The following are the changes incorporated in 2014 CA MUTCD Revision 7. Text additions or changes to CA MUTCD Revision 7 are highlighted in yellow and identified by a teal-color bar along the left side of the paragraph.

- Chapter 2B: Regulatory Signs, Barricades, and Gates. Yellow highlight text is edited in Section 2B.13 Speed Limit Sign (R2-1). Table 2B-101(CA) and Table 2B-102 are also updated. New Table 2B-103(CA), Table 2B-104(CA), Table 2B-105, and Table 2B-106(CA) are added as well.

Section 2B.13 Speed Limit Sign (R2-1)

Support:

00 The setting of speed limits can be controversial and requires a rational and defensible determination to maintain public confidence. Speed limits are normally set near the 85th-percentile speed that statistically represents one standard deviation above the average speed and establishes the upper limit of what is considered reasonable and prudent. As with most laws, speed limits need to depend on the voluntary compliance of the greater majority of motorists. Speed limits cannot be set arbitrarily low, as this would create violators of the majority of drivers and would not command the respect of the public.

Artificially low speed limits can lead to poor compliance as well as large variations in speed within the traffic stream. Increased speed variance can also create more conflicts and passing maneuvers.

00a The most effective way to reduce speeds is through a combination of strategies using traffic control devices related to speed management, roadway design and engineering solutions, traffic calming techniques and measures, public education, and enforcement efforts. Effectively managing road user speed relies on numerous factors, which include enforcement, roadway characteristics, surrounding environment, adjacent land use, and traffic control devices. Many studies find that engineering changes, such as change a road's infrastructure, are one of the most important factors in reducing vehicle operating speeds. Engineering changes are also one of the most effective interventions at reducing pedestrian injury and fatality rates. Potential street engineering changes, such as curb extensions, median islands, raised crosswalks, roundabouts, and speed bumps or speed humps, naturally result in lower speeds. It is realized that these engineering changes can be costly and time-consuming to implement.

Standard:

01 **Speed zones (other than statutory speed limits) shall only be established on the basis of an engineering and traffic survey (E&TS) ~~study~~ that has been performed in accordance with traffic engineering practices. The engineering study shall include an analysis of the current speed distribution of free-flowing vehicles.**

02 **The Speed Limit (R2-1) sign (see Figure 2B-3) shall display the limit established by law, ordinance, regulation, or as adopted by the authorized agency based on the engineering study. The speed limits displayed shall be in multiples of 5 mph.**

03 **Speed Limit (R2-1) signs, indicating speed limits for which posting is required by law, shall be located at the points of change from one speed limit to another.**

04 **At the downstream end of the section to which a speed limit applies, a Speed Limit sign showing the next speed limit shall be installed. Additional Speed Limit signs shall be installed beyond major intersections and at other locations where it is necessary to remind road users of the speed limit that is applicable.**

05 **Speed Limit signs indicating the statutory speed limits shall be installed at entrances to the State and, where appropriate, at jurisdictional boundaries in urban areas.**

Support:

06 In general, the maximum speed limits applicable to rural and urban roads are established:

A. Statutorily – a maximum speed limit applicable to a particular class of road, such as freeways or city streets, that is established by State law; or

B. As altered speed zones – based on engineering studies.

07 State statutory limits might restrict the maximum speed limit that can be established on a particular road, notwithstanding what an engineering study might indicate.

Option:

08 ~~If a jurisdiction has a policy of installing Speed Limit signs in accordance with statutory requirements only on the streets that enter a city, neighborhood, or residential area to indicate the speed limit that is applicable to the entire city, neighborhood, or residential area unless otherwise posted, a CITYWIDE (R2-5aP), NEIGHBORHOOD (R2-5bP), or RESIDENTIAL (R2-5cP) plaque may be mounted above the Speed Limit sign and an UNLESS OTHERWISE POSTED (R2-5P) plaque may be mounted below the Speed Limit sign (see Figure 2B-3).~~

Guidance:

09 *A Reduced Speed Limit Ahead (W3-5 or W3-5a) sign (see Section 2C.38) should be used to inform road users of a reduced speed zone where the speed limit is being reduced by more than 10 mph, or where engineering judgment indicates the need for advance notice to comply with the posted speed limit ahead.*

10 *States and local agencies should conduct engineering studies at least once every 5, 7 or 14 years, in compliance with CVC Section 40802 to reevaluate non-statutory speed limits on segments of their roadways that have undergone significant changes since the last review, such as the addition or elimination of parking or driveways, changes in the number of travel lanes, changes in the configuration of bicycle lanes, changes in traffic control signal coordination, or significant changes in traffic volumes.*

11 *No more than three speed limits should be displayed on any one Speed Limit sign or assembly.*

12 ~~*When a speed limit within a speed zone is posted, it should be within 5 mph of the 85th percentile speed of free-flowing traffic.*~~

CVC Section 22358.6 – 85th-Percentile, Rounding, 5 mph Increment, 5 mph speed reduction and Maximum Speed Reduction

Standard:

12a **When a speed limit is to be posted, it shall be established at the nearest 5 mph increment of the 85th-percentile speed of free-flowing traffic (CVC Section 22358.6(a)), except as shown in the two Options below for rounding down and using 5 mph speed reduction (CVC Section 22358.6(b)), or rounding up (CVC Section 22358.6(c)), or if using additional 5 mph speed reduction on local agency roadways for safety corridor designation (CVC Section 22358.7(a)(1)) or adjacent to land or facility generating high concentrations of bicyclists and pedestrians (CVC Section 22358.7(a)(2)).**

Option:

1. For cases in which the nearest 5 mph increment of the 85th-percentile speed would require a rounding down, the posted speed may be reduced by 5 mph from the nearest 5 mph increment of the 85th-percentile speed, in compliance with CVC Sections 627 and 22358.5. CVC Sections 22353, 22353.2, 22353.3, 22353.4, and 22353.5, may also be considered, if applicable. See Standard below for documentation requirements. Refer to CVC Section 22358.6(b).
2. For cases in which the nearest 5 mph increment of the 85th-percentile speed would require a rounding up, then the speed limit may be rounded down to the nearest 5 mph increment below the 85th percentile speed, if no further reduction is used. Refer to CVC Section 21400(b). Refer to CVC Section 22358.6(c).

