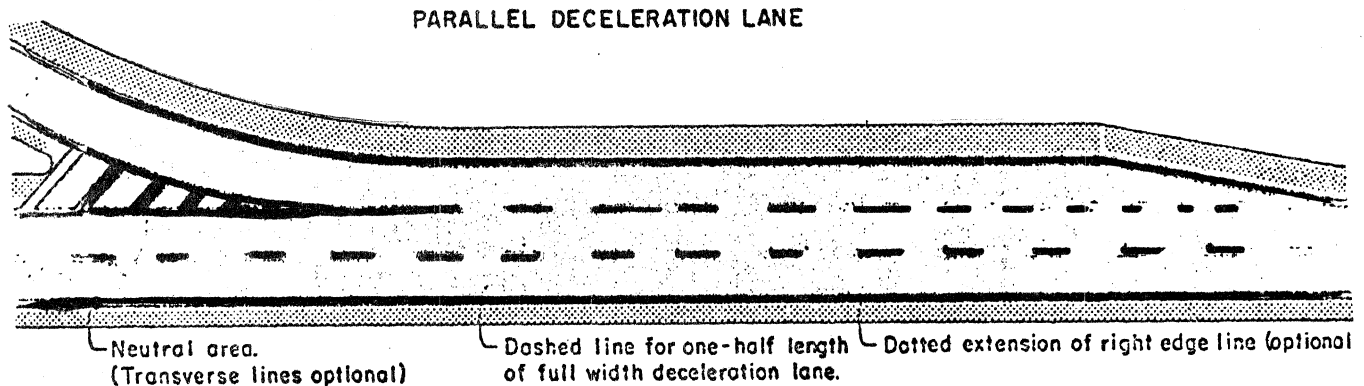
At exit ramps of expressways they provide a neutral area which reduces the probability of collision with the curb nose and also directs exiting traffic at the proper angle for smooth divergence into the ramp. The channelizing line provides safe and efficient merging of traffic at entrance ramps.

Interpretation or  
Driver Action Required  
(legal & social requirements)

These markings serve as a guide to direct drivers onto or off of an expressway.

Channelizing Lines

Physical Characteristics and Sample  
(color, shape & message)



*Typical exit ramp markings.*

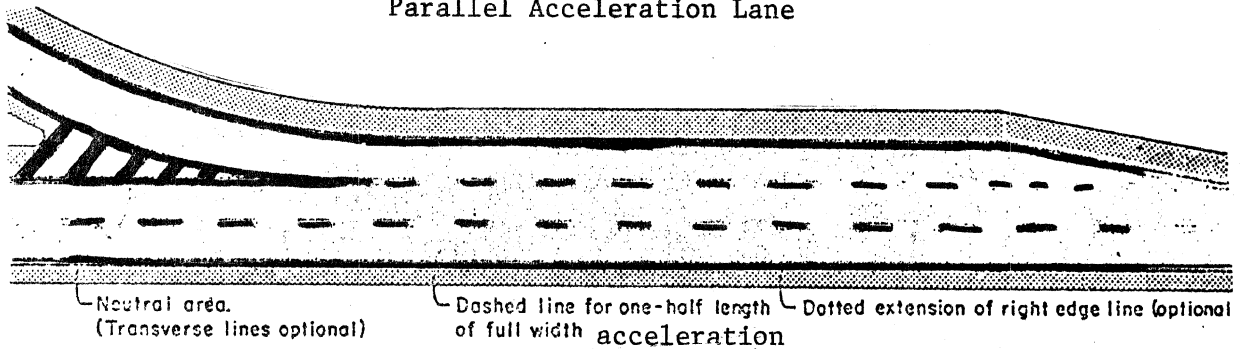
A channelizing line should be placed along the sides of the neutral area between the edges of the main roadway and the exit ramp lane at the gore of every exit ramp terminal. With a parallel acceleration lane a lane line should be extended from the beginning of the channelizing line for a distance of about one-half of the length of the full width deceleration lane. White markings may be placed in the neutral area for special emphasis.

Interpretation or  
Driver Action Required  
(legal & social requirements)

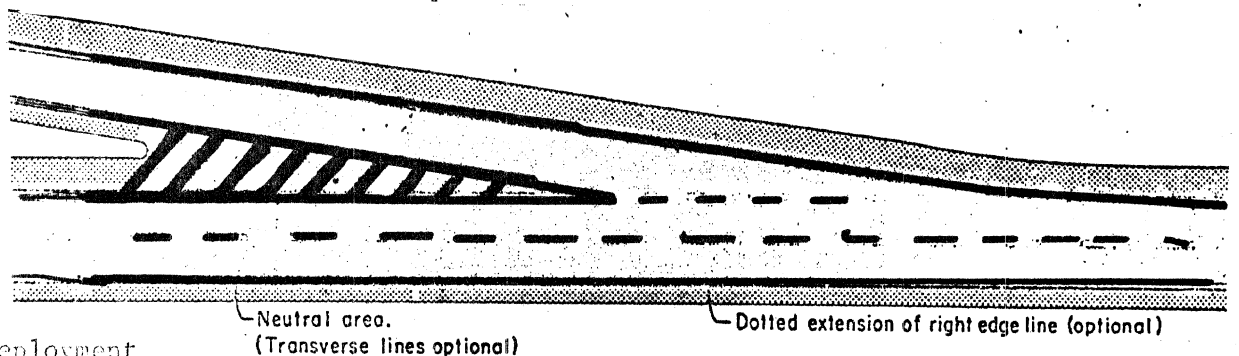
Drivers must turn off at the exit at an angle so as not to enter the "neutral" area defined by Exit Ramp markings.

Physical Characteristics and Sample  
(color, shape & message)

Parallel Acceleration Lane



Tapered Acceleration Lane



Deployment  
(where & why)

Typical entrance ramp markings

A channelizing line should be placed along the side of the neutral area adjacent to the ramp lane at the gore of every entrance ramp terminal. With a parallel acceleration lane, a lane line should be extended from the end of the channelizing line for a distance about half the length of the full width acceleration lane. With a tapered acceleration lane, a lane line may be placed to extend the channelizing line, but not beyond the point where the tapered lane meets the near side of the through traffic lane.

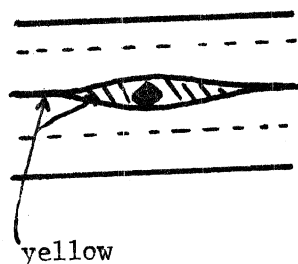
Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers must enter the roadway at an angle so as not to enter the "neutral" area defined by the Entrance Ramp markings.

Physical Characteristics  
(color, shape & message)

A painted median island may be installed in advance of the obstruction by placing yellow markings in the triangular area between the markings.

Sample



Deployment  
(where & why)

Pavement markings shall be used to guide traffic on the approach to fixed obstructions within a paved roadway. An obstruction may be so located that all traffic must keep to the right of it, or it may be between two lanes of traffic moving in the same direction. The markings in either case must be designed to deflect traffic away from the obstruction by a channelizing line or no passing marking.

Obstruction approach markings for bridge supports, refuge islands, median islands, and channelization islands shall consist of a diagonal line, or lines, extending from the center line of lane line to a point 1 to 2 feet to the right side, or to both sides, of the approach end of the obstruction.

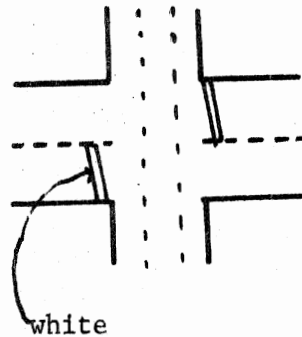
Interpretation or  
Driver Action Required  
(legal & social requirements)

Depending on whether traffic may pass either to the right or left, or in only one direction, the driver should follow pavement markings and merge when necessary. He must not drive in the marked area.

Physical Characteristics  
(color, shape & message)

These are solid lines in white which are 12 to 24 inches wide and extend across all approach lanes.

Sample



Deployment  
(where & why)

These are used in rural and urban areas where it is important to indicate the point at which vehicles are required to stop in compliance with a stop sign, traffic signal, officer's direction or other legal requirement. They should be placed four feet in advance and should be parallel to the nearest crosswalk line. If used with a stop sign they should be placed in line with the stop sign, if possible.

Interpretation or  
Driver Action Required  
(legal & social requirements)

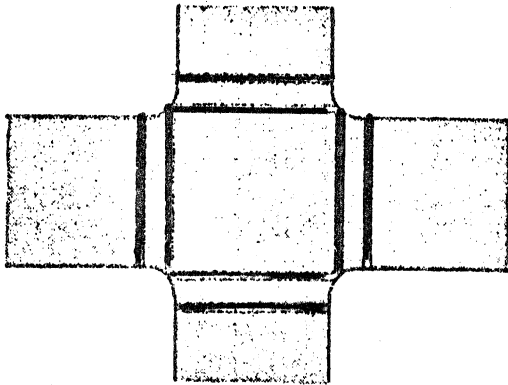
A driver when stopping for a red light, stop sign, etc., should stop with the front bumper at the marked stop line.

Physical Characteristics  
(color, shape & message)

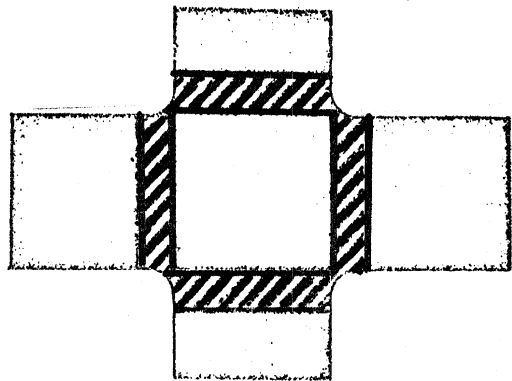
These are solid white lines marking both edges of a crosswalk. For added visibility the area may be marked with white diagonal lines or white longitudinal lines. When these lines are used the transverse crosswalk lines may be omitted.

Sample

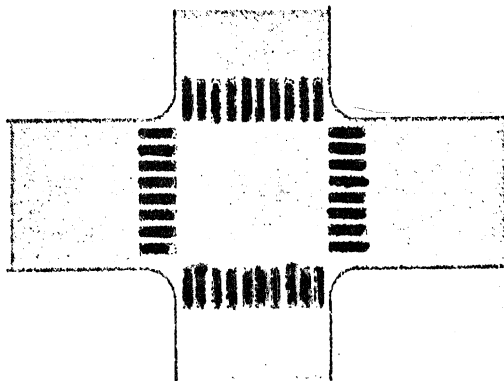
Standard crosswalk marking.



Crosswalk marking with diagonal lines for added visibility.



Crosswalk marking with longitudinal lines for added visibility.



Deployment  
(where & why)

Crosswalk markings at signalized intersections and across intersectional approaches on which traffic stops, serve primarily to guide pedestrians in the proper paths. Crosswalk markings across roadways on which traffic is not controlled by traffic signals or stop signs must also serve to warn the motorist of a pedestrian crossing point, and, at non-intersectional locations will legally establish the crosswalk. Since non-intersectional pedestrian crossings are generally unexpected by the motorist, warning signs should be installed and adequate visibility provid-

ed by parking prohibitions. Crosswalks should be marked at all intersections where there is substantial conflict between vehicle and pedestrian movements. Marked crosswalks should also be provided at other appropriate points of pedestrian concentration, such as at loading islands, mid-block pedestrian crossing, and/or where pedestrians could not otherwise recognize the proper place to cross. Crosswalk markings should be installed across roadways where traffic is not controlled by traffic signals or stop signs and at non-intersection locations only after careful engineering study, and should not be used indiscriminately.

Interpretation or  
Driver Action Required  
(legal & social requirements)

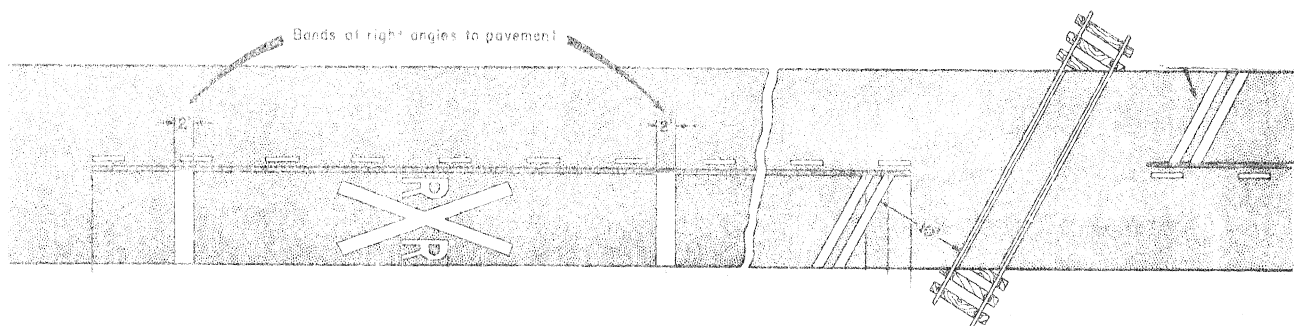
Driver is warned that pedestrian crossing actions may be expected. Driver must yield the right-of-way to pedestrians. Pedestrians should use crosswalks and obey traffic signals when crossing.



