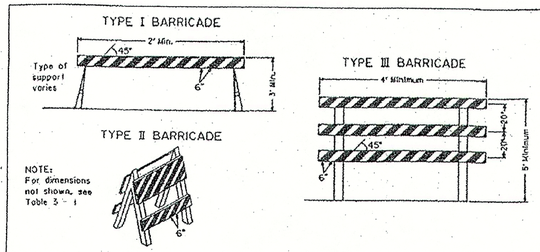


Figure 3 - 1
Standard Barricades

Table 3 - 1
Barricade Characteristics

Type*	I	II	III
Minimum Width of Rail	8 in.	8 in.	8 in.
Maximum Width of Rail	12 in.	12 in.	12 in.
Minimum Length of Rail	2 ft.	2 ft.	4 ft.
Width of Stripes**	6 in.	6 in.	6 in.
Minimum Height	3 ft.	3 ft.	5 ft.
Number of Reflectorized Rails facing one direction of traffic	1	2	3

* For wooden barricades nominal lumber dimensions will be satisfactory
** For 12" - 48" rail, 4 inch wide stripes shall be used

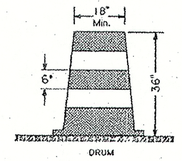


Figure 3 - 4

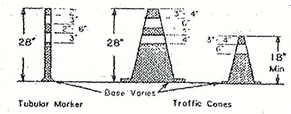
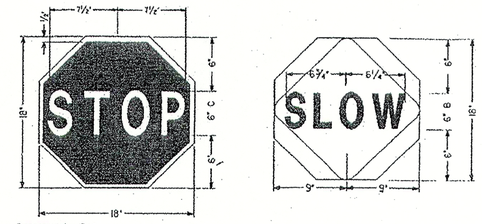


Figure 3 - 6



Background - Red
Borders - White
Legend - 6" series C
To be made of 0.08 aluminum, or 0.04 tempered aluminum

Background - Orange (reflectorized)
Area outside diamond - Black or Light Blue
Legend - 6" series B
To be made of 0.08 aluminum, or 0.04 tempered aluminum

Figure 3 - 7
Details of hand sign

To STOP Traffic — Traffic Proceed — To Alert & SLOW Traffic

Figure 3 - 9
Use of Hand Sign

Barricade Design

A barricade is a portable or fixed device having from one to three rails with appropriate markings used to control traffic by closing, restricting or delineating all or a portion of the right-of-way.

Barricades shall be one of three types: Type I, Type II, or Type III; as shown in Figure 3 - 1 and Table 3 - 1.

Stripes on barricade rails shall be alternate orange and white reflectorized stripes (sloping downward at an angle of 45° in the direction traffic is to pass). The stripes shall be 6 inches wide except where rail lengths are less than 36 inches, then 4 inch wide stripes may be used. The minimum rail length is 24 inches. The entire area of orange and white shall be reflectorized using encapsulated lens reflective sheeting which will display the same approximate size, shape and color day and night, conforming to Subsection 1015.05(e) of the Standard Specifications. The predominant color for other barricade components shall be white, except that unpainted galvanized metal or aluminum components may be used. Barricades used on expressways, freeways, and other high-speed roadways shall have a minimum of 270 square inches of reflective area facing traffic.

Where a barricade extends entirely across a roadway, the stripes should 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.

Barricade rails should be supported in a manner that will allow them to be seen by the motorist and provide a stable support not easily blown over by the wind or traffic. For Type I barricades, the support may include other unstriped horizontal panels necessary to provide stability. The name of the agency, contractor, or support shall not be shown on the face parts of any barricade. Identification markings may be shown only on the back side of barricade rails.

Barricades are located adjacent to traffic and therefore subject to impact by errant vehicles. Because of their vulnerable position and the possible hazard they could create, they should be constructed of lightweight materials and have no rigid stay bracing for A-frame designs.

