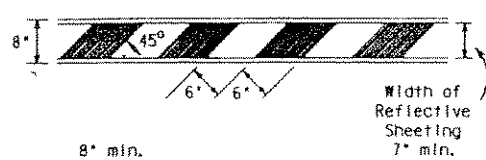
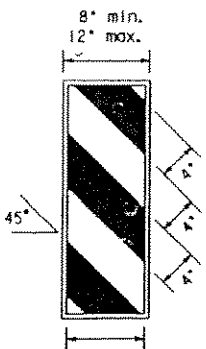


STRIPING

TYPICAL DETAIL FOR BARRICADE RAIL



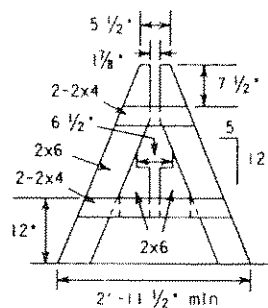
Width of Reflective Sheetting 7" min.



TYPICAL DETAIL FOR VERTICAL PANEL

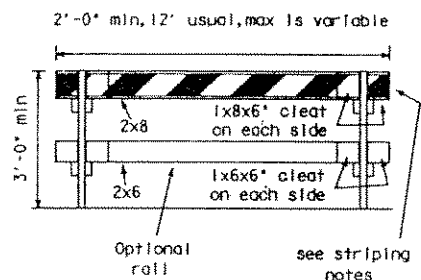
7" min. for 8" panel
11" min. for 12" panel

BARRICADES



TYPE I

For Type I Barricades, both sides of the top rail shall have reflective orange and reflective white striping.



Optional rail see striping notes

BARRICADE NOTES

Barricades extending across a roadway, should have stripes slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided for, the chevron striping may slope downward in both directions from the center of the barricade.

Striping of rails, panels and gates for the right side of the roadway, is shown above. For the left side of the roadway, striping should slope downward to the right. Identification markings may be shown only on back side of barricade rails. Maximum height of letters shall be one (1) inch.

Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided (see BC(1)).

Barricades may be designed and constructed from wood, or any other suitable material in a manner approved by the Engineer.

When signs are placed on barricades, a maximum number of 2 signs per barricade section will be permitted.

Barricades are to be constructed in a first-class workmanship manner of clean sound material. All surfaces above ground, which are not striped, shall be white except the unpainted galvanized metal or aluminum components. Components made of lumber shall be painted with a minimum of two coats of an approved brand of white paint to insure thorough coverage and a uniform white color.

Barricades inside the project shall be removed upon completion of the work and/or the elimination of the hazard on any section.

When Wood Barricades are used and when orange and white stripes are required on the backside, a 2" x 8" rail may be used in lieu of the 1" x 8" rail and 2" x 4" stiffener. Otherwise the rail should be fabricated as detailed.

BARRICADE CHARACTERISTICS

TYPE*	I	II
Width of Rail	8" min-12" max	8" min-12" max
Length of Rail	2 ft min	2 ft min
Width of Stripes**	6 inches	6 inches
Height	3 ft min	3 ft min
Number of ReflectORIZED Rail Faces	2 (one each direction)	4 (two each direction)

TYPE*	III
Width of Rail	8" min-12" max
Length of Rail	4 ft min
Width of Stripes**	6 inches
Height	5 ft min
Number of ReflectORIZED Rail Faces	3 if facing traffic in one direction 6 if facing traffic in two directions

* For wooden barricades nominal lumber dimension will be satisfactory
** For rails less than 3 feet long, 4 inch wide stripes shall be used

TYPICAL TRANSITION LENGTHS AND SUGGESTED MAXIMUM SPACING OF DEVICES

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Device	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	L = WS ² / 60	150'	165'	180'	30'	60'-75'
35		205'	225'	245'	35'	70'-90'
40		265'	295'	320'	40'	80'-100'
45	L = WS	450'	495'	540'	45'	90'-110'
50		500'	550'	600'	50'	100'-125'
55		550'	605'	660'	55'	110'-140'
60		600'	660'	720'	60'	120'-150'
65		650'	715'	780'	65'	130'-175'

* 85th Percentile Speed may be used on roads where traffic speeds normally exceed the posted speed limit.
** Taper lengths have been rounded off.
L=Length of Taper (FT.) W=Width of Offset (FT.) S=Posted Speed (MPH)