Physical Characteristics  
(color, shape & message)

Pavement markings in advance of a railroad crossing shall consist of an X, the letters RR, a no passing marking, and certain transverse lines. Such markings should be white except for no passing markings.

Sample



Deployment  
(where & why)

1. The above should be placed on all paved approaches to railroad crossings.
2. These markings, if physically feasible, shall be placed at all grade crossings where railroad highway grade crossing signals or automatic gates are operating, and at all other crossings where the prevailing speed of highway traffic is 40 mph or greater.

3. The markings shall also be placed at crossings where engineering studies indicate there is a significant potential conflict between vehicles and trains. At minor crossings or in urban areas, these markings may be omitted if engineering study indicates that other devices installed provide suitable protection. Such markings shall be white except for the no passing markings.

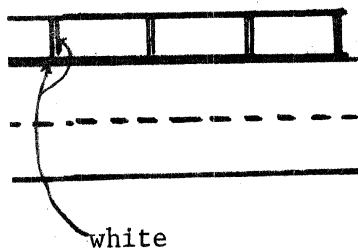
Interpretation or Driver  
Action Required  
(legal & social requirements)

Drivers are warned that a railroad crossing is present and should approach such railroad crossing with caution.

Physical Characteristics  
(color, shape & message)

White parking space markings.

Sample



Deployment  
(where & why)

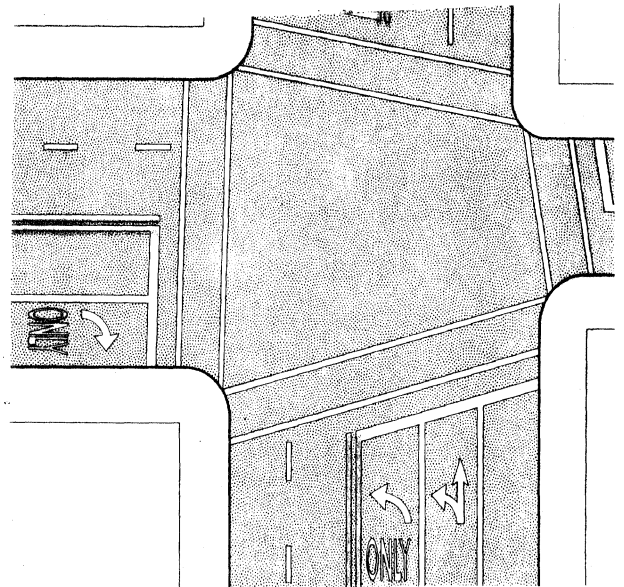
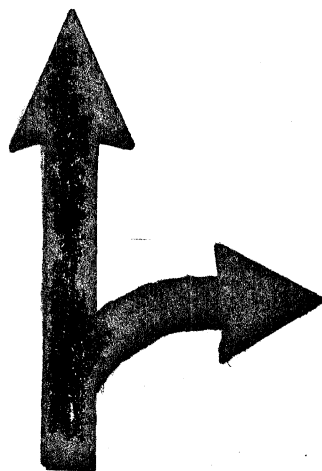
The marking of parking space limits on urban streets encourages more orderly and efficient use of parking spaces where parking turnover is substantial and tends to prevent encroachment on fire hydrant zones, bus stops, loading zones, approaches to corners, clearance spaces for islands and other zones where parking is prohibited.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers must park within designated spaces.

**Physical Characteristics**  
(color, shape & message)

These should be limited to not more than a total of three lines of words and/or symbols, and should be white. Symbol messages are generally preferable to word messages. The letters and symbols should be greatly elongated in the direction of traffic movement because of the low angle at which they are viewed by approaching drivers. Large letters, symbols and numerals should be used, 8 feet or more in height; and, if the message consists of more than one word, it should read "UP", i.e., the first word should be nearest to the driver. Pavement messages should generally be no more than one lane in width except standard RXR and school messages. Where speeds are low, somewhat smaller characters may be used. The space between lines should at least be four times the height of the characters for low but not more than ten times the the height of the characters under any conditions.



Deployment  
(where & why)

1. Since an uncontrolled use of pavement markings can result in driver confusion, the number of different word and symbol markings should be minimized.
2. Word and symbol markings should not be used for mandatory messages except in support of standard signs.
3. Symbol arrows indicating a single mandatory movement should include the word "Only".
4. Signs or markings should be repeated in advance of mandatory turn lanes when necessary to prevent entrapment and to help motorists select the appropriate lane before reaching the end of the line of waiting vehicles.
5. The word "Stop" shall not be placed on the pavement in advance of a stop line unless every vehicle is required to stop at all times. The word "Stop" shall not be used on the pavement unless accompanied by a stop line and stop sign.

Interpretation or  
Driver Action Required  
(legal & social requirements)

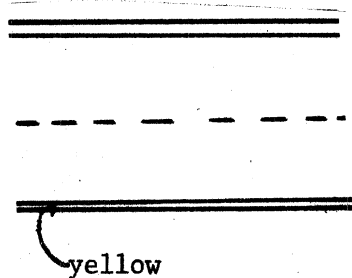
Word and symbol markings on pavement may be used for the purpose of guiding, warning, or regulating traffic.

Drivers should note these markings and take appropriate action.

Physical Characteristics  
(color, shape & message)

There are special colors for curb markings prescribed by local authorities.

Sample



Deployment  
(where & why)

1. Special colors for curb markings are used as supplements to standard signs.
2. When signs are not used, intended meaning should be stenciled on curb.
3. Signs should always be used with markings in areas where curb markings are obliterated by accumulations of snow and ice.

Interpretation or  
Driver Action Required  
(legal & social requirements)

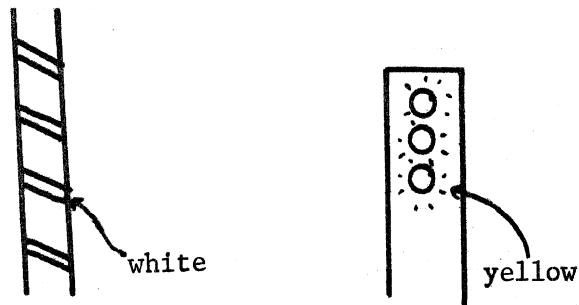
Driver must obey parking regulations.

**OBJECT MARKINGS**

Physical Characteristics  
(color, shape & message)

1. Either a nine-button marker consisting of nine reflectors having a minimum dimension of approximately 3 inches, yellow in color, mounted symmetrically on an 18 inch diamond background, either black or yellow in color; or an 18 inch diamond, all yellow reflector. These may be larger if conditions warrant.
2. Either a three-button marker consisting of three yellow reflectors having a minimum dimension of approximately 3 inches, arranged either horizontally or vertically; or a 6 inch x 12 inch rectangular yellow reflector. These may be larger if conditions warrant.
3. Striped marker consisting of a vertical rectangle approximately 1 foot by 3 feet in size with alternating black and reflectorized yellow or white stripes sloping downward at an angle of 45 degrees toward the side of the obstruction on which traffic is to pass. The minimum width of the yellow or white stripe shall be 3 inches. A better appearance can be achieved if the black stripes are wider than the yellow or white stripes. The black-on-yellow marker shall be used to the left of the direction of travel.

Sample



Deployment  
(where & why)

These are used when obstructions within or adjacent to the road require marking.

Interpretation or  
Driver Action Required  
(legal & social requirements)

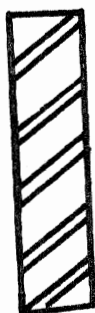
Driver should avoid the obstruction.



Physical Characteristics  
(color, shape & message)

1. A large surface such as a bridge pier may be painted with diagonal stripes.
2. Appropriate signs directing traffic to one or both sides of the obstruction may be used in lieu of object marker.
3. In addition to warnings on the face of an obstruction in the road, warning of approach to the obstruction should be given by appropriate pavement markings.

Sample



Deployment  
(where & why)

Used when there is an obstruction in the road.

Interpretation or  
Driver Action Required  
(legal & social requirements)

A driver should follow directions from the signs, pavement markings, etc., so as to avoid the object.

Physical Characteristics  
(color, shape & message)

For color and shape see "Object Marker Design" 3C-1, p. 142  
and "Objects in the Roadway" 3C-2, p. 143.

Sample

See pages 142 and 143.

Deployment  
(where & why)

Objects not actually in the roadway may be so close to the edge of the road that they need a marker. These include underpass piers, bridge abutments, handrails and culvert headwalls. In some cases there may not be a physical object involved, but other roadside conditions such as a narrow shoulder drop-off, gores, small islands and abrupt changes in roadway alignment may make it undesirable for a driver to leave the roadway.

Interpretation or  
Driver Action Required  
(legal & social requirements)

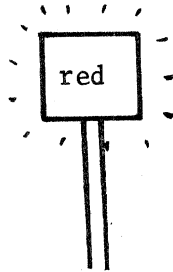
Drivers should obey signs and markings.

Physical Characteristics  
(color, shape & message)

Nine Button Marker: Nine reflex reflectors having a minimum dimension of about three inches; red in color, mounted symmetrically on an 18 inch square background, either in red or black.

Red Reflector: Eighteen inch square all red reflector

Sample



Deployment  
(where & why)

Located at the end of a roadway, at which point there is no alternate vehicular path.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers must stop and turn around, for there is no through passage.

**ROADWAY DELINEATORS**

Physical Characteristics  
(color, shape & message)

These are reflector units capable of reflecting light when illuminated by the upper beam of standard auto lights. They may be white, yellow or red.

Sample

Deployment  
(where & why)

- I.a. Yellow
  - 1. Separates traffic going in opposite directions
  - 2. Left edge of one-way roadways
- b. White
  - 1. Right edge of roadways
- c. Red
  - 1. Delineates roadway that should not be used or entered
- II. May be used on continuous sections of highway or through short stretches where the changes in alignment
- III. Reflectorized
  - a. Solid yellow
    - 1. Curbs of islands located in the line of traffic flow where the curb serves to channel traffic to the right of the obstruction
  - b. Solid white
    - 1. Where traffic may pass on either side of island
- IV.a. Single white reflectors
  - 1. Two-way, two-laned road on right
  - 2. Placed on left side, especially at sharp curves
- b. Expressways
  - 1. White delineators--right side
  - 2. Yellow delineators--left side

- V. Elongated or double unit delineators
  - a. 100 feet intervals along acceleration and deceleration lanes and tangent portions of interchange ramps
  - b. On outside of curve on interchange ramp
  - c. Red used on the reverse side of any delineator whenever it would be viewed by motorist traveling in the wrong direction
  
- VI. Narrowing of pavement where either outside or inside lane merges into an adjacent lane placed adjacent to lane affected throughout length of convergence--appropriate color used for particular pattern and direction

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should follow appropriate direction of lane control that is being emphasized by delineators.

Note: CURB MARKINGS FOR DELINEATION

Reflectorized solid yellow should be placed on the curbs of islands located in the line of traffic flow where the curb serves to channel traffic to the right of the obstruction. Reflectorized solid white should be used when traffic may pass on either side of the island.

**COLORED PAVEMENTS**

Physical Characteristics  
(color, shape & message)

Red: Used only on the approaches to a stop sign which is in use 24 hours a day. The length of the colored surface is related to the approach speed of traffic and gives the driver 2 to 4 seconds advance warning.

Yellow: Used only for separating traffic flows in the opposite direction.

White: Used for delineation to provide contrast with other colors.

Sample

Deployment  
(where & why)

Used on approaches to stop signs, for marking medians, and for purposes of delineation.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Colored pavements may be used to warn a driver of a sign which will accompany the marking, therefore driver should follow the direction of the sign.