Standard:

12b **If the speed limit to be posted has had the 5 mph reduction applied, then an E&TS shall document in writing the conditions and justification for the lower speed limit and be approved by a registered Civil or Traffic Engineer. The reasons for the lower speed limit shall be in compliance with CVC Sections 627 and 22358.5. Refer to Section 22358.6(b).**

12c **The total reduction in the speed limit using the nearest 5 mph increment (CVC Section 22358.6(a)), rounding up (CVC Section 22358.6(c)), rounding down and using 5 mph speed reduction (CVC Section22358.6(b)), additional 5 mph speed reduction for safety corridor designation (CVC Section**

22358.7(a)(1)) or adjacent to land or facility generating high concentrations of bicyclists and pedestrians (CVC Section 22358.7(a)(2)), this speed reduction shall not exceed 12.4 mph from the 85th-percentile speed. Refer to CVC Section 22358.6(e).

Support:

12d Refer to Tables 2B-103(CA) and 2B-104(CA), which provides examples of 85th-percentile speed values and the application of the speed limit policies and criteria applicable per CVC 22358.6 and 22358.7.

12e Any existing E&TS that was performed before January 1, 2022 in accordance with previous traffic control device standards is not required to be updated until it is due for reevaluation per the 5, 7 or 14 year criteria.

CVC Sections 22358.7, 22358.8 and 22358.9 – Applicability on State Highway System & Local Agency Roadways

Standard:

12f **CVC Sections 22358.7, 22358.8 and 22358.9 and their related policies shall not be applicable to roadways on the State Highway System.**

Support:

12g CVC Sections 22358.7, 22358.8 and 22358.9 and their related policies are applicable on local agency roadways.

12h CVC Sections 22358.7, 22358.8 and 22358.9 and their related policies are also applicable on any privately owned and maintained roads or commercial establishments, if the private road or private property has been subjected to the CVC application by the private property owner or a particular city or county enacts an ordinance or resolution to this effect. Refer to CVC Sections 21100, 21100.1, 21107, 21107.5, 21107.6, and 21107.7.

Standard:

12i **The additional 5 mph speed reduction allowed by CVC Section 22358.7 on designated safety corridors or on portions of highway adjacent to any land or facility that generates high concentrations of bicyclists or pedestrians, shall not be applicable on any roadway segment that is on the State Highway System**

12j **The option allowed by CVC Section 22358.8 to retain the currently adopted speed limit or restore the immediately prior adopted speed limit, shall not be applicable on any roadway segment that is on the State Highway System.**

12k **Declaring prima facie speed limits of 25 mph or 20 mph on a highway contiguous to a business activity district allowed by CVC Section 22358.9 shall not be applicable on any roadway segment that is on the State Highway System.**

CVC Section 22358.7 – Safety corridor and Land or Facilities Generating High Concentrations of Bicyclists and Pedestrians

Standard:

12l **Additional lowering of the speed limits from those calculated using rounding (up or down) per CVC Section 22358.6(b) and 22358.6(c) and 5 mph speed reduction using CVC Section 22358.6(b), as included in paragraph 12a, and Options #1 and #2 processes, is prohibited, except for the local agency roadway segments designated as "safety corridor" or "land or facilities that generate high concentrations of bicyclists and pedestrians" in compliance with CVC Sections 22358.6(d) and 22358.7.**

Option:

12m Local agencies may additionally lower the speed limits by 5 mph from those calculated using rounding (up or down) per CVC Section 22358.6(b) and 22358.6(c) and 5 mph speed reduction using CVC Section 22358.6(b) if, after completing an E&TS, find that the speed limit is still more than is reasonable or safe, for either of the following reasons:

1. The portion of a highway has been designated as a safety corridor.
2. The portion of highway is adjacent to any land or facility that generates high concentrations of bicyclists or pedestrians, especially those from vulnerable groups such as children, seniors, persons with disabilities, and the unhoused.

CVC Section 22358.7(a)(1) – "Safety Corridor" Definition

Standard:

12n **A safety corridor shall be defined as a roadway segment within an overall roadway network where the highest number of serious injury and fatality crashes occur.**

12o **One or more of the required crash weighting factors listed in the Table 2B-105(CA) shall be used to prioritize the locations of fatal and serious injury crashes in developing the "Safety Corridor".**

Option:

12p Data used to determine a safety corridor may be from the most recent Engineering and Traffic Survey (E&TS) performed. The crash data source may include, but is not limited to, California Highway Patrol's (CHP) Statewide Integrated Traffic Records System (SWITRS).

Standard:

12q **The prioritized subset of safety corridors shall:**

1. **Identify specific locations with high crash occurrences.**
2. **Identify corridor-level segments with a pattern of crash reoccurrence.**
3. **Be able to be stratified by mode.**

12r **Safety corridors shall represent a prioritized subset of the overall roadway network within an authority's responsibilities and shall not exceed one-fifth of the overall roadway network.**

Guidance:

12s *A jurisdiction should use three to five years of the most recent crash data to determine a safety corridor based on Fatal and Serious Injury data.*

Option:

12t For crash coverage, safety corridors may identify the subset of the overall roadway network where a minimum of 25% of the Fatal + Serious Injury (F+SI) crashes occur.

12u To identify logical termini, the geographic extent of a safety corridor may be determined by non-engineering staff.

Standard:

12v **A licensed professional engineer shall sign off on logical termini identified for a safety corridor using existing E&TS.**

Option:

12w Crash/Volume rate may be used to provide additional locations to be included in the safety corridor. Local agencies may use proactive measures as indicators.

CVC Section 22358.7(a)(2) – "Land or facility that generates high concentrations of bicyclists or pedestrians" definition

Standard:

12x **Except for the Option in first paragraph below, a land or facility that generates high concentrations of bicyclists or pedestrians shall be defined as the portion of the highway where one or more of any of the generators listed in Table 2B-106(CA) are present within a distance of 1320 feet.**

Option:

12y Crash data that demonstrates a highway segment is within the top twenty percent of pedestrian and/or bicyclist fatalities or serious injuries over a three-to-five-year period may be used in lieu of one of the generators listed in Table 2B-106(CA).

Standard:

12z **A highway segment shall be defined as the portion of the highway where a location that meets the aforementioned criteria is present within a distance of 1320 feet.**

Option:

12aa A highway segment may be longer than 1320 feet provided that a minimum of one location within the top twenty percent of fatal and serious injury pedestrian and/or bicyclist crashes within a three-to-five-year period is present for every 1320 feet.

Standard:

12ab **The top twenty percent of pedestrian and/or bicyclist fatalities or serious injury crashes within a three to five year period shall be based on the geographic area within the jurisdiction of the Engineer performing the E&TS.**

Option:

12ac A high concentration of pedestrians and bicyclists may be longer than 1320 feet provided that a minimum of one generator is present for every 1320 feet.

