

PART 3

MARKINGS

CHAPTER 3A. GENERAL

Section 3A.01 Functions and Limitations

Support:

- 01 Markings on highways and on private roads open to public travel have important functions in providing guidance and information for the road user. Major marking types include pavement and curb markings, delineators, colored pavements, channelizing devices, and islands. In some cases, markings are used to supplement other traffic control devices such as signs, signals, and other markings. In other instances, markings are used alone to effectively convey regulations, guidance, or warnings in ways not obtainable by the use of other devices.
- 02 Markings have limitations. Visibility of the markings can be limited by snow, debris, and water on or adjacent to the markings. Marking durability is affected by material characteristics, traffic volumes, weather, and location. However, under most highway conditions, markings provide important information while allowing minimal diversion of attention from the roadway.

Section 3A.02 Standardization of Application

Standard:

- 01 **Each standard marking shall be used only to convey the meaning prescribed for that marking in this Manual. When used for applications not described in this Manual, markings shall conform in all respects to the principles and standards set forth in this Manual.**

Guidance:

- 02 *Before any new highway, private road open to public travel (see definition in Section 1A.13), paved detour, or temporary route is opened to public travel; all necessary markings should be in place.*

Standard:

- 03 **Markings that must be visible at night shall be retroreflective unless ambient illumination assures that the markings are adequately visible. All markings on Interstate highways shall be retroreflective.**
- 04 **Markings that are no longer applicable for roadway conditions or restrictions and that might cause confusion for the road user shall be removed or obliterated to be unidentifiable as a marking as soon as practical.**

Option:

- 05 Until they can be removed or obliterated, markings may be temporarily masked with tape that is approximately the same color as the pavement.

Section 3A.03 Maintaining Minimum Pavement Marking Retroreflectivity

(This Section is reserved for future text based on FHWA rulemaking.)

Section 3A.04 Materials

Support:

- 01 Pavement and curb markings are commonly placed by using paints or thermoplastics; however, other suitable marking materials, including raised pavement markers and colored pavements, are also used. Delineators channelizing devices are visibly placed in a vertical position similar to signs above the roadway.
- 02 Some marking systems consist of clumps or droplets of material with visible open spaces of bare pavement between the material droplets. These marking systems can function in a manner that is similar to the marking systems that completely cover the pavement surface and are suitable for use as pavement markings if they meet the other pavement marking requirements of the highway agency.
- 02a [The “Line Striping Material Selection Policy” contains further information regarding line striping material selection. This document can be obtained from the State Highway Administration’s Office of Traffic & Safety, Traffic Engineering Design Division at the address shown on Page i.](#)

Guidance:

- 03 *The materials used for markings should provide the specified color throughout their useful life.*

04 *Consideration should be given to selecting pavement marking materials that will minimize tripping or loss of traction for road users, including pedestrians, bicyclists, and motorcyclists.*

05 *Delineators should not present a vertical or horizontal clearance obstacle for pedestrians.*

Section 3A.05 Colors

Standard:

01 **Markings shall be yellow, white, red, blue, or purple. The colors for markings shall conform to the standard highway colors. Black in conjunction with one of the colors mentioned in the first sentence of this paragraph shall be a usable color.**

02 **When used, white markings for longitudinal lines shall delineate:**

- A. The separation of traffic flows in the same direction, or
- B. The right-hand edge of the roadway.

03 **When used, yellow markings for longitudinal lines shall delineate:**

- A. The separation of traffic traveling in opposite directions,
- B. The left-hand edge of the roadways of divided highways and one-way streets or ramps, or
- C. The separation of two-way left-turn lanes and reversible lanes from other lanes.

04 **When used, red raised pavement markers or delineators shall delineate:**

- A. Truck escape ramps, or
- B. One-way roadways, ramps, or travel lanes that shall not be entered or used in the direction from which the markers are visible.

05 **When used, blue markings shall supplement white markings for parking spaces for persons with disabilities.**

06 **When used, purple markings shall supplement lane line or edge line markings for toll plaza approach lanes that are restricted to use only by vehicles with registered electronic toll collection accounts.**

Option:

07 Colors used for official route shield signs (see Section 2D.11) may be used as colors of symbol markings to simulate route shields on the pavement (see Section 3B.20.)

08 Black may be used in combination with the colors mentioned in the first sentence of Paragraph 1 where a light-colored pavement does not provide sufficient contrast with the markings.

Support:

09 When used in combination with other colors, black is not considered a marking color, but only a contrast-enhancing system for the markings.

Section 3A.06 Functions, Widths, and Patterns of Longitudinal Pavement Markings

Standard:

01 **The general functions of longitudinal lines shall be:**

- A. A double line indicates maximum or special restrictions,
- B. A solid line discourages or prohibits crossing (depending on the specific application),
- C. A broken line indicates a permissive condition, and
- D. A dotted line provides guidance or warning of a downstream change in lane function.
- E. A double broken line indicates a reversible lane application.