To further delineate pavement markings which separate traffic from other traffic, obstructions, or the side of the road

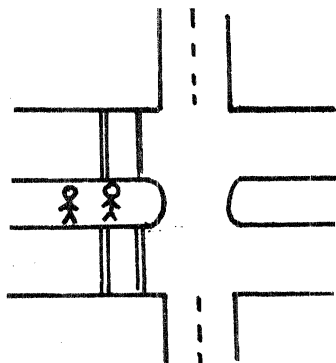


**TRAFFIC ISLANDS**

Physical Characteristics  
(color, shape & message)

An island dividing two or more lanes of traffic, used to accommodate pedestrians. (See "Traffic Channelizing Islands", 5A-3 for further description.)

Sample



Deployment  
(where & why)

Refuge islands are particularly useful at intersections in urban areas where there is a considerable amount of pedestrian traffic and where heavy volumes of vehicular traffic make it difficult and dangerous for pedestrians to cross, such as:

- a. on multi-lane roadways
- b. in large or irregularly shaped intersections
- c. at signalized intersections to provide a place of safety between different traffic streams.

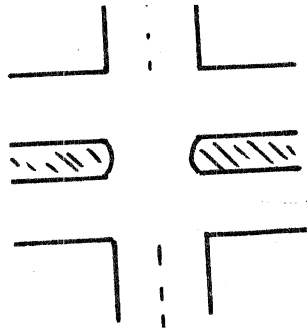
Interpretation or  
Driver Action Required  
(legal & social requirements)

Passenger loading islands are considered to be a special class of refuge islands inasmuch as they serve as a pedestrian refuge while loading and unloading passengers from transit vehicles. The specific function of a refuge island is to provide a place of safety for pedestrians who cannot cross the entire roadway width at one time in safety because of changing traffic signals or oncoming traffic.

Physical Characteristics  
(color, shape & message)

A divisional island sufficiently wide to separate two or more lanes of traffic. (See "Traffic Channelizing Islands", 5A-3 for further description.)

Sample



Deployment  
(where & why)

The function of a divisional island is to separate opposing traffic and they also may be used to separate traffic in the same direction, e.g., to divide left turn traffic in a median lane from the through traffic. Divisional islands are used to guide traffic around an obstruction within the roadway (such as a bridge pier), in advance of an intersection to separate opposing traffic and may be located to prevent overtaking and passing at hazardous points, such as sharp curves or narrow underpasses. Where divisional islands are continuous, they are called medians, the more important functions are as follows:

- a. Medians provide an insulating area between opposing streams of moving traffic.
- b. Medians provide protection and control of cross and turning traffic.
- c. Medians provide a refuge for pedestrians

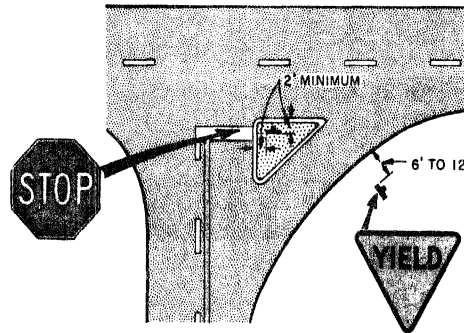
Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should not drive on island or median, nor use it to make U-turns.

Physical Characteristics  
(color, shape & message)

Islands generally are either narrow and elongated or triangular in shape. The size should be governed by site conditions and the function of the island. An island should be large enough to command attention. Shape and size vary widely according to intersection conditions. Necessity for islands should be determined by careful study. Islands may be designated as follows: (1) raised and outlined by curbs and filled with pavement, turf, or other material; (2) formed by pavement markings, sometimes supplemented by buttons or raised bars or flexible stanchions on all-paved areas; or (3) unsurfaced areas sometimes supplemented by delineators, guideposts, or other devices.

Sample



CHANNELIZED INTERSECTION

Deployment  
(where & why)

1. Channelizing islands may be installed in areas that otherwise would be broad expanses of pavement, to bring about an orderly flow of traffic.
2. Channelization is particularly helpful at streets intersecting at oblique angles, at 3-leg junctions, and at multileg intersections.
3. Islands should be carefully planned and designed to provide travel paths that are obvious, easy to follow, and continuous so as not to constitute a hazard in the roadway.
4. The number of channelizing islands used at any intersection should be kept to a minimum and the entire layout should be the simplest design that will accomplish the desired intersection control. Usually a few carefully placed islands of above-minimum size are more effective than a greater number of small islands which create multiple channels and cause confusion.
5. Islands should be clearly visible at all times and from a position sufficiently in advance so that the motorist will not be surprised by their presence. Islands should occupy the

minimum of roadway space needed for the purpose and yet be of sufficient size to be noticeable.

6. Generally, divisional islands should not be placed where they will confine either side of the roadway to less than two through traffic lanes, except when a short island is used on two-lane roads carrying relatively low volume of traffic.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Islands may be provided for separation and special control of turning movements. The primary function is to control and direct a motorist into the proper channel for his intended route.

SIGN OR DEVICE Islands - General 5B-1

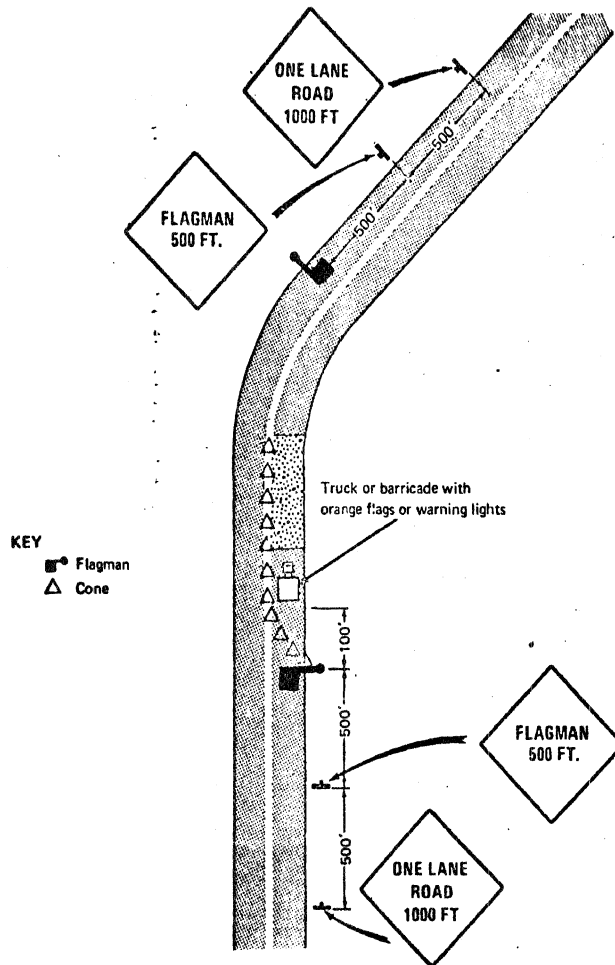
1. All islands and the proper channels of travel through them should be made clearly visible at night. Reflectrorization is needed to warn of the presence of refuge islands on nights when illumination may not be in operation and for other islands if lighting facilities are not available.
2. All approach noses of islands in the line of traffic should be designated by an appropriate sign and/or marker. All signs shall be reflectorized and/or illuminated. Signs are to be used where the island is sufficiently wide, at least one foot wider than the sign. On narrower islands, a reflectorized object marker shall be used.
3. Where delineators are used they shall be white or yellow as determined by the direction(s) of travel they separate, or red facing wrong-way traffic.
4. The approach end of an island or group of islands must be carefully designed to provide a maximum degree of warning of the presence of the island and a definite indication of the proper vehicle path or paths to be followed. This applies to the approach to all refuge and directional islands and to individual divisional islands, but is not applicable to island ends at median openings on a divided street or highway and may not be necessary at secondary islands located within a multiple-island intersection.
5. Appropriate signs for use on island approach noses are:
  - a. Keep right, where all traffic is required to pass to the right of the island nose.
  - b. Keep left, where all traffic is required to pass to the left of the island nose.
  - c. Double arrow warning sign, where traffic may pass to either side of the island and a special warning is needed such as at refuge and loading islands.
  - d. Guide signs such as a route marker assembly or destination signs at large intersection channelizing islands.
6. The above signs should be placed well back from the approach nose of the island to reduce the likelihood of being struck by a vehicle.
7. Object markers should be used on island approach noses to indicate the presence of a raised curb or other obstruction. They may also be needed to define ends of other islands to make them more conspicuous at night, particularly where illumination is not provided.
8. Each travel path through an intersection must be considered separately in positioning delineators to assure maximum effectiveness.

**SIGNS FOR CONSTRUCTION AND MAINTENANCE OPERATIONS**

Physical Characteristics  
(color, shape & message)

See diagram.

Sample



Deployment  
(where & why)

Traffic control devices shall be installed at the inception of construction or maintenance operations, and shall be properly maintained and/or operated during the time such special conditions exist. They shall remain in place only as long as they are needed and shall be immediately removed thereafter. Where operations are performed in stages, there shall be in place only those devices that apply to the conditions present. Signs that do not apply to existing conditions shall be removed, covered, or turned so as not to be readable by oncoming traffic. Barricades and sign supports shall be constructed and erected in a workmanlike manner. Weeds, shrubbery, construction materials or equipment, etc. shall not be allowed to obscure any traffic control device.

Interpretation or  
Driver Action Required  
(Legal & social requirements)

Drivers must obey all signs and control devices and must be extra alert as construction areas present special hazards.

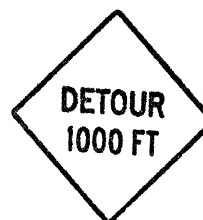
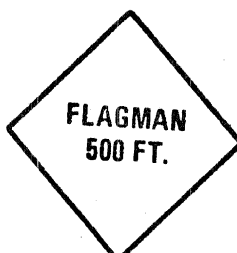


Physical Characteristics  
(color, shape & message)

1. Street or highway construction and maintenance signs fall into the same three main categories as do other traffic signs; namely: Regulatory, Warning, and Guide signs. Many signs normally used elsewhere will also find application for road or street work. Special construction and maintenance signs follow the basic standards for all highway signs as to shape. Sign colors are as prescribed in the design of respective signs, Warning signs for construction and maintenance areas shall have a black legend on an orange background to accentuate these hazardous areas. Existing yellow warning signs already in placed within these areas may remain in use.
2. The use of stripes (other than the standard border) or other geometric patterns or contrasting colors on or around any sign in an attempt to make it more conspicuous, distracts attention from the message, and defeats the purpose of maintaining uniformity and simplicity of design. Such practice is contrary to standards and is accordingly disapproved. However, the use of standard orange flags or yellow flashing warning lights in conjunction with signs is permitted, so long as they do not interfere with a clear view of the sign face.
3. The dimensions of signs shown herein are for standard sizes, which may be increased wherever necessary for greater legibility or emphasis. On secondary highways and city streets smaller signs may be used if authorized by lawful authority. Deviations from standard sizes as prescribed herein shall be in six-inch increments.
4. Standard sign sizes and colors are shown in the illustrations of the individual signs rather than in detailed specifications in the text. Where the orange background is specified and reflectorization is not required, a fluorescent material may be used for increased day-time visibility.
5. All signs intended to be used during hours of darkness shall be reflectorized or illuminated. Where there is serious interference from extraneous light sources and a reflectorized installation is not likely to give effective performance, an illuminated sign should be used. Sign illumination may either be internal or external. When the full face of the sign is outlined by internal illumination, thereby indicating the shape of the sign, background reflectorization is not required.

Where external illumination is provided the light source should be properly shielded to protect drivers from glare. Torches or lanterns are for warning guidance, and shall not be used for sign illumination. Street or highway lighting is not regarded as meeting the requirements for sign illumination.