12ad Data used to determine high concentration locations may be obtained from the most recently performed Engineering and Traffic Survey (E&TS).

Standard:

12ae **The provisions of CVC Section 22358.7 to additionally lower the speed limit (by designating safety corridor or on portion of highway is adjacent to any land or facility that generates high concentrations of bicyclists or pedestrians), shall not be applicable until actions required per CVC Section 22358.7 by Department of Transportation and Judicial Council are completed or June 30, 2024, whichever is sooner.**

CVC Section 22358.8 (Retain currently adopted or restore immediately prior speed limit)

Option:

12af Local agency may retain the currently adopted speed limit without further reduction or restore the immediately prior adopted speed limit without further reduction as provided in CVC Section 22358.8.

Standard:

12ag **Currently adopted speed limit or immediately prior adopted speed limit shall only be retained, by ordinance, if after completing an E&TS, local agency finds that the speed limit is still more than reasonable or safe, and that speed limit was established with an E&TS and if a registered engineer has evaluated the section of highway and determined that no additional general purpose lanes have been added to the roadway since completion of the traffic survey that established the prior speed limit.**

12ah **If local agency decides to use lower speed limit based on CVC Section 22358.8, after completing an E&TS and finding that the speed limit is still more than is reasonable or safe, it shall not be reduced by any more than 5 mph from the currently adopted speed limit not below the immediately prior speed limit. Refer to CVC Section 22358.8(b).**

CVC Section 22358.9 – Business Activity District

Option:

12ai A local authority may, by ordinance, determine and declare a 25 or 20 mph prima facie speed limit on a highway contiguous to a business activity district when posted with a sign that indicates a speed limit of 25 or 20 mph if the highway segment meets all of the following conditions:

1. A maximum of four traffic lanes.
2. A maximum posted 30 mph prima facie speed limit immediately prior to and after the business activity district, if establishing a 25 mph speed limit.
3. A maximum posted 25 mph prima facie speed limit immediately prior to and after the business activity district, if establishing a 20 mph speed limit.

12aj A "business activity district" is that portion of a highway and the property contiguous thereto that includes central or neighborhood downtowns, urban villages, or zoning designations that prioritize commercial land uses at the downtown or neighborhood scale and meets a least three of the following four requirements:

4. No less than 50 percent of the contiguous property fronting the highway consists of retail or dining commercial uses, including outdoor dining, that open directly onto sidewalks adjacent to the highway.
5. Parking, including parallel, diagonal, or perpendicular spaces located alongside the highway.
6. Traffic control signals or stop signs regulating traffic flow on the highway, located at intervals of no more than 600 feet.
7. Marked crosswalks not controlled by a traffic control device.

Standard:

12ak **A local authority shall not declare a prima facie speed limit on a portion of a highway where the local authority has already lowered the speed limit as permitted for designated safety corridors (CV Section 22358.7) or using the land or facility adjacent to high concentration of pedestrians and bicyclists (CVC Section 22358.7) or retained the currently adopted speed limit (CVC Section 22358.8) or have restored the immediately prior adopted speed limit (CVC Section 22358.8). Refer to CVC Section 22358.9(c).**

13 *Speed studies for signalized intersection approaches should be taken outside the influence area of the traffic control signal, which is generally considered to be approximately 1/2 mile, to avoid obtaining skewed results for the 85th-percentile speed.*

Support:

14 Advance warning signs and other traffic control devices to attract the motorist's attention to a signalized intersection are usually more effective than a reduced speed limit zone.

Guidance:

15 *An advisory speed plaque (see Section 2C.08) mounted below a warning sign should be used to warn road users of an advisory speed for a roadway condition. A Speed Limit sign should not be used for this situation.*

Option:

16 Other factors that may be considered when establishing or reevaluating speed limits are the following:

A. Road characteristics, shoulder condition, grade, alignment, and sight distance;
B. The pace;
C. Roadside development and environment;
D. Parking practices and pedestrian activity; and
E. Reported crash experience for at least a 12-month period.

17 Two types of Speed Limit signs may be used: one to designate passenger car speeds, including any nighttime information or minimum speed limit that might apply; and the other to show any special speed limits for trucks and other vehicles.

18 A changeable message sign that changes the speed limit for traffic and ambient conditions may be installed provided that the appropriate speed limit is displayed at the proper times.

19 A changeable message sign that displays to approaching drivers the speed at which they are traveling may be installed in conjunction with a Speed Limit sign.

Guidance:

20 *If a changeable message sign displaying approach speeds is installed, the legend YOUR SPEED XX MPH or such similar legend should be displayed. The color of the changeable message legend should be a yellow legend on a black background or the reverse of these colors.*

Support:

21 Advisory Speed signs and plaques are discussed in Sections 2C.08 and 2C.14. Temporary Traffic Control Zone Speed signs are discussed in Part 6. The WORK ZONE (G20-5aP) plaque intended for installation above a Speed Limit sign is discussed in Section 6F.12. School Speed Limit signs are discussed in Section 7B.15.

22 Speed limits in California are governed by the California Vehicle Code (CVC), Sections 22348 through 22413; also, pertinent sections are found in Sections 627 and 40802 and others referenced in this section. See Section 1A.11 for information regarding this publication.

23 Refer to Part 6, Section 6C.01 for speed limit signs in temporary traffic control zones. Refer to Part 7 for speed limit signs in school areas.

Engineering and Traffic Survey (E&TS)

Support:

24 CVC Section 627 defines the term "Engineering and traffic survey" and lists its requirements.

Standard:

25 **An engineering and traffic survey (E&TS) shall include, among other requirements deemed necessary by Caltrans, consideration of all of the following:**

A. Prevailing speeds as determined by traffic engineering measurements.
B. Collision records.
C. Highway, traffic, and roadside conditions not readily apparent to the driver.

