CHAPTER 6J. TTC ZONE PAVEMENT MARKINGS

Section 6J.01 Pavement Markings in TTC Zones

Support:

01 Pavement markings are installed or existing markings are maintained or enhanced in TTC zones to provide road users with a clearly defined path for travel through the TTC zone in day, night, and twilight periods under both wet and dry pavement conditions.

Guidance:

02 *The work should be planned and staged to provide for the placement and removal of the pavement markings in a way that minimizes the disruption to traffic flow approaching and through the TTC zone during the placement and removal process.*

Standard:

03 **Existing pavement markings shall be maintained in all long-term stationary (see Section 6N.01) TTC zones in accordance with Chapters 3A and 3B, except as otherwise provided for temporary pavement markings in Section 6J.02. Pavement markings shall match the alignment of the markings in place at both ends of the TTC zone. Pavement markings shall be placed along the entire length of any paved detour or temporary roadway prior to the detour or roadway being opened to road users.**

Guidance:

04 *For long-term stationary operations, pavement markings in the temporary traveled way that are no longer applicable should be removed or obliterated as soon as practical. Pavement marking obliteration should remove the non-applicable pavement marking material, and the obliteration method should minimize pavement scarring.*

Standard:

05 **Painting over existing pavement markings with black paint or spraying with asphalt shall not be accepted as a substitute for removal or obliteration.**

Option:

06 Removable, non-reflective, preformed tape that is approximately the same color as the pavement surface may be used where markings need to be covered temporarily.

Guidance:

07 *Centerlines and lane lines should be placed, replaced, or delineated where appropriate before the roadway is opened to traffic.*

Standard:

08 **On State highways, whenever construction or maintenance work causes obliteration of center stripe, temporary or permanent center stripe shall be in place prior to opening the State highway to public traffic.**

Section 6J.02 Temporary Markings

Support:

01 Temporary markings are those pavement markings or devices that are placed within TTC zones to provide road users with a clearly defined path of travel through the TTC zone when the permanent markings are either removed or obliterated during the work activities. Temporary markings are typically needed during the reconstruction of a road while it is open to traffic, such as overlays or surface treatments or where lanes are temporarily shifted on pavement that is to remain in place.

Guidance:

02 *Unless justified based on engineering judgment, temporary pavement markings should not remain in place for more than 14 days after the application of the pavement surface treatment or the construction of the final pavement surface on new roadways or over existing pavements.*

03 *The temporary use of edge lines, channelizing lines, lane-reduction transitions, gore markings, and other longitudinal markings, and the various non-longitudinal markings (such as stop lines, railroad crossings, crosswalks, words, symbols, or arrows) should be in accordance with the State's or highway agency's policy.*

Standard:

04 **Warning signs, channelizing devices, and delineation shall be used to indicate required road user paths in TTC zones where it is not possible to provide a clear path by pavement markings.**

05 **Except as otherwise provided in this Section, all temporary pavement markings for no-passing zones shall**

comply with the requirements of Chapters 3A and 3B. All temporary broken line pavement markings shall use the same cycle length as permanent markings and shall have line segments that are at least 2 feet long.

Guidance:

06 *All pavement markings and devices used to delineate road user paths should be reviewed during daytime and nighttime periods.*

Option:

07 Half-cycle lengths with a minimum of 2-foot stripes may be used on roadways with severe curvature (see Section 3A.04) for broken line center lines in passing zones and for lane lines.

08 For temporary situations of 14 days or less, for a two- or three-lane road, no-passing zones may be identified by using DO NOT PASS (R4-1), PASS WITH CARE (R4-2), and NO PASSING ZONE (W14-3) signs (see Sections 2B.36, 2B.37, and 2C.53) rather than pavement markings. Also, DO NOT PASS, PASS WITH CARE, and NO PASSING ZONE signs may be used instead of pavement markings on roads with low volumes for longer periods in accordance with the State's or highway agency's policy.

Guidance:

09 *If used, the DO NOT PASS, PASS WITH CARE, and NO PASSING ZONE signs should be placed in accordance with Sections 2B.36, 2B.37, and 2C.53.*

10 *If used, the NO CENTER LINE sign should be placed in accordance with Section 6H.29.*

Standard:

11 **Temporary lane lines and/or centerlines shall consist of retroreflectorized lines approximately 24 inch long, 4 inch wide, spaced approximately 24 feet apart.**

Option:

12 Day/night raised retroreflectorized pavement markers, approved by Caltrans, may be used in lieu of 24 inch lines. See Section 6J.03 for spacing requirements.

Guidance:

13 *Right edge lines should not be simulated with dashed lines or raised pavement markers because they could confuse motorists.*

Option:

14 Portable delineators, permanent type delineators, etc., may be used where it is considered desirable to enhance the edge of traveled way due to curvilinear alignment, narrowing pavement, etc.

Standard:

15 **Locations on two-lane conventional highways where no-passing zone centerline delineation has been obliterated shall be posted with a sign package consisting of a ROAD (STREET) WORK (W20-1) sign and WORK ZONE (G20-5aP) plaque in combination with a DO NOT PASS (R4-1) sign.**

Guidance:

16 *The R4-1 sign should be posted at approximate 2000 feet intervals throughout the extended no-pass zone. A PASS WITH CARE (R4-2) sign should also be placed at the end of the zone.*

Section 6J.03 Temporary Raised Pavement Markers

Option:

01 Retroreflective or internally illuminated raised pavement markers, or non-retroreflective raised pavement markers supplemented by retroreflective or internally illuminated markers, may be substituted for markings of other types in TTC zones.

Standard:

02 **If used, the color and pattern of the raised pavement markers shall simulate the color and pattern of the markings for which they substitute.**

03 ~~**If temporary raised pavement markers are used to substitute for broken line segments, a group of at least three retroreflective markers equally spaced at no greater than 5 feet shall be installed every 40 feet.**~~

04 ~~**If temporary raised pavement markers are used to substitute for solid lines, the markers shall be equally spaced at no greater than 10 feet, with retroreflective or internally illuminated units at a spacing no greater than 20 feet.**~~

04a **If temporary raised pavement markers are used to substitute for broken line segments, at least two retroreflective markers shall be placed, one at each end of a segment of 4 feet or less. For segments over 4 feet, a group of at least three retroreflective markers shall be equally spaced. See Section 3A.04 for more details.**

~~Option:~~

05 ~~Temporary raised pavement markers may be used to substitute for broken line segments by using at least two retroreflective markers placed at each end of a segment of 2 to 5 feet in length, using the same cycle length as permanent markings.~~

Guidance:

06 *Raised pavement markers should be considered for use along surfaced detours or temporary roadways, and other changed or new travel-lane alignments.*

Option:

07 Retroreflective or internally illuminated raised pavement markers, or non-retroreflective raised pavement markers supplemented by retroreflective or internally illuminated markers, may also be used in TTC zones to supplement markings as prescribed in Chapters 3A and 3B.

Section 6J.04 Delineators

Option:

01 Delineators may be used in TTC zones to indicate the alignment of the roadway and to outline the required vehicle path through the TTC zone.

Standard:

02 **When used, delineators shall combine with or supplement other TTC devices. They shall be mounted on crashworthy supports and shall be in accordance with Chapter 3G.**

Guidance:

03 *Spacing along roadway curves should be as set forth in Section 3G.04 and should be such that several delineators are visible to an approaching driver.*

Standard:

04 **The delineators shall be placed 2 feet to 6 feet outside the outer edge of the shoulder. Retroreflection of delineators shall be 3 x 12 inch minimum size.**