Sample



## Deployment

(where & why)

1. Signs shall be placed in positions where they will convey their messages most effectively and placement must therefore be accommodated to highway design and alignment. Signs shall be so placed that the driver will have adequate time for response.
2. As a general rule signs will be located on the right-hand side of the street or roadway. Where special emphasis is deemed necessary, dual installations may be made which consist of duplicate signs opposite each other on the left and right sides of the roadway, respectively. Within a construction or maintenance zone, however, it is often necessary and/or desirable to erect signs on portable supports placed within the roadway itself.
3. Signs mounted on barricades, or temporary supports, may be at lower heights, but the bottom of the sign shall not be less than one foot above the pavement elevation. Higher mounting heights are, however, desirable.
4. Where open highway conditions prevail on the approach to the work site, advance warning signs should be placed approximately 1,500 feet in advance of the condition to which they are calling attention. Where a series of advance warning signs are used, the warning sign nearest the work site should be placed approximately 500 feet from the point of restriction with the additional signs at 500-1000 foot intervals. On expressway and limited access facilities the advance warning distance should be increased to one-half mile or more. On city streets where more restrictive conditions generally prevail on the approach to the work area, signs in the immediate vicinity of the work may be placed at closer spacings.
5. Signs on fixed supports are usually mounted on a single post, although those wider than 36 inches or larger than 10 square feet in area should generally be mounted on two posts. Signs mounted on portable supports are suitable for temporary conditions. All such installations should be so constructed to yield upon impact to minimize hazards to motorists.
6. For maximum mobility on certain types of maintenance operations, a large sign may be effectively mounted on a vehicle stationed in advance of the work or moving along with it. This may be the working vehicle itself as in the case of shoulder-mowing or pavement marking equipment, or a vehicle provided expressly for this purpose. These mobile sign displays may be mounted on a trailer, may be provided with self-contained electric power units for flashers and lights, or may be mounted on a regular maintenance vehicle.
7. Guide signs, although ordinarily erected on separate posts, may also be mounted on or above barricades, but should not be permitted to interfere with the effectiveness of necessary regulatory and warning signs.

Physical Characteristics  
(color, shape & message)

Generally rectangular with longer dimension vertical, with a black legend and border on a white background.

Exceptions:

1. Stop sign - octagonal, white legend and border on a red background
2. Yield sign - white inverted triangle with red legend and border band
3. Do Not Enter - white square on which is inscribed a red circle with a white band horizontally across the center of the circle, and words "Do Not Enter" in white letters on upper and lower parts of the circle
4. One Way - either horizontal or vertical rectangular plate, the latter being used more commonly in cities where space is limited

Sample



Deployment  
(where & why)

See regulatory signs, section 2B.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Physical Characteristics  
(color, shape & message)

This is a rectangular sign in white with a black border and legend reading "Road Closed", with a Detour arrow plate. Because this is the last sign the driver will see before he must stop or turn, it is essential that it be large and legible.

Sample



Deployment  
(where & why)

1. The Road (Street) Closed sign shall be used where the roadway is closed to all traffic except contractors' equipment and officially authorized vehicles and shall be accompanied by appropriate detour signs. The sign should be erected at or near the center of the roadway on or above a Type III barricade.
2. The Road (Street) Closed sign shall not be used where traffic is maintained or where the actual closure is some distance beyond the sign and local traffic is permitted access to nearer points. In the latter case the Local Traffic Only sign is used.

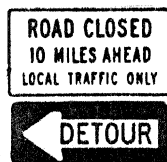
Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should not enter the road which is marked closed and should follow the detour signs.

Physical Characteristics  
(color, shape & message)

This is a rectangular sign in white with a black border and legend reading "Road Closed (10) Miles Ahead--Local Traffic Only", or, optionally for urban use, "Street Closed to Thru Traffic" and shall be accompanied by appropriate detour signing. The words "Bridge Out may be substituted for "Road Closed" where applicable.

Sample



Deployment  
(where & why)

The Local Traffic Only sign should be used where through traffic must detour to avoid a closing of the road or street some distance beyond, but where the road or street is open for traffic up to the point of closure.

Interpretation or  
Driver Action Required  
(legal & social requirements)

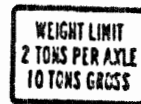
The driver should avoid using this road unless he must use it to get to a place within the closed area.

SIGN OR DEVICE Weight Limit 6B-10

Physical Characteristics  
(color, shape & message)

This is a rectangular sign, white with black legend and border. When weight restrictions are imposed, a marked detour should be provided for vehicles whose legal weight exceeds the limit posted.

Sample



Deployment  
(where & why)

For traffic safety in areas of road or street construction and maintenance a Weight Limit sign shows the gross weight or axle weight that can be permitted on a roadway surface or bridge. Weight restrictions must be consistent with State or local regulations and shall not be imposed without the approval of the authority having jurisdiction over the highway.

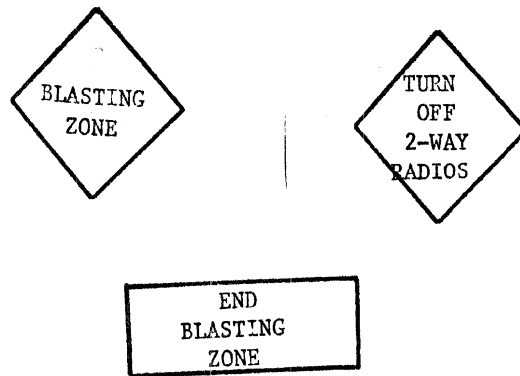
Interpretation or  
Driver Action Required  
(legal & social requirements)

The driver should proceed if his vehicle is within the weight limit, and should detour if it exceeds.

Physical Characteristics  
(color, shape & message)

Generally, these signs have black borders and lettering on an orange background. The messages should be brief, legible, and clearly understandable.

Sample



Deployment  
(where & why)

These are needed to indicate special operations in or around the road.

1. The "Blasting Zone \_\_ Ft." sign is intended for use in advance of any point or work site where there are explosives being used. The "Turn Off 2-Way Radio" and "End Blasting Zone" signs must be used in sequence with this sign. Provision shall be made for covering or removing the sign sequence when there are no explosives in the area or the area is otherwise secured.
2. The "Turn Off 2-Way Radios" sign is to be used in sequence with the "Blasting Zone \_\_ Ft." and "End Blasting Zone" signs and placed at least 1,000 feet from the beginning of the blasting zone. These signs shall be prominently displayed and covered or removed when there are no explosives in the area or the area is otherwise secured.
3. The "End Blasting Zone" sign is to be used to denote the end of the danger zone and shall be placed a minimum of 1,000 feet from the blasting zone, either with or preceding the "End Construction" sign.

Interpretation or  
Driver Action Required  
(legal & social requirements)

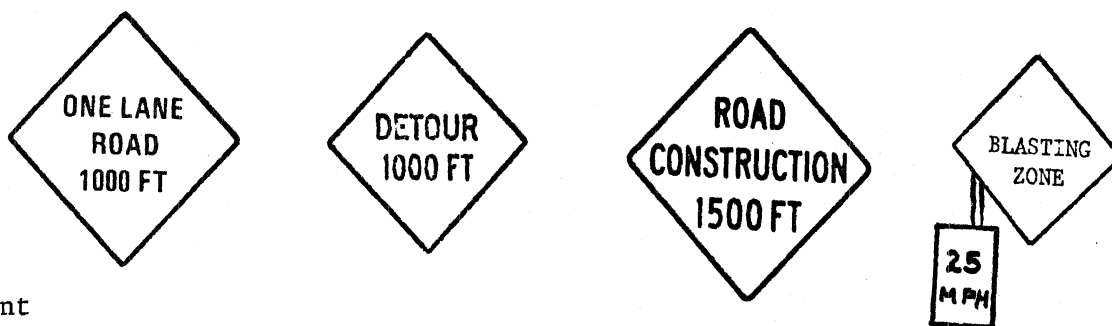
Drivers should turn off two-way radios and otherwise be alerted that blasting may be in progress in the area.

Physical Characteristics  
(color, shape & message)

Warning signs for construction and maintenance shall be diamond shaped (square with one diagonal vertical), having a black symbol or message on an orange background except as provided for herein.

1. Construction or maintenance operations on freeway or expressway facilities may also require large movable warning signs. Mounting considerations for some of these signs may justify a change from the standard diamond shape to a rectangular shape, but such variances should have prior approval of the appropriate highway authority.
2. The square Advisory Speed plate shall have a black message and border, and shall have an orange background when used in conjunction with an orange background sign and shall have a yellow background when used with a yellow background sign.
3. Where distances are to be shown on warning signs as part of the legend, a separate panel with the distance shown thereon may be erected immediately below the sign on the same support.

Sample



Deployment  
(where & why)

Warning signs are used to notify drivers of specific hazards associated with road or street construction or maintenance operations are underway. Within the construction zone there may be a variety of temporary roadway facilities. Pavement width may be reduced. Open excavations may be present in or near the roadway, or travel across an unpaved section may be required. Drivers should be properly alerted to possible dangers ahead in sufficient time to adjust their speed for the hazard. Where any part of the roadway is obstructed or closed, construction approach warning signs are required to alert traffic well in advance of these obstructions or restrictions to normal traffic flow. These signs may be used singly or in combination.



Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver should pay attention to the messages on these warning signs and be prepared to follow any further instructions.

Physical Characteristics  
(color, shape & message)

A diamond shaped sign, orange with a black border and legend. It carries the legend, "Road Construction \_\_\_ Ft." or "Road Construction \_\_\_ Mi.". It may be used in repetition with appropriate legends or in conjunction with other construction signs.

Sample



Deployment  
(where & why)

The advance road construction sign is intended to be used in advance as a general warning of obstructions or restrictions a driver may encounter.

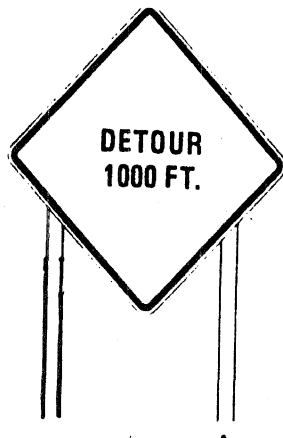
Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should use caution when approaching area and be alert for other signs and warning devices.

Physical Characteristics  
(color, shape & message)

A diamond shaped sign, orange with a black border and legend reading "Detour \_\_\_ Ft." or "Detour \_\_\_ Mi.". It may be used in repetition with appropriate legends or in conjunction with other construction signs.

Sample



Deployment  
(where & why)

The advance detour sign is intended for use in advance of a point at which traffic is diverted over a temporary roadway or route. It is a warning to the driver that a detour is ahead.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should use caution and be alert.

Physical Characteristics  
(color, shape & message)

This is a diamond shaped sign, orange with a black legend and border. The legend reads "One Lane Road \_\_ Ft. (\_\_ Mi.)." It may be used in repetition with appropriate legends or in conjunction with other construction signs.

Sample



Deployment  
(where & why)

The advance one lane road sign is intended for use only in advance of a point where traffic in both directions must use a single lane. If the one lane stretch is of such length as not to be visible throughout from either end, or if the traffic is of such volume that simultaneous arrivals at both ends occur frequently, provision must be made to permit traffic to move alternately under control.

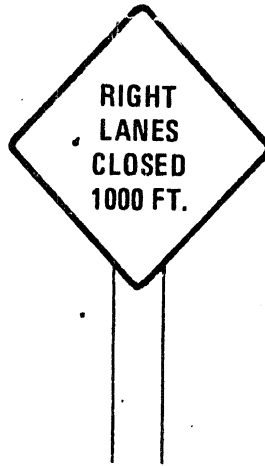
Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should use caution and be alert. They should also look for other traffic control devices.

Physical Characteristics  
(color, shape & message)

This is an orange diamond shaped sign with a black border and legend reading "Right (or Left) Lane Closed \_\_\_ Ft." (or \_\_\_ Mi.). It may be used in repetition with appropriate legends or in conjunction with other construction signs.

Sample



Deployment  
(where & why)

The advance lane closed sign is intended for use where applicable in advance of a point where one lane of a multiple-lane roadway is closed.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should use caution and be alert. They should also prepare to change lanes and be alert for others changing lanes.

Physical Characteristics  
(color, shape & message)

This is an orange diamond shaped sign with a black border and legend reading "Road Closed \_\_\_ Ft." or "Road Closed \_\_\_ Mi.". It may be used in repetition with appropriate legends or in conjunction with other construction signs.

Sample



Deployment  
(where & why)

The advance road closed sign is intended for use in advance of a point at which a roadway is closed to all traffic or to all but local traffic.

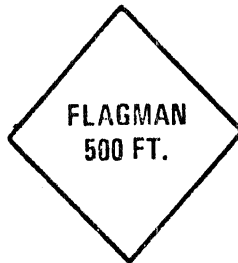
Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should use caution and be alert. They should be looking for signs providing alternate route information.

Physical Characteristics  
(color, shape & message)

This is an orange diamond shaped sign with black border and legend reading "Flagman \_\_\_ Ft. (\_\_\_ Mi.)". It may be used in repetition with appropriate legends or in conjunction with other construction signs.

Sample



Deployment  
(where & why)

The advance flagman sign is intended for use in advance of any point at which a flagman has been stationed to control traffic through a construction or maintenance project. The sign shall be promptly removed, covered or turned to face away from the roadway whenever the flagman is not at his station.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should exercise caution, be alert and follow the direction of the flagman.