Barricade Application

Type I or Type II barricades are intended for use in situations where traffic is maintained through the area being constructed and/or reconstructed. They may be used singly or in groups to mark a specific hazard or they may be used in a series for channeling traffic. Type I barricades would normally be used on conventional roads or urban streets and arterials. Type II barricades have more reflective area, and are intended for use on expressways and freeways or other high speed roadways.

On high speed expressways or in other situations where barricades may be susceptible to overturning in the wind, sandbags should be used for ballasting. Sandbags may be placed on lower parts of the frame or stays to provide the required ballast but shall not be placed on top of any striped rail. Barricades shall not be ballasted by solid objects such as rocks or chunks of concrete.

Where maintenance activities are being performed, the roadway condition seldom requires a complete closing of the facility. Where such a condition does occur, it is almost always an emergency situation, as would result from a broken watermain or a washed-out culvert. This type of repair work is generally initiated on an emergency basis and the street or road closure can be accomplished with Type I barricades.

On construction projects, where 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 or from curb to curb. Where provisions must be made for access of equipment and authorized vehicles, the Type III barricades shall 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 shall be assigned to a person to assure proper closure at the end of each working day.

When a road or street is legally closed, but access must still be allowed for local traffic; the Type III barricade cannot be extended completely across a roadway. A sign with the appropriate legend concerning permissible use by local traffic shall be mounted above the barricade.

Wing barricades are a special application of Type II barricade, erected on the roadway shoulder (on one or both sides of the pavement) to give the illusion of a narrowed or restricted roadway.

Type III barricades may be used as a mounting for regulatory signs, guide signs or lighting devices. The Road Closed signs, Detour Arrow signs, and the Large Arrow warning signs, for example, can effectively be mounted above the barricade that closes the roadway.

Construction and maintenance zones often encroach on sidewalks or crosswalks necessitating provisions for alternate routing. Where it is not possible to close a path and divert the pedestrians to other walkways, barricades may be used to define the path. Warning lights shall be used on sidewalk barricades in accordance with the following paragraphs; however, where high levels of illumination exist for sidewalk areas, extra lighting may not be needed.

For nighttime use of any type of barricade, add flashing warning lights when barricades are used singly, and steady burn lights when barricades are used in a series for channelization.

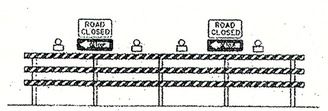


Figure 3 - 2
Barricade closing a road

Application of Barricades - Where a road is closed to traffic, Type III barricades shall be erected at the points of closure, and shall extend across the roadway to a minimum of 2 ft. from each edge. To further discourage public motorists gaining access through the construction site by removing the barricades, the Type III barricades shall be anchored to the existing roadway if necessary.

Figure 3 - 2 shows a typical closure of a two lane roadway. Four high intensity flashing warning lights shall be placed on the barricade as shown above. If only one lane of the travelway is closed by a barricade, two lights shall be used.

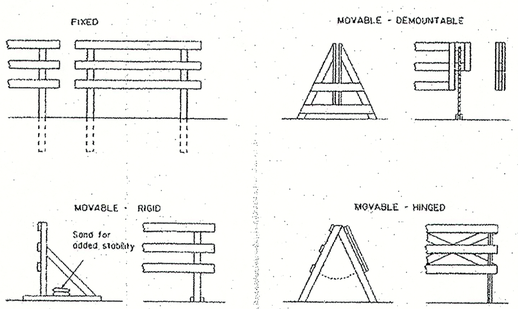


Figure 3 - 3
Type III barricade construction - Typical examples

Drum Design

Drums used for traffic warning or channelization shall be made of plastic and shall be as per the qualified product list. Drums shall be approximately 36 inches in height and a minimum of 18 inches in diameter. The markings on drums shall be horizontal, circumferential, alternating orange and white reflectorized stripes 6 inches wide, using a material that has a smooth, sealed outer surface which will display the same approximate size, shape and color day and night, conforming to Subsection 1015.05(e) of the Standard Specifications. There shall be at least two orange and two white stripes on each drum with the top stripe being orange. If there are nonreflectorized spaces between the horizontal orange and white stripes, they shall be no more than two inches wide. Drums shall have closed tops which will not allow collection of construction or other debris.