Guidance:

26 *The E&TS should contain sufficient information to document that the required three items of CVC Section 627 are provided and that other conditions not readily apparent to a driver are properly identified.*

27 *Prevailing speeds are determined by a speed zone survey. A speed zone survey should include:*

A. The intent of the speed measurements is to determine the actual speed of unimpeded traffic. The speed of traffic should not be altered by concentrated law enforcement, or other means, just prior to, or while taking the speed measurements.
B. Only one person is required for the field work. Speeds should be read directly from a radar or other electronic speed measuring devices; or,
C. Devices, other than radar, capable of accurately distinguishing and measuring the unimpeded speed of free flowing vehicles may be used.
D. A location should be selected where prevailing speeds are representative of the entire speed zone section. If speeds vary on a given route, more than one speed zone section may be required, with separate measurements for each section. Locations for measurements should be chosen so as to minimize the effects of traffic signals or stop signs.
E. Speed measurements should be taken during off-peak hours between peak traffic periods on weekdays. If there is difficulty in obtaining the desired quantity, speed measurements may be taken during any period with free flowing traffic.
F. The weather should be fair (dry pavement) with no unusual conditions prevailing.
G. The surveyor and equipment should not affect the traffic speeds. For this reason, an unmarked car is recommended, and the radar speed meter located as inconspicuously as possible.
H. In order for the sample to be representative of the actual traffic flow, the minimum sample should be 100 vehicles in each survey. In no case should the sample contain less than 50 vehicles.
I. Short speed zones of less than 0.5 miles should be avoided, except in transition areas.
J. Speed zone changes should be coordinated with changes in roadway conditions or roadside development.
K. Speed zoning should be in 10 mph increments except in urban areas where 5 mph increments are preferable.
L. Speed zoning should be coordinated with adjacent jurisdictions.

Support:

28 Physical conditions such as width, curvature, grade and surface conditions, or any other condition readily apparent to the driver, in the absence of other factors, would not require special downward speed zoning. Refer to CVC 22358.5.

Option:

29 When qualifying an appropriate speed limit, local authorities may also consider all of the following findings:

A. Residential density, if any of the following conditions exist on the particular portion of highway and the property contiguous thereto, other than a business district:
    1. Upon one side of the highway, within 0.25 miles, the contiguous property fronting thereon is occupied by 13 or more separate dwelling houses or business structures.
    2. Upon both sides of the highway, collectively, within a distance of 0.25 miles the contiguous property fronting thereon is occupied by 16 or more separate dwelling houses or business structures.
    3. The portion of highway is larger than 0.25 miles but has the ratio of separate dwelling houses or business structures to the length of the highway described in either subparagraph 1 or 2 above.

B. Safety of bicyclists and pedestrians, with increased consideration for vulnerable pedestrian groups including children, seniors, persons with disabilities, users of personal assistive mobility devices, and the unhoused.

30 The following two methods of conducting E&TS may be used to establish speed limits:

1. State Highways - The E&TS for State highways is made under the direction of the Caltrans District Traffic Engineer. The data includes:
   a. One copy of the Example of Speed Zone Survey Sheet (See Figure 2B-101(CA)) showing:
      - A north arrow
      - Engineer's station or post mileage
      - Limits of the proposed zones
      - Appropriate notations showing type of roadside development, such as “scattered business,” “solid residential,” etc. Schools adjacent to the highway are shown, but other buildings need not be plotted unless they are a factor in the speed recommendation or the point of termination of a speed zone.
      - Collision rates for the zones involved
      - Average daily traffic volume
      - Location of traffic signals, signs and markings
      - If the highway is divided, the limits of zones for each direction of travel
      - Plotted 85th percentile and pace speeds at location taken showing speed profile
   b. A report to the District Director that includes:
      - The reason for the initiation of speed zone survey.
      - Recommendations and supporting reasons.
      - The enforcement jurisdictions involved and the recommendations and opinions of those officials.
      - The stationing or reference post in mileage at the beginning and ending of each proposed zone and any intermediate equations. Location ties must be given to readily identifiable physical features.
2. City and County Through Highways, Arterials, Collector Roads and Local Streets.
   a. The short method of speed zoning is based on the premise that a reasonable speed limit is one that conforms to the actual behavior of the majority of motorists, and that by measuring motorists' speeds, one will be able to select a speed limit that is both reasonable and effective. Other factors that need to be considered include but are not limited to: the most recent two-year collision record, roadway design speed, safe stopping sight distance, superelevation, shoulder conditions, profile conditions, intersection spacing and offsets, commercial driveway characteristics, and pedestrian traffic in the roadway without sidewalks.
   b. Determination of Existing Speed Limits - Figures 2B-103(CA) & 2B-104(CA) show examples of data sheets which may be used to record speed observations. Specific types of vehicles may be tallied by use of letter symbols in appropriate squares.

31 In most situations, the short form for local streets and roads will be adequate; however, the procedure used on State highways may be used at the option of the local agency.

32 Any agency may lower the speed limit below the prima facie speed limit after performing, and based on the results of an E&TS.

Guidance:

33 *The establishment of a speed limit of more than 5 mph below the 85th percentile speed should be done with great care as studies have shown that establishing a speed limit at less than the 85th percentile generally results in an increase in collision rates; in addition, this may make violators of a disproportionate number of the reasonable majority of drivers.*

Support:

34 Generally, the most decisive evidence of conditions not readily apparent to the driver surfaces in collision histories.

35 Speed limits are established at or near the 85th percentile speed, which is defined as that speed at or below which 85th percent of the traffic is moving. The 85th percentile speed is often referred to as the critical speed. Pace speed is defined as the 10 mph increment of speed containing the largest number of vehicles (See Figure 2B-102(CA)). The lower limit of the pace is plotted on the Speed Zone Survey Sheets as an aid in determining the proper zone limits. Speed limits higher than the 85th percentile are not generally considered reasonable and prudent. Speed limits below the 85th percentile do not ordinarily facilitate the orderly movement of traffic and require constant enforcement to maintain compliance. Speed limits established on the basis of the 85th percentile conform to the consensus of those who drive highways as to what speed is reasonable and prudent, and are not dependent on the judgment of one or a few individuals.

36 The majority of drivers comply with the basic speed law. Speed limits set at or near the 85th percentile speed provide law enforcement officers with a limit to cite drivers who will not conform to what the majority considers reasonable and prudent. Further studies show that establishing a speed limit at less than the 85th percentile (Critical Speed) generally results in an increase in collision rates.

Option:

37 When roadside development results in traffic conflicts and unusual conditions which are not readily apparent to drivers, as indicated in collision records, speed limits somewhat below the 85th percentile may be justified. Concurrence and support of enforcement officials are necessary for the successful operation of a restricted speed zone.

Guidance:

38 *Speed zones of less than 0.5 miles and short transition zones should be avoided.*

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Speed Traps

Support:

93 Refer to CVC 40802 for Speed Traps.

Standard:

94 **A speed trap shall not apply to a local street, road, school zone, senior zone, or business activity district.**

Support:

95 Senior zone is an area approaching or passing a senior center building or other facility primarily used by senior citizens, or the grounds thereof that is contiguous to a highway and on which is posted a standard "SENIOR" warning sign pursuant to CVC Section 22352.

96 Business activity district is a section of highway described in CVC Section 22358.9(b) in which a standard 25 mph or 20 mph speed limit sign has been posted pursuant to CVC Section 22358.9(a)(1).