Physical Characteristics  
(color, shape & message)

This is an orange diamond shaped sign with black legend and border.

Sample



Deployment  
(where & why)

The Two Way traffic sign should be used as needed at intervals to periodically remind drivers that they are on a two way highway which contains opposing traffic.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should exercise caution and be alert.



Physical Characteristics  
(color, shape & message)

This is a diamond shaped orange sign with black legend and border.

Sample



Deployment  
(where & why)

The Men Working sign is intended for use in conjunction with minor maintenance and public utility operations for the protection of men working in or near the roadway. On low speed urban areas the Men Working sign is intended for use at limited obstruction sites which are adequately marked and clearly visible, such as an open manhole with a fence around it,

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should exercise caution and be alert. The area of work should be ascertained and an appropriate alternate route planned.

Physical Characteristics  
(color, shape & message)

This is a diamond shaped orange sign with black letters and border.

Sample



Deployment  
(where & why)

The Fresh Oil (or Fresh Tar) sign is intended for use in warning motorists that resurfacing operations have rendered the surface of the pavement temporarily hazardous, and that objectionable splashing on vehicles may occur.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver should exercise caution and be alert. Use of an alternate route, if available, is desirable.

Physical Characteristics  
(color, shape & message)

This is an orange diamond shaped sign with a black border and legend.

Sample



Deployment  
(where & why)

The Road Machinery sign is intended for use in areas where heavy equipment is operating in or closely adjacent to the roadway.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should be alert and exercise caution.

Physical Characteristics  
(color, shape & message)

This is a diamond shaped sign in orange with a black border and legend.

Sample



Deployment  
(where & why)

The Road Work sign is intended for use in advance of maintenance or minor reconstruction operations in the roadway.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should exercise caution and be alert.

Physical Characteristics  
(color, shape & message)

This is a diamond shaped orange sign with a black border and legend.

Sample



Deployment  
(where & why)

The Shoulder Work Ahead sign is intended for use in advance of maintenance or minor reconstruction operations involving the shoulder, where the traveled way remains unobstructed.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should be alert for the construction and drive carefully.

Physical Characteristics  
(color, shape & message)

This is an orange diamond shaped sign with black letters and border.

Sample



Deployment  
(where & why)

The Survey Crew sign is intended for use in advance of a point where a surveying crew is working in or closely adjacent to the roadway.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should exercise caution and be alert. A reduction in speed is desirable.

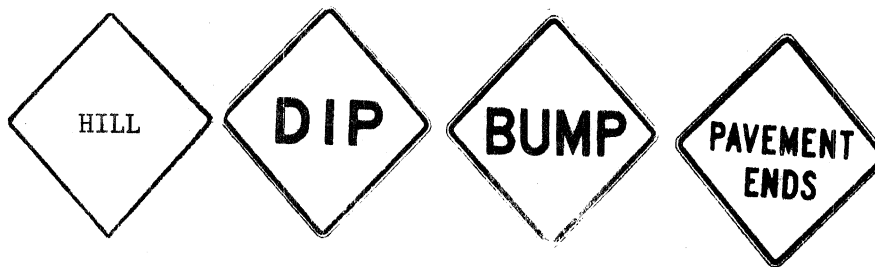
Physical Characteristics  
(color, shape & message)

In addition to the warning signs specifically related to construction and maintenance operations there are numerous other warning signs, standardized for general use and treated previously, that may find application in work areas. These include the following:

- Large Arrow
- Road Narrows
- Divided Highway
- Bump
- Dip
- Pavement Ends
- Soft Shoulder
- Truck Crossing
- Loose Gravel
- Rough Road
- Low Shoulder

When used in construction or maintenance operations these signs shall have an orange background.

Sample



Deployment  
(where & why)

The application of these signs has been previously prescribed, although it is generally apparent from their legends.

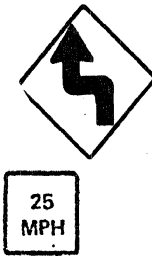
Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should be cautious and alert.

Physical Characteristics  
(color, shape & message)

For use with orange construction and maintenance signs this plate shall have a black legend on an orange background, and when used with yellow background warning signs it shall have a yellow background.

Sample



Deployment  
(where & why)

In conjunction with a warning sign, an Advisory Speed plate may be used to indicate a maximum recommended speed through the hazardous area. Except in emergencies, an advisory speed plate shall not be erected until the recommended speed has been determined by the authority in charge of the highway.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should obey and not exceed the speed limit.

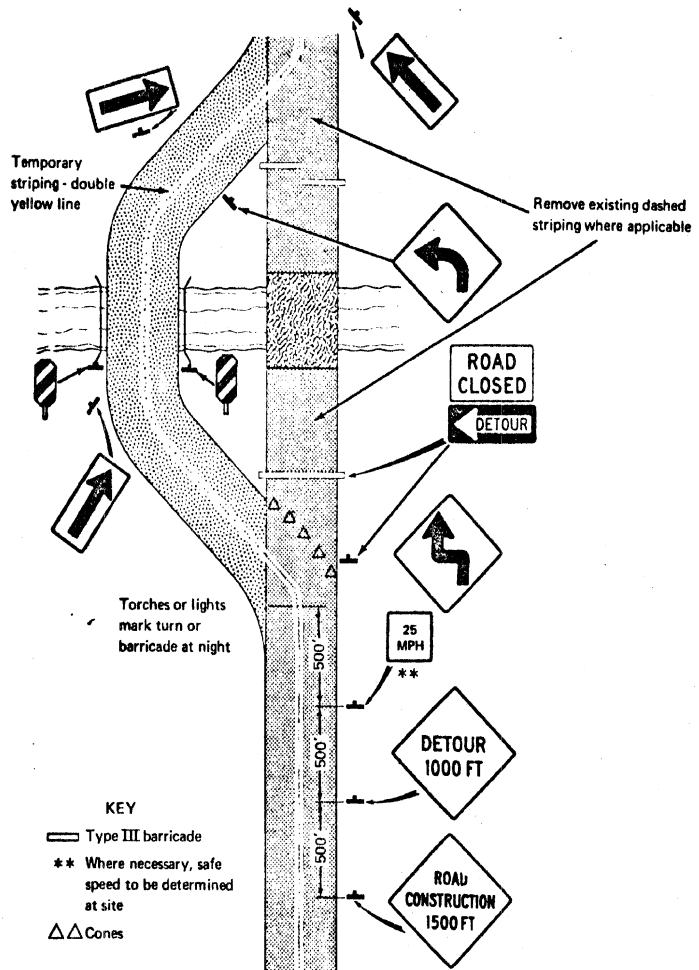


Physical Characteristics  
(color, shape & message)

See diagram.

Sample

Deployment  
(where & why)



Informational signs required at construction and maintenance sites include two categories:

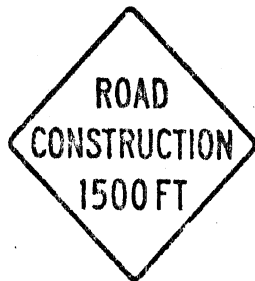
1. Standard directional signs and route markings shall be used, to the extent that temporary route changes are necessitated by road closing and detours.
2. Special information signs relating to the work being done may be required and shall consist of a black message on an orange background.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Physical Characteristics  
(color, shape & message)

This is a diamond shaped orange sign with a black border and legend reading "Road Construction \_\_ Miles" or "Road Construction \_\_ Ft."

Sample



Deployment  
(where & why)

The Length of Construction sign shall be erected at the limits of any road construction or maintenance job of more than 2 miles in extent where traffic is maintained through the job. This sign may also be used where required for jobs of lesser length or on urban streets with appropriate distances shown.

Interpretation or  
Driver Action Required  
(legal & social requirements)

These signs are for the driver's information so that he will know the approximate length of the construction area and be alert for problems.

Physical Characteristics  
(color, shape & message)

This is a rectangular sign in white with a black border and legend. Where appropriate the legend "End Roadwork" may be used.

Sample



Deployment  
(where & why)

The End Construction (Roadwork) sign should be erected approximately 500 feet beyond the end of a construction or maintenance job. It may be erected on the back of a warning sign set up facing the opposite direction of traffic or on the back of a wing barricade.

Interpretation or  
Driver Action Required  
(legal & social requirements)

This indicates that the construction area has ended and the driver may resume normal operations.

Physical Characteristics  
(color, shape & message)

The detour arrow sign shall be used as a horizontal arrow pointing to the right or left as required in each location. The arrow and border are black with a white background.

Sample



Deployment  
(where & why)

The Detour Arrow sign is used at a point where a detour roadway or route has been established due to the closure of a street or highway to through traffic. It should normally be mounted just below the Road Closed sign or Local Traffic Only sign. Each detour shall be adequately marked with standard temporary route markers and destination signs, as a responsibility of the highway department. If an unmarked street or highway is detoured, the Detour Arrow sign may be used to indicate the points at which the detour changes direction.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should follow this sign for the approved detour.

Physical Characteristics  
(color, shape & message)

Legend reads "Pilot Car - Follow Me"

Sample



Deployment  
(where & why)

The Pilot Car sign shall be mounted in a conspicuous position on the rear of a vehicle used for guiding controlled one way traffic through or around a road construction or maintenance project. A flagman must be stationed on every approach to a project on which a pilot car is used, to hold traffic as necessary until the pilot car is available to lead.

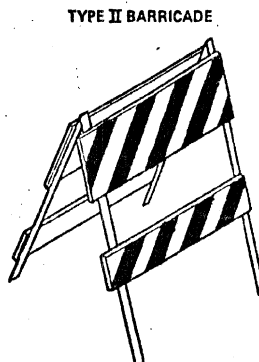
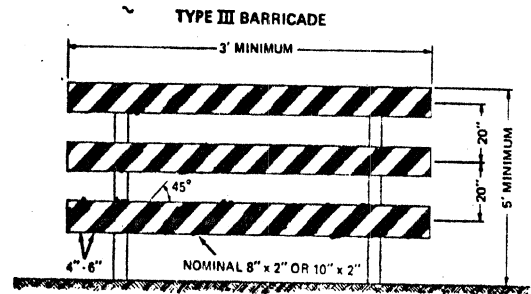
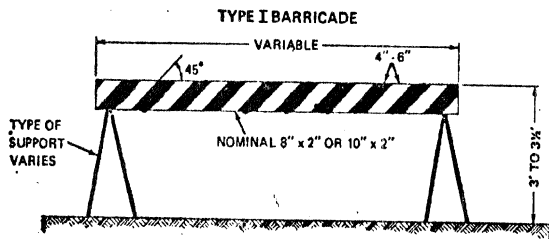
Interpretation or  
Driver Action Required  
(legal & social requirements)

Follow this car to be led through the area.

Physical Characteristics  
(color, shape & message)

1. Markings for barricade rails shall be either alternate orange and white or black and white stripes sloping downward at an angle of 45 degrees in the direction traffic is to pass. The orange and white and black and white markings shall not be intermixed in the same installation area.
2. Where a barricade extends entirely across a roadway, it is desirable that the stripes slope downward in the direction toward which traffic must turn in detouring. Where both right and left turns are provided for, the chevron striping may slope downward in both directions from the center of the barricade.
3. The stripes shall be reflectorized so as to be visible under normal atmospheric conditions from a minimum distance of 1,000 feet when illuminated by the low beams of standard automobile headlights. The predominant color for other barricade components shall be white.

Sample



Deployment  
(where & why)

The functions of barricades and channelizing devices are to warn and alert drivers of hazards created by construction or maintenance activities in or near the traveled way, and to guide and direct drivers safely past the hazard.

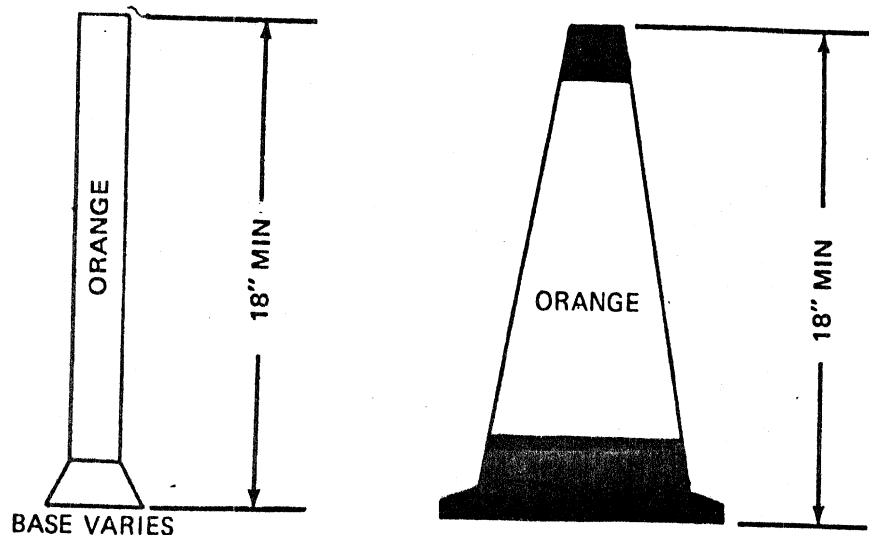
Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should drive with caution and obey barricades.