Drum Application

Drums are most commonly used to channelize or delineate traffic flow but may also be used singly or in groups to mark specific hazards. Drums are highly visible and have good target value, giving the appearance of being formidable obstacles and, therefore, command the respect of drivers. They are portable enough to be shifted from place to place within a construction project in order to accomodate changing conditions, but are generally used in situations where they will remain in place for a prolonged period of time. When drums are placed in the roadway, appropriate advance warning signs shall be used.

Drums should not be weighted with sand, water, or any other material to the extent that would make them hazardous to motorists, pedestrians, or workers; a typical ballast would be a 25 pound bag of sand placed on the base of the drum. When they are used in regions susceptible to freezing, they should have drain holes in the bottom so water will not accumulate and freeze, causing a hazard if struck by a motorist. Ballast shall not be placed on top of the drum. Drums shall not be ballasted with solid objects such as rocks or pieces of concrete.

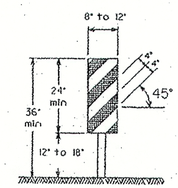


Figure 3 - 5

Vertical Panel Design

Vertical panels shall be 8 to 12 inches in width and at least 24 inches in height. They shall have orange and white stripes reflectorized with the same material as drums. Panel stripe widths shall be 6 inches except where panel heights are less than 36 inches, then 4 inch stripes may be used. If used for two-way traffic, back-to-back panels shall be used.

Stripes for vertical panels shall slope downward at an angle of 45° in the direction traffic is to pass. Vertical panels used on expressways, freeways, and other high speed roadways shall have a minimum reflective area of 270 square inches facing traffic

Vertical Panel Application

Vertical panels may be used to channelize traffic, divide opposing lanes of traffic, divide traffic lanes when two or more lanes are kept open in the same direction and in place of barricades where space is limited.

Tubular Marker Design

Tubular markers shall be predominantly orange, not less than 18 inches high and not less than 2 inches wide when viewed from any direction, and shall be made of a material that can be struck without damaging impacting vehicles. Tubular markers shall be a minimum of 28 inches high when they are used on freeways and other high-speed roadways and on all facilities during hours of darkness, or whenever more conspicuous guidance is needed.

For nighttime use tubular markers shall be reflectorized. Reflectorization of tubular markers shall be provided by two, 3 inch wide white bands placed a maximum of 2 inches from the top of the marker, with a maximum of 6 inches between the bands. Reflectorized material shall conform to Subsection 1015.05(e) for Drums of the Standard Specifications

Tubular Marker Application

Tubular markers have less visible area than other devices and shall generally be used in situations where space restrictions do not allow the use of more visible devices. They may be used to divide opposing traffic lanes, divide traffic lanes when one or more lanes are kept open in the same direction, and to delineate edge of pavement dropoff where space limitations do not allow the use of larger devices.

Steps should be taken to ensure that tubular markers will not be blown over or displaced by wind or moving traffic. Effective steps include affixing them to the pavement with anchor bolts or adhesive, using weighted bases or weighted rings that can be dropped over the marker. Ballast, however, should not present a hazard if the markers are inadvertently struck. If a non-cylindrical device is used, and it could be displaced with a width less than the minimum facing traffic, it shall be attached to the pavement.

Cone Design

Cones shall be predominantly orange, not less than 18 inches high, and shall be made of a material that can be struck without damaging impacting vehicles. Cones shall be a minimum of 28 inches high when they are used on freeways and other high-speed roadways and on all facilities during hours of darkness, or whenever more conspicuous guidance is needed.