Standard:

97 **A section of highway shall be defined as a speed trap if the prima facie speed limit is not justified by an engineering and traffic survey (E&TS) within five years, and the enforcement of the speed limit involves the use of radar or any other electronic device that measures the speed of moving objects.**

98 **This time provision shall be extended to seven years when using radar and all of the following criteria are met:**

- **The arresting officer has successfully completed a minimum of 24 hours of certified radar operator course training.**
- **The radar used to measure the speed meets or exceeds the minimal operational standards of the National Traffic Highway Safety Administration, and has been calibrated within three years of the alleged violation.**

Table 2B-101(CA). Standard Application of Speed Limits per California Vehicle Code

Speed	Determined by	Roadway Facility	CVC Section
15 mph	State or local authority	▪ Railroad grade crossing with obstructed view ▪ Uncontrolled highway intersection with obstructed view ▪ An alley	22352.a.1
15 & 20 mph	State or local authority	Where the prima facie speed of 25 mph is more than is reasonable or safe ▪ Narrow street not exceeding 25 feet other than a State Highway in a business or residential area or in a public park ▪ Road near a school or senior center facility	22358.3 & 22358.4
25 mph	State or local authority	▪ Any highway in any business or residential district ▪ A street contiguous to senior citizen facility other than a State highway ▪ Adjacent to a children's playground in a public park, but only during particular hours or days when children are expected to use facilities	22352.b & 22357.1

Table 2B-102(CA). Standard Application of Speed Limits per California Vehicle Code

Speed	Determined by	Roadway Facility	CVC Section
15 to 60 mph	Caltrans	State highway, based on an E&TS where ethe limit of 65 mph is more than reasonable or safe	22354
15 to 60 mph	Local city council or county board of supervisors for Caltrans	State highway, local entities may conduct a public hearing on proposed increases or decreases and the State Department of Transportation shall take into consideration the results of the public hearing	22354.5
30 to 65 mph	Local authority	Any street other than a State highway, by ordinance, may post a prima facie speed limit based on an E&TS where a speed > 25 mph would facilitate the orderly movement of vehicular traffic and would be reasonable and safe	22357
15 to 60 mph	Local authority	Any street other than a State highway, by ordinance, may post a prima facie speed limit based on an E&TS where the limit of 65 mph is more than is reasonable and safe	22358.8(a)
20 to 50 mph for Trucks	State or local authority	Highways under their respective jurisdiction where 55 mph is more than is reasonable or safe for vehicles mentioned in CVC 22406 (Trucks and other large vehicles)	22407
Maximum Speed 55 mph	State or local authority	▪ Two-lane, undivided highway ▪ Any highway if driving any of the following vehicles: a. Motortruck or truck tractor with > 3 axles b. Passenger vehicle or bus towing any other vehicle c. School bus transporting any school pupil d. A farm labor vehicle when transporting passengers e. A vehicle transporting explosives f. A trailer bus	22349.b & .c and 22406
Maximum Speed Limit of 65 mph	State or local authority	Any highway, posted at 65 mph based upon an E&TS, for vehicles not subject to CVC 22406	22349(a) & 22349
Maximum Freeway Speed Limit 70 mph	Caltrans	Freeways, after consultation with the California Highway Patrol, based upon an E&TS, or upon the basis of appropriate designs standards and projected traffic volumes in the case of newly constructed freeway segments, for vehicles not subject to CVC 22406	22356

Table 2B-103(CA). Examples showing applicability of rounding and additional speed reduction on State Highway System

85th-Percentile Speed (mph)	Rounding to nearest 5 mph increment (CVC 22358.6(a))	If rounding to nearest is up, may round down (CVC 22358.6(c))	If rounding to nearest if down, may additionally lower by 5 mph (CVC 22358.6(b))
47.5-50.0	50	45	No
45.1-47.4	45	No	40
42.5-45.0	45	40	No
40.1-42.4	40	No	35

Note – CVC Sections 22358.7, 22358.8 & 22358.9 are applicable to local agency roadways and public properties subjected to CVC, they are not applicable to the State Highway System. Refer to Section 2B.13 for more details.

Table 2B-104(CA). Examples showing applicability of rounding and additional speed reduction on Local Agency's Roadways & Private Property Subjected to CVC

85th-Percentile Speed (mph)	Rounding to nearest 5 mph increment (CVC 22358.6(a))	If rounding to nearest is up, may round down (CVC 22358.6(c))	If rounding to nearest if down, may additionally lower by 5 mph (CVC 22358.6(b))	If safety corridor or adjacent to high concentration of bicyclists & pedestrians, may additionally lower by 5 mph (CVC 22358.7)*
47.5-50.0	50	45	No	40
45.1-47.4	45	No	40	35
42.5-45.0	45	40	No	35
40.1-42.4	40	No	35	30

* Note – CVC Sections 22358.7, 22358.8 & 22358.9 are applicable to local agency roadways and private properties subjected to CVC, they are not applicable to the State Highway System. Refer to Section 2B.13 for more details.

Table 2B-105(CA). Safety Corridor Definition Requirements

Category	Factors
Crash Weighting Factors to Develop One Serious/Fatal Injury Safety Corridor	Crash weighting can be developed using fatal and serious injury crash data and other factors to prioritize safety corridors. Suggested weighting factors are as follows: ▪ Crash severity: Fatal Crashes, Serious Injury Crashes ▪ Mode: Pedestrian-bicycle related crashes, vehicle/other ▪ Disadvantaged Community Status: MPO/RTPA or locally defined disadvantaged community status based on most current version of CalEnviroScreen ▪ Vulnerable Populations: Seniors (age 65 and older) and Youth (under age 15) based on the American Community Survey ▪ School proximity (within 0.25 miles) based on the California School Campus Database
Crash Density	Each roadway segment block can be converted into ~ 0.25 mile overlapping "corridor" segments to create a consistent unit of measurement and asses the concentration of linear patterns of injuries within a define distance. The highest scoring (i.e. most fatal and serious injury crashes per mile) "corridor" segments within a street needs to be identified and an appropriate threshold set to determine safety corridor eligibility.
Maintenance	The jurisdiction can establish a review and re-evaluation frequency for safety corridors. However, such frequency need not exceed seven years.