Physical Characteristics  
(color, shape & message)

Traffic cones of various configurations shall be a minimum of 18 inches in height with a broadened base and made of various materials to withstand impact without damage to themselves or to the vehicle. Larger size cones should be used where speeds are relatively high or wherever more conspicuous guidance is needed. Orange shall be the predominant color on cones. They should be kept clean and bright for maximum target value. For nighttime use they shall be reflectorized or be equipped with lighting devices for maximum visibility. They may be conical in shape, but there are also tubular shaped devices available capable of performing the same function. They may be set on the surface of the roadway or rigidly attached for continued use.

Sample



Deployment  
(where & why)

These are used where guidance is needed. Included under this heading are a group of devices whose primary function is the channelization of traffic.

Interpretation or  
Driver Action Required  
(legal & social requirements)

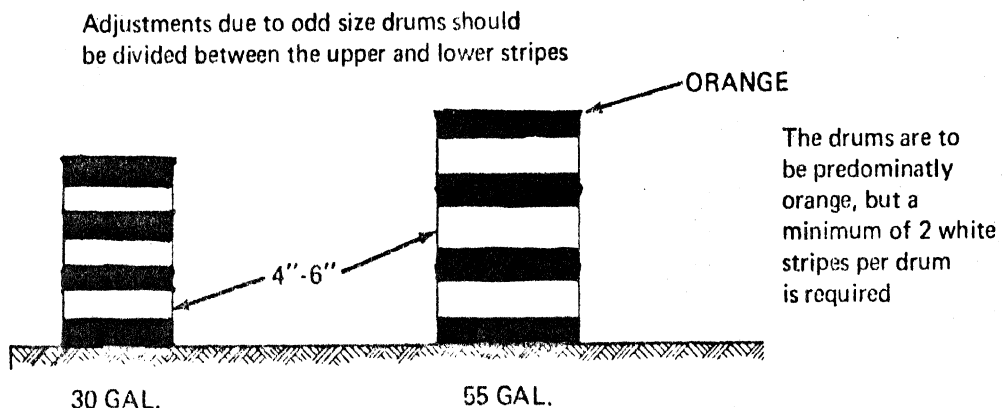
Drivers should use cones as a guide.



Physical Characteristics  
(color, shape & message)

Drums are normally metal drums of 30 to 55 gallon capacity, set on end and used as an expedient method for traffic channelization. The color and marking of drums shall be consistent with marking standards for barricades, orange and white or black and white. These colors shall be intermixed in the same area. The predominant color on drums shall be black or orange with at least two horizontal, circumferential white stripes 4 to 6 inches wide. Drums shall be reflectorized for use at night and should never be placed in the roadway without advance warning signs and, at night, the addition of a flashing warning light when used singly or steady warning lights when used in a series for channelization.

Sample



Deployment  
(where & why)

Barrels or drums are an effective traffic control device, particularly for use in construction areas. One effective application is to delineate an unusual vehicle path made necessary by the construction activity. Another effective application occurs on road widening projects where a row of barrels is used at night to mark the edge of pavement and channelize traffic away from the open trench alongside the pavement. During working hours the same barrels are moved onto the pavement to provide working room for the construction activity and smoothly channelize traffic around the work area.

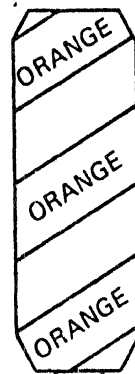
Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should follow the drums for a guide path similar to cones in use.

Physical Characteristics  
(color, shape & message)

Vertical panels used as a channelizing device shall consist of at least one panel 6 to 8 inches in width and 24 inches in height. They shall be striped and reflectorized in the same manner as barricades and mounted with the top a minimum of 36 inches above the roadway on a single lightweight post. The optional orange and white or black and white design shall not be intermixed in the same area.

Sample



Deployment  
(where & why)

VERTICAL PANEL

These devices may be used for traffic separation or shoulder barricading where space is at a minimum.

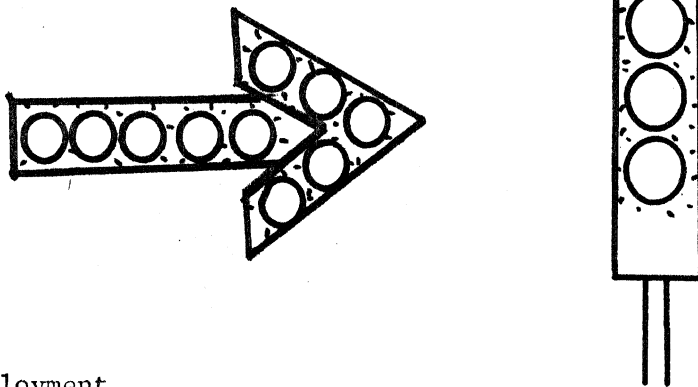
Interpretation or  
Driver Action Required  
(legal & social requirements)

These serve the same function as cones or drums, but are not portable.

Physical Characteristics  
(color, shape & message)

Delineators are all types of reflector units that are capable of reflecting light from the upper or lower beam of an automobile headlamp.

Sample



Deployment  
(where & why)

Their usefulness in construction and maintenance zones is one of guidance rather than one of warning. Delineators properly installed will indicate the horizontal and vertical alignment of the roadway and thereby outline the required vehicle path through what otherwise might be a confusing alignment caused by construction or maintenance activities in the roadway.

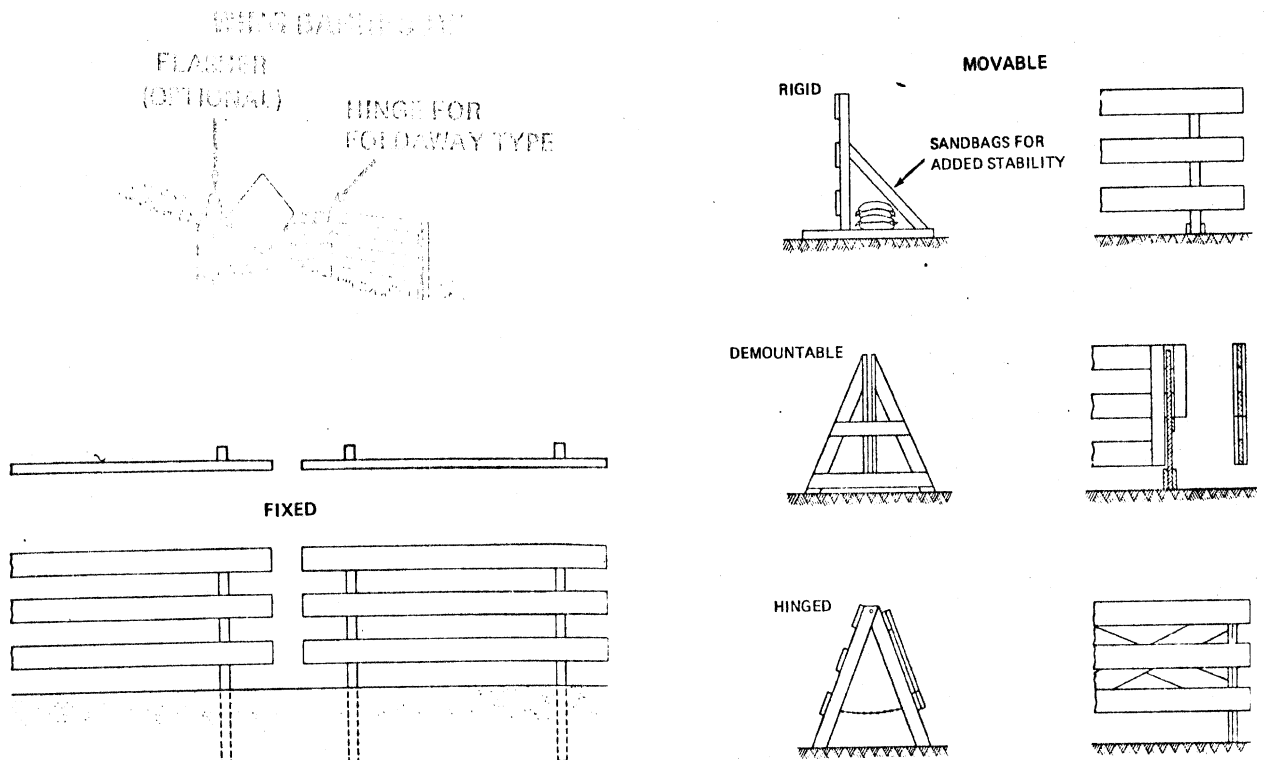
Interpretation or  
Driver Action Required  
(legal & social requirements)

Driver is to follow the path outlines by the delineators and get information about the horizontal and vertical alignment of the roadway.

Physical Characteristics  
(color, shape & message)

1. The horizontal members of Type I barricades shall be 8 to 12 inches wide. The supports for the rail may be fabricated of lumber, metal or other suitable material, properly shaped. In either case the support should contain, at the prescribed height, a notch or loop into which the horizontal members may be inserted. The essential element of this feature is to permit rapid assembly and disassembly of the barricade for movable situations. This barricade is normally used in 6 to 8 foot lengths.
2. Type II barricades may be constructed of wooden, metal or other components, or combinations thereof. The supports should be of an "A" frame configuration or hinged or otherwise fastened at the top to permit convenient folding and stacking for transporting from one work site to another. Since portability is a prime consideration, the materials chosen for the barricades should be as light weight as possible commensurate with structural soundness. Irrespective of the materials used for constructing Type II barricades, they have a relatively high center of gravity and are, therefore, susceptible to overturning in the wind. Sandbags should be used for ballasting when required.
3. Since Type III barricades are somewhat permanent in nature and are required to function in one location for a relatively long time, they should be substantially constructed. When the barricades are constructed on bases instead of posts set into the ground, it may be desirable to ballast the bases with sand bags to provide added resistance to overturning during periods of high winds.

Sample



Type III barricade construction - typical examples.

Deployment  
(where & why)

1. When a road section is closed to traffic, Type III barricades shall be erected at the points of closure. They may extend completely across a roadway and its shoulders as a fence, or from curb to curb, but where provision must be made for access of equipment and authorized vehicles, the Type III barricades should be provided with gates or movable sections that can be closed when work is not in progress, or with indirect openings that will discourage public entry. Where access is provided through the Type III barricades, responsibility should be assigned to a person to assure proper closure at the end of each working day.
2. When a road or street is legally closed, but access must still be allowed for local traffic, the Type III barricades cannot be erected completely across a roadway. Instead, an arrangement should be devised that will permit local use but effectively discourage use by through traffic. A sign with the appropriate legend concerning permissible use by local traffic should be installed.
3. Type I and Type II barricades shall be used when traffic is maintained through the area being constructed and/or reconstructed. The important characteristic of these barricades is that each is movable, and they may be used interchangeably. In general, Type I barricades are the heavier and more bulky of the two, but these factors are dependent in large part on the materials from which each type is constructed.
4. The ultimate choice in a given situation would probably be dependent upon the degree of mobility required in the particular project. It should be kept in mind, however, that Type I and Type II barricades, although movable, are somewhat clumsy and are not as adaptable to changeable situations as traffic cones.
5. Wing barricades are Type III barricades erected on the shoulder, on one or both sides of the pavement, to give the illusion of a narrowing or restricted roadway. If used in a series, they should start at the outer edge of the shoulder and be brought progressively closer to the pavement. Wing barricades may be used as a mounting for the advance warning or guide signs or design may be advantageous.

Interpretation or  
Driver Action Required  
(legal & social requirements)

In advance of a construction or maintenance area, even where no part of the roadway is actually closed, wing barricades serve a useful purpose in alerting drivers. Barricades, particularly those of the fixed type, offer a most advantageous facility for the erection of signs. The Road Closed and Detour Arrow signs, and the Large Arrow warning signs, for example, can effectively be mounted above the barricade that closes the roadway.