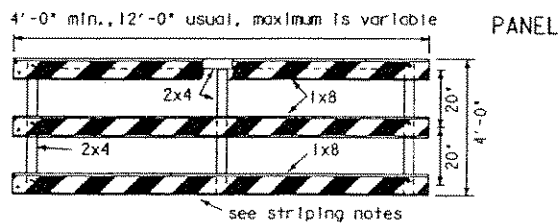
RETROREFLECTIVE SHEETING

Type A = Engineer Grade
Type B = Super Engineer Grade
Type C = High Specific Intensity

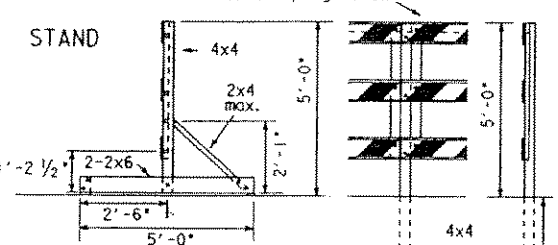
as defined in Material Specification D-9-8300

TYPE III

The three (3) rails on Type III barricades shall be reflective orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.



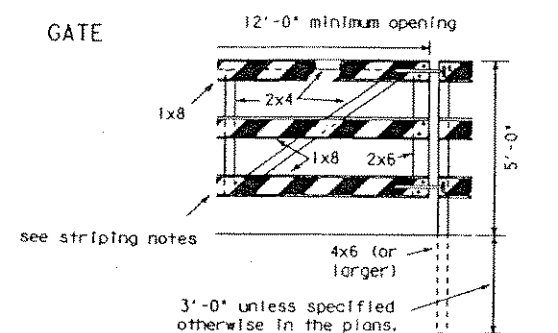
POST



Typical fasteners are 3/8", 1/2" or 5/8" bolt with washers, ring shank fasteners, or lag screws.

3'-0" unless specified otherwise in the plans.

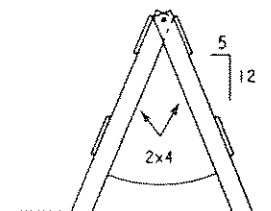
GATE



see striping notes

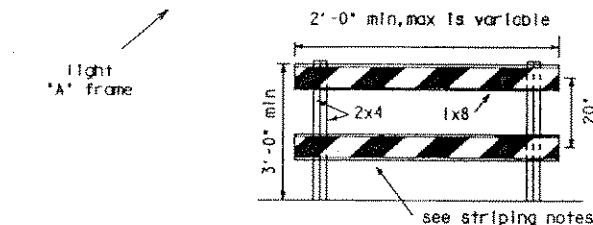
4x6 (or larger)

3'-0" unless specified otherwise in the plans.



TYPE II

For Type II Barricades, all four (4) rail faces shall have reflective orange and reflective white striping.



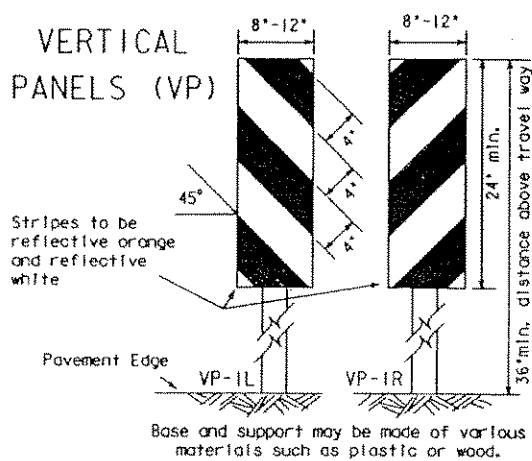
see striping notes

BARRICADE DETAILS

All lumber sizes are nominal dimensions. Fabrication details are plus or minus 1/2".

Nails may be used in the construction of the barricade; however, all connections shall have an approved fastener.

VERTICAL PANELS (VP)

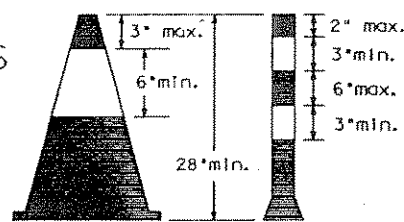


Stripes to be reflective orange and reflective white

Base and support may be made of various materials such as plastic or wood.

Vertical Panels are normally used as channelizing devices to indicate tangent or nearly tangent roadway alignment where good target value of a device is needed in daytime as well as the nighttime. In addition, vertical panels should be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation may be required. Vertical panels should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes should always slope downward toward the traveled way. Material used to weight devices shall be sand. Nails may be used in the final construction of VP support.