Table 2B-106(CA). Requirements to determine Land or Facility that Generates High Concentrations of Bicyclists or Pedestrians

Category	Generator
Land Use	Employment centers
	Presence of retail
	Parks, multi-use trails, and recreational destinations
	Schools/universities
	Senior Centers
	Cultural areas, entertainment space areas, or areas of community significance
	Religious facilities
	Health/medical facilities
Transit Factors	Transit stops
	Transit Oriented Developments/Transit Priority Areas
Presence of Pedestrian/Bicyclist Infrastructure	Sidewalk presence
	Crosswalk presence
	Bikeway presence
	Nearby signalized intersections on four-way intersections
	Presence of micromobility devices such as bicycles or scooters
Demographic Factors	Presence of vulnerable groups including children, seniors, persons with disabilities, users of personal assistive mobility devices, and the unhoused
	MPO/RTPA or locally defined disadvantaged community status
	Presence of students (all levels)
Local Data	Need identified in a safety analysis such as a road safety audit or formalized planning document such as a local road safety plan

- Section 2D.03 Color, Retroreflection, and Illumination. Yellow highlight text is edited in Section 2D.03.

Section 2D.03 Color, Retroreflection, and Illumination

…

Energy Conservation Measures for Guide Signs

Guidance:

20 *All non-action guide sign lighting (Interchange Sequence (G23(CA) Series) signs) should be turned off, except in special situations where motorist safety could be affected.*

21 *Following are some situations where engineering judgment should be used to determine if illumination should be maintained:*

A. Locations prone to heavy fog or poor visibility.
B. Signs in work zones or in the proximity of work zones.
C. Non-action guide signs adjacent to other signs that must be lighted.

Option:

22 Lighting on overhead action guide signs may be omitted if retroreflectivity, as required by Section 2A.08 is provided.

Guidance:

23 *When illuminated, lights should be replaced with energy efficient fixtures on highways.*

Standard:

24 **New overhead guide sign structure designs shall include appropriate conduit, pull boxes, and fixture attachment points for the future installation of sign lighting, if and when needed.**

- Chapter 3A: General. Yellow highlight text is edited in Section 3A.06 Functions, Widths, and Patterns of Longitudinal Pavement Markings. Figures 3A-101(CA) through 3A-112(CA) and Figure 3A-114(CA) are also updated.

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.

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

A. Normal line—4 to 6 inches wide.

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.

02a **All longitudinal traffic lines for lanelines, edgelines, and centerlines on state highways shall be 6 inches wide. When a state highway intersects with a local road, only mainline state highway longitudinal traffic lines for lanelines, edgelines, and centerlines shall be 6 inch wide.**

02b **All longitudinal traffic lines on local agency roadways shall be minimum 4 inch wide.**

Option:

02c Longitudinal traffic lines on local agency roadways may be 6 inch wide.

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.)

~~*Guidance:*~~

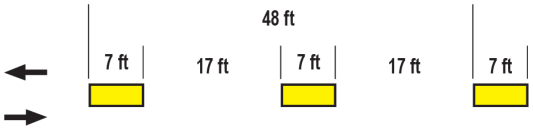
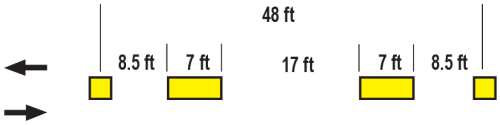
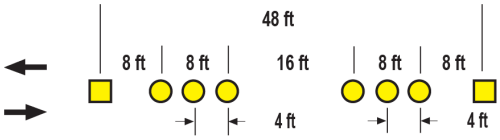
06 ~~*A dotted line for line extensions within an intersection or taper area should consist of 2-foot line segments and 2- to 6-foot gaps. A dotted line used as a lane line should consist of 3-foot line segments and 9-foot gaps.*~~

Standard:

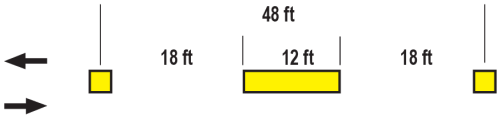
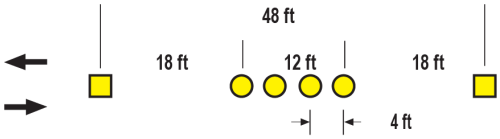
07 **The widths and patterns of longitudinal lines shall conform to the details shown in Figures 3A-101(CA) through 3A-114(CA).**

Figure 3A-101 (CA). Centerlines - 2 Lane Highways

FOR SPEEDS 40 mph OR LESS

	POLICY
DETAIL 1 	Centerline pattern for use on two-lane streets and highways (normally used on local streets and highways).
DETAIL 2 	Centerline pattern with pavement markers for use on two-lane streets and highways.
DETAIL 4 	Alternate to Detail 2. For use at problem locations where it is difficult to place and maintain centerline because of moisture, sand, etc.

FOR SPEEDS 45 mph OR MORE

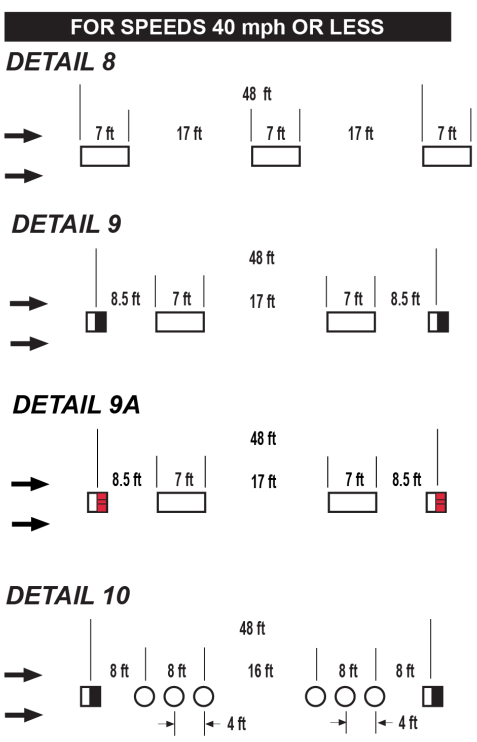
DETAIL 5 	Centerline pattern for use on two-lane streets and highways (normally used on local streets and highways).
DETAIL 6 	Centerline pattern with pavement markers for use on two-lane streets and highways.
DETAIL 7 	Alternate to Detail 6. For use at problem locations where it is difficult to place and maintain centerline because of moisture, sand, etc.

LEGEND

- 4 to 6 in Yellow (for local agencies)
  6 in Yellow (on State Highway System)
- Direction of Travel
- Two-Way Yellow Retroreflective Markers
- Non-Retroreflective Yellow Markers

NOT TO SCALE

Figure 3A-102 (CA). Lane Lines - Multilane Highways (Sheet 1 of 2)



POLICY

Lane Line pattern for use on multilane streets and highways (normally used on local streets and highways).