Physical Characteristics  
(color, shape & message)

Flood lamps consist of steady yellow or white lights which illuminate a large area.

Sample

Deployment  
(where & why)

Flood lights have a limited, but important application. Sometimes large construction contracts are prosecuted on a double shift basis, particularly earth moving activities. Often the earth moving involves a haul road crossing a public highway at which point a flagman station has been set up. In order to assure the safest possible conditions at the type location it is advisable to supplement the warning devices in advance of the crossing with flood light of the actual flagman station and crossing site. Care is required in order to adequately illuminate the desired area without creating glare in the eyes of drivers on the highway. The adequacy of the flood light placement can best be determined by driving through and observing the flood lighted area from each direction on the highway. In urban freeways, high volume, high density traffic conditions are requiring, to an ever-increasing extent, that maintenance activities on the roadway be conducted during nighttime periods of low traffic volumes. Good flood lighting of the work site is a necessity, both from the need for the workmen to see what they are doing, but also for the workmen and worksite to be seen by passing drivers. The lighting units should be positioned so as to insure the prevention of glare into the eyes of all drivers on the highway.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers approaching a flood lighted area should use extra caution and be alert for workmen and construction vehicles.

Physical Characteristics  
(color, shape & message)

Hazard Identification Beacons may be operated singly or in groups containing more than one unit. They consist of flashing amber lights reflected by vehicle headlamps.

Sample

Deployment  
(where & why)

A Hazard Identification Beacon generally is used at points of special hazard where the flashing beacon is effective in calling the attention of drivers to these locations. When used, the flashing beacon should operate 24 hours a day. Because of the time and effort required to install and put the units into operation, Hazard Identification Beacons are used generally only at locations where frequent changes would not be required.

Interpretation or  
Driver Action Required  
(legal & social requirements)

These are an added warning to the driver that a hazard exists.

Physical Characteristics  
(color, shape & message)

As used herein, steady burning electric lamps shall mean a series of low wattage yellow electric lamps.

Sample

Deployment  
(where & why)

They may be used to mark obstructions or hazards, but they are generally less effective than flashing lights for these uses because of the attention getting effect of the latter. However, where lights are needed to delineate the traveled way through and around obstructions in a construction or maintenance area, the delineation shall be accomplished by use of steady burning lamps.

Interpretation or  
Driver Action Required  
(legal & social requirements)

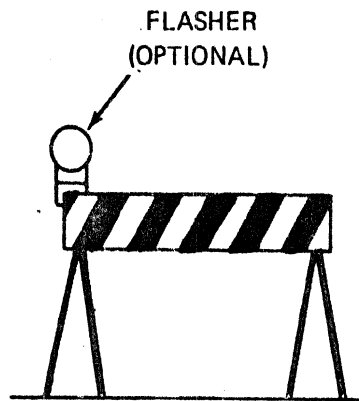
These are a warning to the driver to be alert.



Physical Characteristics  
(color, shape & message)

As used herein, Barricade Warning Lights are portable, lens directed, enclosed lights. The color of the light emitted shall be yellow. They may be used in either a steady burn or flashing mode.

Sample



Deployment  
(where & why)

1. Type A Low Intensity Flashing Warning lights are most commonly mounted on Class II, Class III barricades or vertical channelizing devices and are intended to continually warn the driver that he is proceeding in a hazardous area.
2. Type B High Intensity Flashing Warning lights are normally mounted on the advance warning signs or on independent supports. Extremely hazardous site conditions within the construction area may require that the lights be mounted on Class I barricades, signs, or other supports. As these lights are effective in daylight as well as dark, they are designed to operate 24 hours per day.
3. Type C Steady Burn lights are intended to be used to delineate the edge of the traveled way, on the curves of detours, lane changes, lane closures, and other similar conditions. Their application shall be indicated elsewhere.
4. The light weight and portability of barricade warning lights are advantages that make these devices useful as supplements to the reflectorization on hazard warning devices. The flashing lights are effective in attracting a driver's attention and, therefore, provide an excellent means of identifying the hazard. Flashers shall not be used for delineation, as a series of flashers would tend to obscure the desired vehicle path.

Interpretation or  
Driver Action Required

A warning to the driver to be alert.

Physical Characteristics  
(color, shape & message)

Special lighting units, generally trailer-mounted for easy transport to a job site, have been developed to supplement conventional signs, pavement markings and lighting for maintenance activities. The flashing lights on the unit are operated from a self-contained power source mounted on the trailer, either batteries or an electric generator. A variety of light configurations are used for traffic warning and guidance. Most units are designed with racks, channels or other devices so that signs may be displayed with messages appropriate to the particular kind of work being performed.

Sample

Deployment  
(where & why)

These special lighting units are used most frequently on high density urban freeways and are placed just in advance of the work site. The flashing lights, together with appropriate signs, have proven to be very effective warning devices while also providing some physical protection to the maintenance men at work. Although these special lighting units were developed to satisfy a need on urban freeways, they have many applications on all types of highways. Their mobility, together with the availability of flashing lights and/or variety of sign messages makes them useful for almost any situation where conditions require extraordinary advance warning of the maintenance activities. If the units are to be used at night, consideration should be given to providing a means whereby the intensity of the flashers may be reduced during darkness when the lower intensities are desirable.

Interpretation or  
Driver Action Required  
(legal & social requirements)

These warn the driver to be alert.

Physical Characteristics  
(color, shape & message)

As used herein, lanterns and torches are single-unit, portable, constant-burning, low-intensity types of lights with open or enclosed flame. They provide negligible illumination of other objects, and are not altogether dependable under adverse weather conditions such as high wind or heavy rain. Furthermore, the flammable fuel used in the lanterns or torches may be a hazard to life and property, and their use, therefore, is not recommended, except in the special circumstances described below.

Sample

Deployment  
(where & why)

Open flame torches may have an application in rural areas where under nighttime conditions, they might be the only device available to a maintenance patrolman to put into immediate use at a location where an emergency has developed. However, even under these conditions, the torches should be replaced as quickly as possible with more effective devices that have been discussed in the previous section.

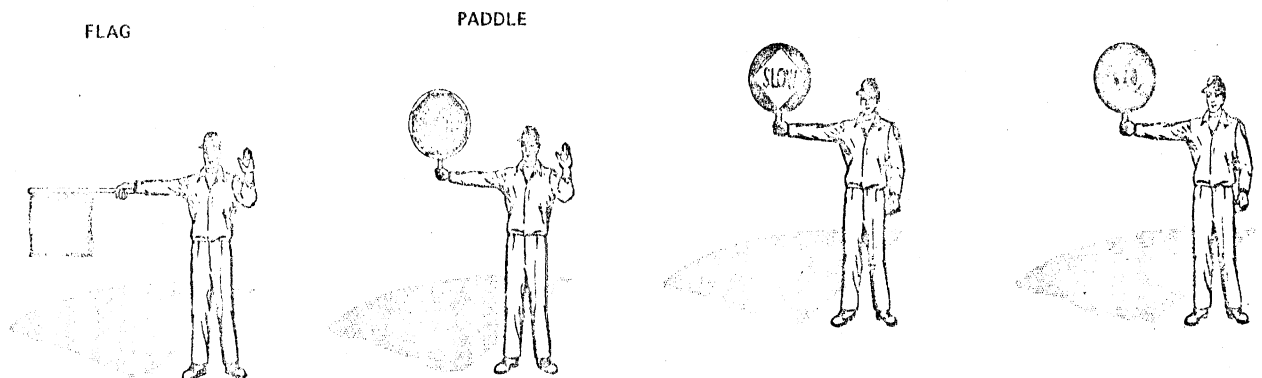
Interpretation or  
Driver Action Required  
(legal & social requirements)

This is a warning that drivers should be alert.

Physical Characteristics  
(color, shape & message)

1. A number of hand signaling devices, such as red flags, STOP/SLOW paddles and lights are used in controlling traffic through work areas. The flag is the most common device used during the day-light hours. The sign paddle bearing the clear messages STOP, or SLOW also may be used.
2. Flags used for signaling purposes shall be a minimum of 24 by 24 inches in size, made of a good grade of red material securely fastened to a staff approximately 3 feet in length. The free edge should be weighted to insure that the flag will hang vertically, even in heavy winds.
3. Sign paddles should be at least 24 inches wide, with 6 inch  $\phi$  letters. A rigid handle should be provided. This combination sign may be fabricated from sheet metal or other light semirigid material. The background of the STOP face shall be red with white letters and border. The background of the SLOW shall be orange with black letters and border. When used at night the STOP face shall be reflectorized red with white reflectorized letters and border, and the SLOW face shall be reflectorized orange with black letters and border.

Sample



Deployment  
(where & why)

These are used by flagmen to control traffic.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers are warned that a hazard exists and should be prepared to obey the directions of the flagmen and the device.

Physical Characteristics  
(color, shape & message)

Since flagmen are responsible for human safety and make the greatest number of public contacts of all construction personnel, it is important that qualified personnel be selected. A flagman shall possess the following minimum qualifications:

1. Average intelligence
2. Good physical condition, including sight and hearing
3. Mental alertness
4. Courteous but firm manner
5. Neat appearance
6. Sense of responsibility for safety of public and crew.

The use of an orange vest, and/or an orange cap shall be required for flagmen. For nighttime conditions similar outside garments shall be reflectorized.

Sample

See page 202.

Deployment  
(where & why)

Flagmen are provided at work sites to stop traffic intermittently as necessitated by work progress or to maintain continuous traffic past a work site at reduced speeds to help protect the work crew. For both of these functions the flagman must, at all times, be clearly visible to approaching traffic for a distance sufficient to permit proper response by the motorist to the flagging instructions, and to permit traffic to reduce speed before entering the work site. In positioning flagmen consideration must be given to maintaining color contrast between the flagmen's protective garments and his background.

Interpretation or  
Driver Action Required  
(legal & social requirements)

The following methods of signaling with a flag should be used:

1. To Stop Traffic

The flagman shall face traffic and extend the flags horizontally across the traffic lane in a stationary position so that the full area of the flag is visible hanging below the staff. For greater emphasis, the free arm may be raised with the palm toward approaching traffic.

2. When it is Safe for Traffic to Proceed

The flagman shall stand parallel to the traffic movement, and, with flag and arm lowered from view of the driver, motion traffic ahead with his free arm. Flags shall not be used to signal traffic to proceed.

3. Where it is Desired to Alert or Slow Traffic

By means of flagging, the flagman shall face traffic and wave the flag in a sweeping motion of the arm across the front of the body without raising the arm above a horizontal position.

If a sign paddle is used, it shall be held in a stationary position with the arm extended horizontally away from the body.

Lights approved by the appropriate highway authority or reflectorized sign paddles or reflectorized flags shall be used to flag traffic at night. Daytime flagging procedures shall be followed whenever such lights, paddles or flags are used at night.

Whenever practicable the flagman should advise the motorist of the reason for the delay and the approximate period that traffic will be halted. Flagmen and operators of construction machinery or trucks should be made to understand that every reasonable effort must be made to allow the driving public the right-of-way and prevent excessive delays.

**SCHOOL ZONE SIGNS**

Physical Characteristics  
(color, shape & message)

This sign has a yellow background with black symbol and border.

Sample



Deployment  
(where & why)

The School Advance sign is intended for use in advance of locations where school buildings or grounds are adjacent to the highway. It shall be erected not less than 150 feet nor more than 700 feet in advance of the school grounds or school crossing. The sign shall have a minimum height and width of 30 inches.

Interpretation or  
Driver Action Required  
(legal & social requirements)

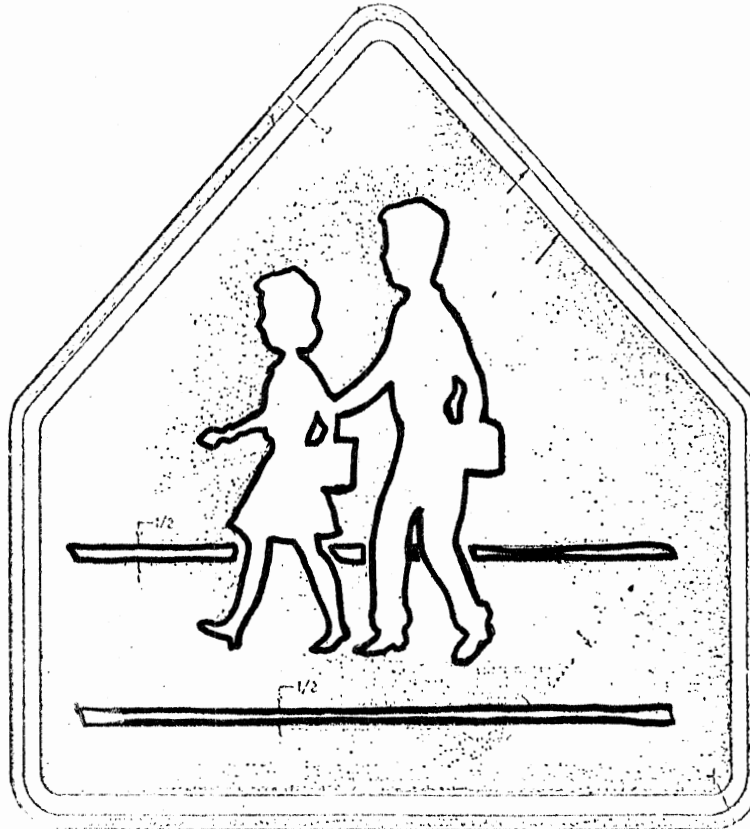
Drivers should be on the lookout for a school and for school children.