For daytime use only, an 18 inch high cone may be reflectorized by placing a 6 inch wide white band 3 to 4 inches down form the top of the cone. For nighttime use, cones shall be reflectorized or equiped with lighting devices for maximum visibility. Reflectorization of 28 inch cones shall be provided by a white band 6 inches wide placed 3 to 4 inches from the top of the cone, and an additional 4 inch wide white band 2 inches below the 6 inch band. Reflectorized material shall have a smooth, sealed outer surface which will display the same approximate color day and night, and shall meet the requirements of Subsection 1015.05(e) of the Standard Specifications

Cone Application

Traffic cones are used to channelize traffic, divide opposing traffic lanes, divide traffic lanes when two or more lanes are kept open in the same direction, and shall basically be used for emergency situations, or short term operations that require rapid deployment and removal of channelizing devices.

Steps should be taken to ensure that cones will not be blown over or displaced by wind or moving traffic. Cones can be doubled up to increase their weight. Some cones are constructed with bases that can be filled with ballast, or can be weighted by dropping rings over the cone. Ballast, however, should not present a hazard if the cones are inadvertently struck.

Use of hand signaling devices by flagger

A flagger equiped with a sign paddle shall be stationed where construction operations require two-way traffic to use a single lane, where moving equipment enters or crosses the travelway, and well in advance of blasting or any other hazardous operation requiring the absolute control of traffic. Flagger stations shall be located in a highly visible location in advance of the work zone. The distance before the work zone should allow motorists to safely decelerate and is that related to the approach speeds and physical conditions of the site. 200 to 300 feet is desireable in most situations. In urban areas, where speeds are low and streets are closely spaced, the advance distance should be decreased. The hand sign (Fig 3-7) gives drivers more positive guidance than flags, and shall be the primary hand signaling device. The sign paddle shall be provided with a rigid handle and a secure mounting as shown.

The following standard procedure shall be followed by flaggers:

(A) Stand adjacent to the travelway, never in the travelway;
(B) Stand alone. Never permit a group of workers to congregate around or obscure the flaggers;
(C) Be courteous in explaining the reason for the delay and in issuing instructions to motorists;
(D) Reasonable efforts should be made to allow drivers the right-of-way and to prevent excessive delays;
(E) Flaggers shall wear an orange vest, an orange cap shall be optional;
(F) For night operations all signs and clothing shall be reflectorized, flagging stations should be illuminated, and flaggers should be equiped with a bright red light;
(G) Use the following motions to direct traffic (figure 3-9).
  1. To STOP traffic. Face traffic with STOP sign paddle in a stationary position, with arm extended horizontally from the body. Raise the free arm with the palm facing traffic;
  2. Traffic Proceed. Face traffic with SLOW sign paddle in a stationary position, with arm extended horizontally from the body. Use the free arm to motion traffic ahead;
  3. To Alert or SLOW Traffic. Face traffic with SLOW sign paddle in a stationary position, with arm extended horizontally from the body. Move the free arm up and down.;

F.A.P.	STATE PROJECT	PARISH	SHEET NO.

DATE	DESCRIPTION	BY

REVISION

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THIBODAUX MANDEVILLE HOUSTON
Civil Engineering • Site Development • Land Planning • Public Works • Architecture
735 N. Canaveral Boulevard - Suite 201
Mandeville, Louisiana 70448
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PROPOSED RETAIL DEVELOPMENT
CITY OF BOUTTE
ST. CHARLES PARISH, LOUISIANA
FOR THE SPECTRA GROUP, INC.
MEMPHIS, TENNESSEE

DATE	DESCRIPTION	BY APPROVED

REVISIONS

STANDARD PLAN NO. HS-01 — SHEET 3 OF 3

STANDARD PLAN
HIGHWAY SIGN AND BARRICADE DETAILS
FOR CONSTRUCTION PROJECTS
DATED:

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

DESIGNED A. Gomez — DETAILED D. Vega — TRACED
CHECKED J. Reddy — CHECKED A. Gomez — CHECKED
APPROVED — DATE

DRAWN	NMO
CHECKED	THB
DATE	8-10-07
SCALE	AS SHOWN
PROJECT NO.	07-205
FILE:	07-205 D1
SHEET	C-11

DETAIL SHEET