Lane Line pattern with pavement markers for use on multilane streets, and highways.

Lane line pattern with pavement markers for use on multilane streets, highways and freeway ramps.

Lane Line pattern with pavement markers for use on multilane streets, highways and freeway ramps.

NOT TO SCALE

LEGEND

4 to 6 in White (for local agencies)
6 in White (on State Highway System)

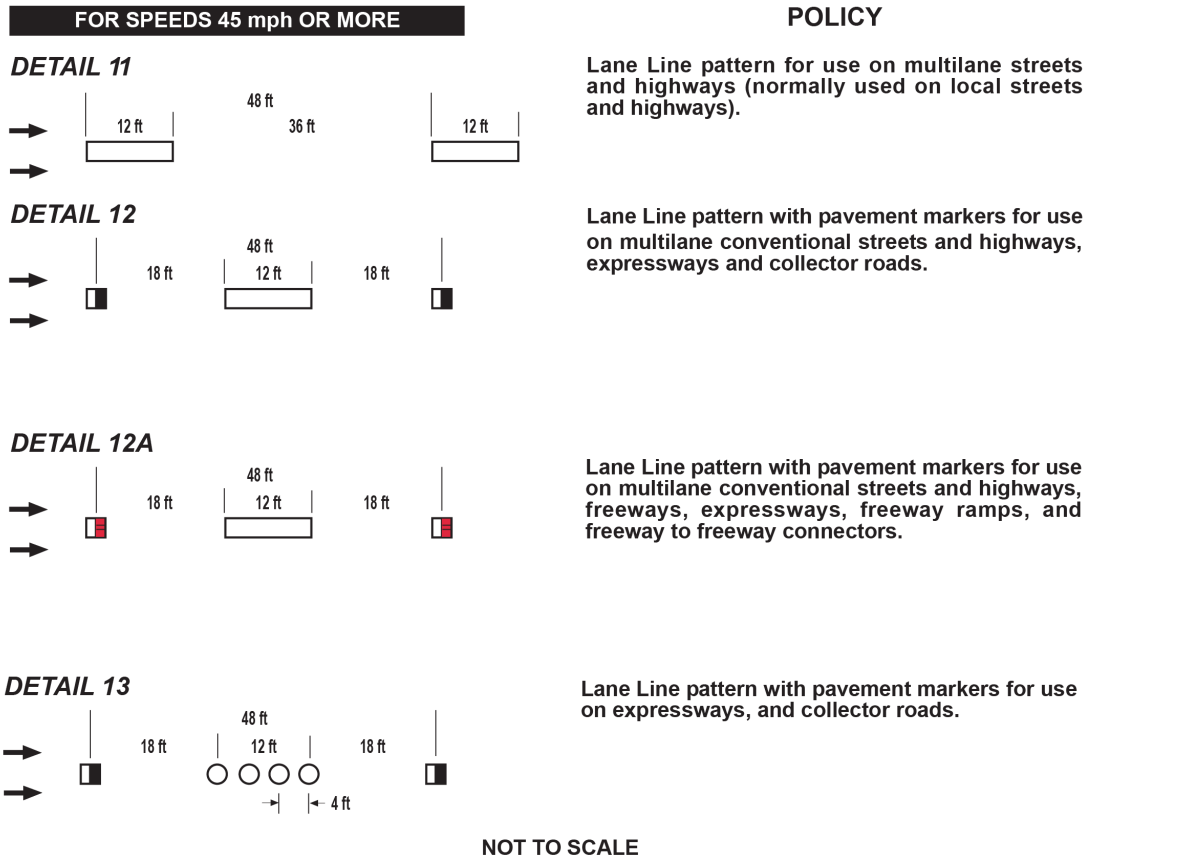
One-Way Clear Retroreflective Markers

Non-Retroreflective White Markers

Red-Clear Retroreflective Markers

Direction of Travel

Figure 3A-102 (CA). Lane Lines - Multilane Highways (Sheet 2 of 2)



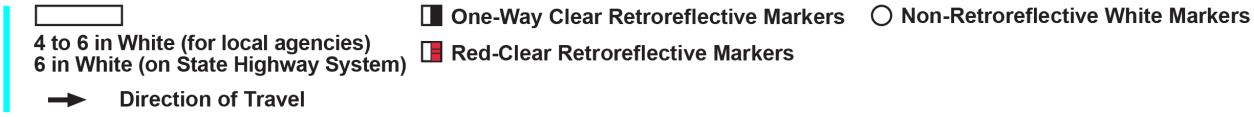
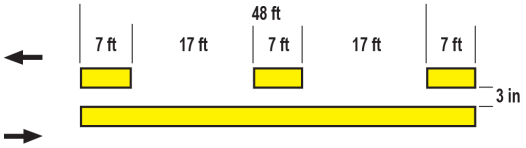


Figure 3A-103 (CA). No Passing Zones - One Direction

FOR SPEEDS 40 mph OR LESS

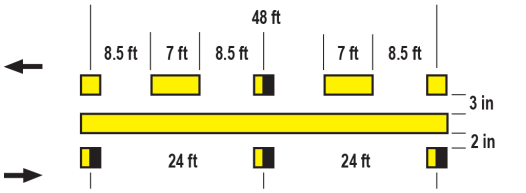
DETAIL 15



POLICY

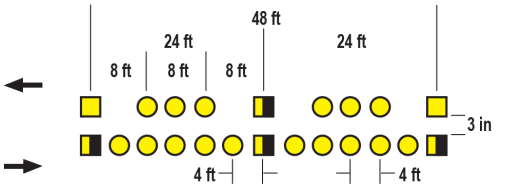
One direction no-passing pattern for use on two-lane streets and highways (normally used on local streets and highways). See Note 2.

DETAIL 16



One direction no-passing pattern with pavement markers for use on two-lane streets and highways. See Notes 1 and 2.

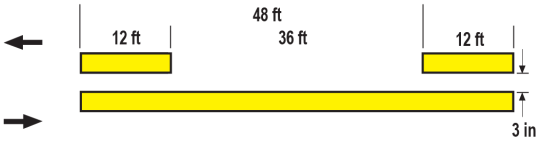
DETAIL 17



Alternate to Detail 16. For use with Detail 4.