Physical Characteristics  
(color, shape & message)

This is a yellow sign with black symbol and border.

Sample



Deployment  
(where & why)

The School Crossing sign is intended for use at established crossings including signalized locations used by pupils going to and from school, except that at crossings controlled by stop signs the sign should be omitted. Only crossings adjacent to schools and those on established school pedestrian routes shall be signed. When used, the sign shall be erected at the crosswalk, or at the minimum distance possible in advance of the crosswalk. A School Advance sign shall be used in advance of the School Crossing sign.

Interpretation or  
Driver Action Required  
(legal & social requirements)

The next crosswalk is used by school children and drivers should be alert for school children during school hours.

Physical Characteristics  
(color, shape & message)

1. The fixed sign assembly shall consist of a top panel with a yellow background and the legend "School" in black, a Speed Limit sign (substantially a black bottom panel with a white background and a black legend legible for the viewing conditions indicating the specific period or periods of the day and days of the week when the special school speed limit applies. Alternately, legends such as "When Children Present" may be used if permitted by law. The numerical speed limit displayed on the sign shall be the limit established by law.
2. Because of special features, it may not always be practical to make variable display signs conform in all respects to the accepted standards. However, during the periods the school speed limit is in force their basic shape, legend message, legend lay-out, and legend and background colors should conform to the standard for the fixed message sign, except the numeral legend if internally illuminated may be a white legend on a black background.

Sample



Deployment  
(where & why)

1. The School Speed Limit sign shall be used to indicate the speed limit where a reduced speed zone for a school area has been established in accordance with law after an engineering and traffic investigation or to indicate a limit specified for such areas by statute.
2. Variable display signs with flashing beacons should be used for the more critical situations where greater emphasis of the special school speed limit is needed.
3. Variable display signs may be used to indicate the special school speed limit. These signs may use blank-out messages or other methods to display the school speed limit only during the periods it applies; or a Speed Limit Sign Beacon may be used with a School Speed Limit sign to identify the periods the school speed limit is in force.

4. At the end of an authorized and posted school speed zone the speed limit for the following section of highway should be posted with a standard speed limit sign.

Interpretation or  
Driver Action Required  
(legal & social requirements)

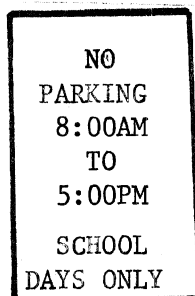
The driver is to operate his vehicle at the reduced speed during normal school hours or at times indicated on the sign.

SIGN OR DEVICE Parking and Stopping - School 7B-13

Physical Characteristics  
(color, shape & message)

1. Typical examples are as follows:
  - No Parking 8:00 AM to 5:00 PM School Days Only
  - No Stopping 8:00 AM to 5:00 PM School Days Only
  - 5 Min. Loading 8:00 AM to 5:00 PM School Days Only
2. The legend on parking signs shall state whatever regulations apply, but the signs shall conform to the standards of shape, color, position and use. Generally, parking signs should display such of the following information as is appropriate, from top to bottom of the sign, in the order listed:
  - a. Restriction or prohibition
  - b. Time of day it is applicable, if not at all hours
  - c. Days of week applicable, if not every day.
3. In addition, there should be a single-headed arrow pointing in the direction the regulation is in effect if the sign is at the end of a zone, or a double-headed arrow pointing both ways if the sign is at an intermediate point in a zone. As an alternate to the arrow, if the signs are posted facing traffic at an angle of 90 degrees to the curb line, there may be included on the sign, or on a separate plate below the sign, such legend as "Here to Corner", "Here to Alley", "This Side of Sign" or "Between Signs".
4. Parking signs and other signs governing the stopping and standing of vehicles in school areas cover a very wide variety of regulations and only general specifications can be laid down here.
5. Where parking is prohibited at all times or at specified times, parking signs shall have red letters and border on a white background (Parking Prohibition signs); and where only limited-time parking is permitted, or where parking is permitted only in a particular manner, the signs shall have green letters and border (Parking Restriction signs).
6. For emphasis the word "No" or the numeral showing the time limit in hours or minutes may be in a reversed color arrangement in the upper left corner of the sign, ie, in white on a rectangular area of red or green.

Sample



Deployment  
(where & why)

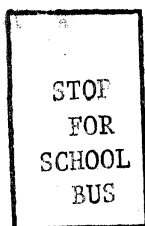
Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers must conform to the special rules as posted.

Physical Characteristics  
(color, shape & message)

The sign legend should indicate the pertinent requirements of the state law.

Sample



Deployment  
(where & why)

1. This sign is intended for use to inform motorists of the state law regulating stopping for a school bus loading or unloading school children.
2. The signs should be erected in advance of the first recognized school bus stop inside the State boundary facing traffic entering the State. They may also be erected on highways outside of metropolitan areas and at intermediate locations where school buses are required to make frequent stops.
3. In cities where a local ordinance has been enacted regulating stopping for a school bus, these signs should be erected along the school bus route.

Interpretation or  
Driver Action Required  
(legal & social requirements)

1. The driver of a vehicle upon a [highway] [outside of a business or residence district] \* upon meeting or overtaking from either direction any school bus which has stopped on the highway for the purpose of receiving or discharging any school children shall stop the vehicle before reaching such school bus when there is in operation on said school bus a visual signal as specified, and the driver shall not proceed until such school bus resumes motion or is signaled by the school bus driver to proceed or the visual signals are no longer actuated.

\* exact requirement depends upon the wording of the law

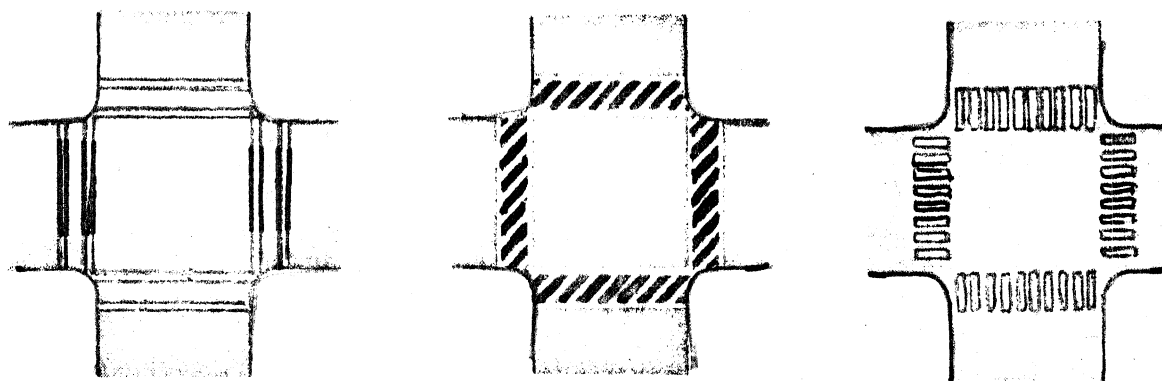
2. Every bus used for the transportation of school children shall bear upon the front and rear thereof plainly visible signs containing the words "School Bus", and in addition shall be equipped with visual signals which shall be activated by the driver of said school bus whenever but only whenever such vehicle is stopped on the [highway][outside of a business or residence district]\*
3. When a school bus is being operated upon a highway for purposes other than the actual transportation of children either to or from school, all markings thereon indicating "school bus" shall be covered or concealed.
4. The driver of a vehicle upon a highway with separate roadways need not stop upon meeting a school bus which is on a different roadway or when upon a controlled access highway and the school bus is stopped in a loading zone which is a part of or adjacent to such highway and where pedestrians are not permitted to cross the roadway.

\* exact requirement depends upon the wording of the law.

Physical Characteristics  
(color, shape & message)

Crosswalk lines on both sides of the crosswalk should extend across the full width of pavement to discourage diagonal walking between crosswalks. Crosswalk lines shall be solid white lines marking both edges of the crosswalk. For added visibility, the area of the crosswalk may be marked with white diagonal lines at a 90° angle to the line of the crosswalk. These lines should be approximately 12 inches to 24 inches wide and spaced 12 to 24 inches apart. When diagonal or longitudinal lines are used to mark a crosswalk, the transverse crosswalk lines may be omitted.

Sample



Deployment  
(where & why)

Crosswalks should be marked at all intersections on established routes to school where there is material conflict between vehicles and crossing by kindergarten and elementary students; or where students are permitted to cross between intersections; or where students could not otherwise recognize the proper place to cross.

Interpretation or  
Driver Action Required  
(legal & social requirements)

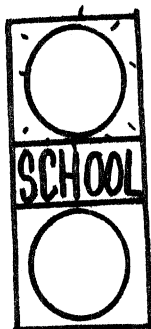
Drivers should be extra careful to watch for pedestrians and school children during school hours.

SIGN OR DEVICE Traffic Signals  
Special Applications for Schools 7D-1

Physical Characteristics  
(color, shape & message)

School signals and standard traffic control signals erected at established school crossings on the basis of a need to create adequate gaps in the vehicular traffic stream for pedestrian crossings. They consist of flashing yellow lights with the message "School" between the lights.

Sample



Deployment  
(where & why)

1. Pedestrian indications shall be provided at least for each crosswalk established as a school crossing. At an intersection, the signal normally should be traffic actuated. Intersection installations that can be fitted into progressive systems may use pre-timed control.
2. School signals may be installed at established school crossings at intersection and non-intersection locations under the adequate gap warrant.
3. Intersection locations have the hazards of turning vehicles and generally require the provision of signal equipment for the control of traffic on two streets. However, they are less likely to present an element of surprise for drivers who do not expect pedestrian crossings and signal control between intersections. Therefore, special attention should be given to the signal head placement and the signs and markings used at non-intersection locations to be sure drivers are aware of this special application. Parking should not be allowed within 100 feet in advance of the crosswalk, nor 20 feet beyond.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers must obey the stop and go signals and be alert for pedestrians.



Physical Characteristics  
(color, shape & message)

1. Adult guards should be special police officers appointed by the local police agency. The local police agency should be responsible for the selection, training and supervision of adult guards.
2. High standards for selection of adult guards are essential. Adult guards must understand children and in addition should possess the following qualifications: average intelligence, good physical condition, including sight and hearing, mental alertness, neat appearance, good character, dependability, and a sense of responsibility for safety of children.
3. Adult guards should be uniformed so that motorists and pedestrians can recognize them and respond to their signals. It is recommended that their uniforms be distinctively different from those worn by regular police officers.

Sample

Deployment  
(where & why)

Adult guards may be used to provide gaps in traffic at school crossings where an engineering study has shown that adequate gaps must be created.

Interpretation or  
Driver Action Required  
(legal & social requirements)

1. Adult guards should not direct traffic in the usual police regulatory sense. In the control of traffic, they should pick opportune times to create a safe gap. At these times their presence in the roadway serves as an easily recognized indication that pedestrians are about to use the crosswalk, and that all traffic must stop. When all traffic has stopped, the adult guard allows the children to cross.
2. Police officers should be used for school crossing supervision only in emergency situations and temporary basis or at very hazardous school crossings where the use of adult guards is not feasible.
3. Student patrols may be used to direct and control children at crossings near schools where there is no need to create adequate gaps in traffic.

4. Student patrols may be used to direct and control children at **signalized** intersections where turning movements are not a problem, and to assist adult guards in the control of children at crossing locations used by large numbers of children.
5. Student patrols should not be responsible for directing vehicular traffic. They should not function as police.

Interpretation or  
Driver Action Required  
(legal & social requirements)

Drivers should be alert and respond to signals of guard.