02 **The widths and patterns of longitudinal lines shall be as follows:**

- A. Normal line—4 to 6 inches wide.

A-1. Normal line —5 inches wide on State owned, operated, and maintained roadways.

- B. Wide line—at least twice the width of a normal line.
- C. Double line —two parallel lines separated by a discernible space.
- D. Broken line—normal line segments separated by gaps.
- E. Dotted line—noticeably shorter line segments separated by shorter gaps than used for a broken line. The width of a dotted line extension shall be at least the same as the width of the line it extends.

Support:

03 The width of the line indicates the degree of emphasis.

Guidance:

- 04 *Broken lines should consist of 10-foot line segments and 30-foot gaps, or dimensions in a similar ratio of line segments to gaps as appropriate for traffic speeds and need for delineation.*

Support:

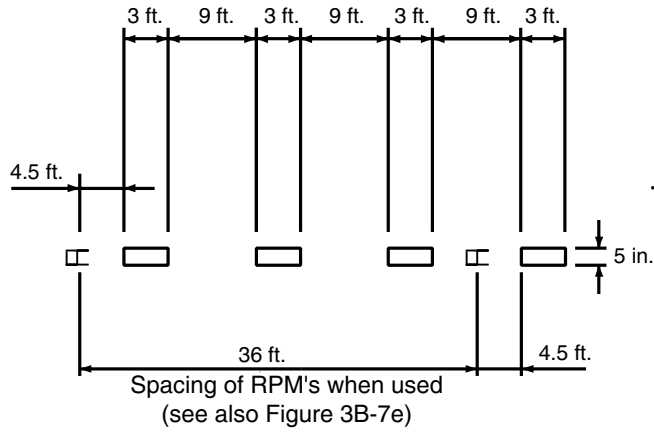
- 05 Patterns for dotted lines depend on the application (see Sections 3B.04 and 3B.08.)
- 05a Dotted lines are used to separate mandatory lane use, guide double and triple turn movements, and delineate speed change lanes and non-continuous lanes.

Guidance:

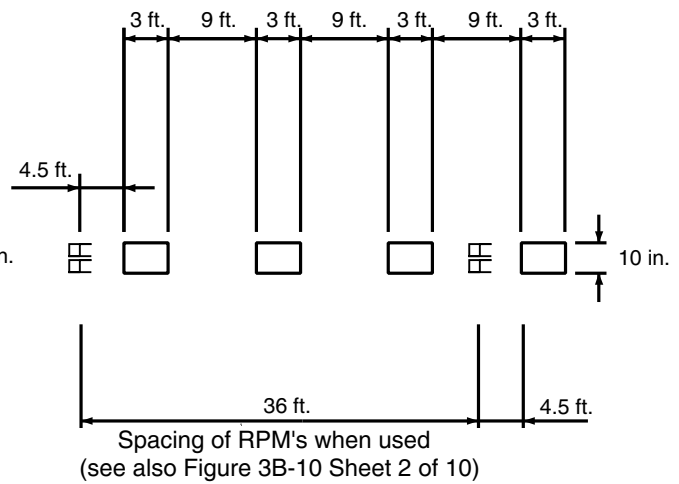
- 06 A dotted line for line extensions within an intersection or taper area should consist of 2-foot line segments and 2- to 6-foot gaps. A dotted line used as a lane line should consist of 3-foot line segments and 9-foot gaps.
- 06a On State owned, operated, and maintained roadways, dotted lines are subdivided into four categories:
- 06b Type I ("Puppy tracks"), 5 inches wide, should have segments 3-foot in length and gaps 9-foot in length. Type I tracks are normally used on conventional roadways to separate mandated use lanes.
- 06c Type II ("Elephant tracks"), 10 inches wide, used on expressways and highways or for added emphasis in other areas, should have segments 3-foot in length and gaps nine 9-foot in length to separate mandated use lanes.
- 06d Type III ("Line Extension"), 5 inches wide, should have segments 3-foot in length and gaps 3-foot in length. Type III tracks are normally used on edge line extensions through intersections or roadway junctions and to guide multiple turn movements.
- 06e Type IV ("Wide Line Extension"), 10 inches wide, should have segments 3-foot in length and gaps 3-foot in length. Type IV tracks are normally used on edge line extensions through expressway or roadway junctions.

Figure 3A-1a. Dotted Lines

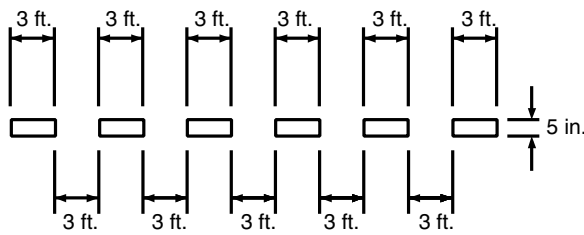
a - Type I "Puppy" - Conventional Roadways



b - Type II "Elephant" - Expressway / Freeway



c - Type III "Line Extension" - Intersection/Roadway Junction



d. Type IV "Wide Line Extension" - Expressway/Roadway Junction