CONES



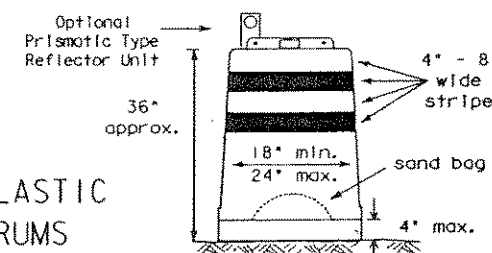
Traffic cones and tubular markers shall be a minimum 28 inches in height when used on freeways or used at nighttime. Orange shall be the predominant color on cones and tubular markers. They should be kept clean and bright for maximum visibility.

For nighttime use they shall be reflectORIZED or equipped with lighting devices for maximum visibility. ReflectORIZED material shall have a smooth, sealed outer surface which will display the same approximate color day and night.

ReflectORIZATION of tubular markers shall be a minimum of two three-inch bands placed a maximum of 2 inches from the top with a maximum of 6 inches between the bands. ReflectORIZATION of cones shall be provided by a minimum 6 inch band placed a maximum of 3 inches from the top.

Cones or tubular markers are generally suitable for temporary usage (up to 8 hours) with other channelization devices such as vertical panels or drums for long term usage. Care should be taken to insure that they remain in their proper location and in an upright position.

PLASTIC DRUMS



Plastic drums used as a channelizing device or sign support shall not be allowed.

Plastic Drums, set on end, and used for traffic warning or channelization shall be approximately 36 inches in height and minimum of 18 inches in diameter. Two-piece plastic drums should be base mounted with closed top. Top may have a hand grip. Two piece plastic barrels should be weighted with a minimum of 30 pounds and a maximum of 75 pounds of sand placed in one or two sand bags or a sand filled base. When one piece plastic drums are used they shall be weighted with a maximum of 50 pounds of sand.

Nails or adhesives may be used to secure base of two piece drums to pavement. Nails or adhesives should not be used to secure one piece drum to pavement.

The markings on drums shall be horizontal, circumferential, reflectORIZED orange and reflectORIZED white stripes, 4 to 8 inches wide. The first reflectORIZED stripe should start within four inches of the top of the drum. There shall be at least two orange and two white stripes on each drum. If there are non-reflectORIZED spaces between the horizontal orange and white stripes, they shall be no more than 2 inches wide.

Color of drums before reflectORIZED stripes are added shall be orange.

Delineators may be placed on drums used in series for traffic channelization as specified in the plans or as directed by the Engineer. Color of delineators shall conform to the MUTCD requirements.

When warning lights are attached to drums, they shall be attached as per the manufacturer's recommendations.

CW-8 CHEVRON signs should not be mounted on plastic drums unless specified in the plans.

GENERAL NOTES

REFLECTORIZATION

The reflectORIZED white and reflectORIZED orange stripes for channelizing devices such as barricades, drums and vertical panels shall be constructed of retroreflective sheeting meeting the color and reflectivity requirements of Material Specification, D-9-8300, Type C, unless otherwise specified in the plans. Channelizing devices used only during daylight hours, may use any type sheeting meeting the color and reflectivity requirements of Material Specification, D-9-8300.

WARNING LIGHTS

Warning lights shall meet the requirements of the Texas Manual on Uniform Traffic Control Devices.

Type A-Low Intensity Flashing Warning Lights are commonly mounted on signs and/or barricades. They are intended to warn the driver that he is approaching a potentially hazardous area. Their use shall be as specified elsewhere in the plans, on Sheets BC(1) and BC(2), or as directed by the Engineer. Flashing warning lights shall not be used in a series.

Type B-High Intensity Flashing Warning Lights are normally used at/or approaching potentially hazardous site conditions within the construction area. As these lights are effective in daylight as well as at dark, they are designed to operate 24 hours per day. Their use should be specified elsewhere in the plans or as directed by the Engineer. Flashing warning lights shall not be used in a series.

Type C Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as specified in the plans, these standard sheets or as directed by the Engineer.

When required by the Engineer the Contractor shall furnish a copy of the warning lights certification. The certification will be by the manufacturer, stating the lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.

STANDARD PLANS TEXAS DEPARTMENT OF TRANSPORTATION BARRICADE AND CONSTRUCTION STANDARDS

CHANNELIZING DEVICES

BC (3) - 94

ORIGINAL DRAWING DATE	REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT	SHEET
4-88	6-88 2-94		F		174
CL- LR	7-89				
CL- DN	4-92				