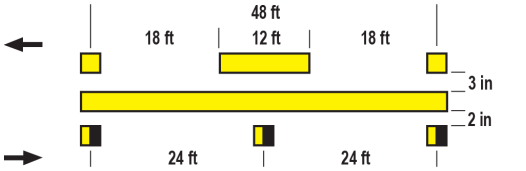
FOR SPEEDS 45 mph OR MORE

DETAIL 18



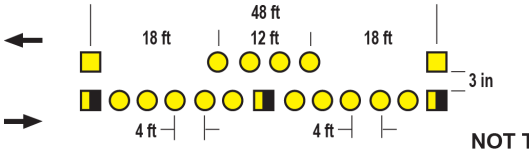
One direction no-passing pattern for use on two-lane streets and highways (normally used on local streets and highways). See Note 2.

DETAIL 19



One direction no-passing pattern with pavement markers for use on two-lane streets and highways. See Notes 1 and 2.

DETAIL 20



Alternate to Detail 19. For use with Detail 7.

NOT TO SCALE

NOTES: 1. Pavement markers shown off the solid line in Details 16 and 19 may be placed on the line.
2. If the material used for centerline marking is paint, a 3 in black line shall be placed between the yellow lines on State highways and may be placed on streets and highways under local jurisdiction.

LEGEND

4 to 6 in Yellow (for local agencies)
6 in Yellow (on State Highway System)

Two-Way Yellow Retroreflective Markers

Non-Retroreflective Yellow Markers

Direction of Travel

One-Way Yellow Retroreflective Markers

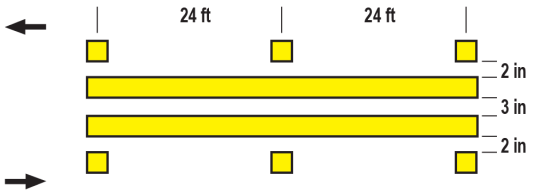
Figure 3A-104 (CA). No Passing Zones - Two Direction

DETAIL 21

POLICY

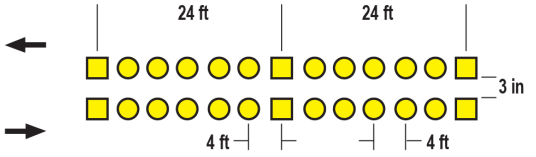
Two-direction no-passing pattern for use on two-lane streets and highways (normally used on local streets and highways). See Note 2.

DETAIL 22



Two-direction no-passing pattern with pavement markers for use on two-lane streets and highways. See Notes 1 and 2.

DETAIL 23



Alternate to Detail 22. For use with either Detail 4 or Detail 7.

NOT TO SCALE

NOTES:
1. Pavement markers shown off the solid line in Detail 22 may be placed on the line.
2. If the material used for centerline marking is paint, a 3 in black line shall be placed between the yellow lines on State highways and may be placed on streets and highways under local jurisdiction.

LEGEND

4 to 6 in Yellow (for local agencies)
6 in Yellow (on State Highway System)

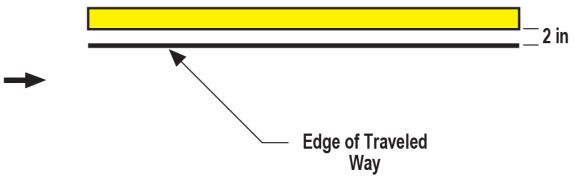
Two-Way Yellow Retroreflective Markers

Non-Retroreflective Yellow Markers

Direction of Travel

Figure 3A-105 (CA). Left Edge Lines for Divided Highways

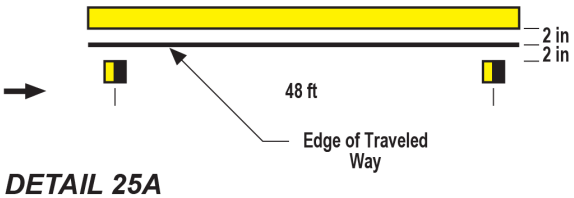
DETAIL 24



POLICY

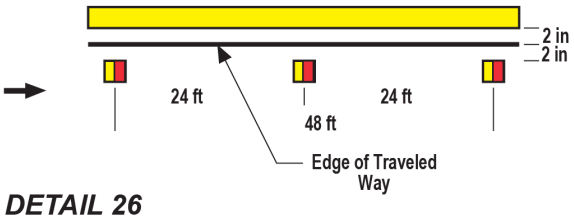
Left Edge Line pattern for use on streets and highways (normally used on local streets and highways).

DETAIL 25



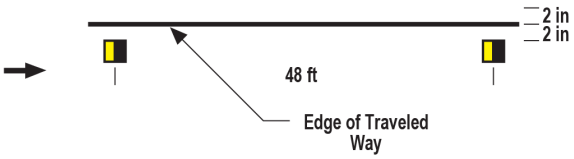
Left Edge Line for use on State highways.

DETAIL 25A



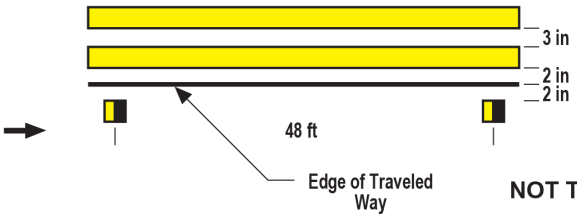
Left Edge Line for use on highways, freeways, freeway ramps and connectors.

DETAIL 26



Alternate to Details 24 and 25 when there is adequate contrast between travelled way and shoulder.

DETAIL 27



Alternate to Detail 25. A double solid yellow line may be used for more emphasis when motorists tend to use the shoulder for a through lane, or where encroachments onto the shoulder occasionally occur. See Note 1.

NOT TO SCALE

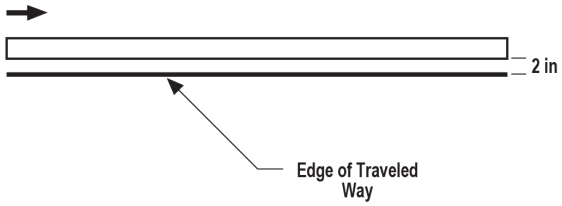
NOTE: 1. If the material used for centerline marking is paint, a 3 in black line shall be placed between the yellow lines on State highways and may be placed on streets and highways under local jurisdiction.

LEGEND

- 4 to 6 in Yellow (for local agencies)
  6 in Yellow (on State Highway System)
- One-Way Yellow Retroreflective Markers
- Red- Yellow Retroreflective Markers
- Direction of Travel

Figure 3A-106 (CA). Right Edge Line and Right Edge Line Extension Through Intersections

DETAIL 27B
Right Edge Line



POLICY

Right Edge Line pattern for use on all State highways may be used on local streets and highways. It is generally dropped at the beginning of the intersection flares on conventional highways. See also Detail 27C. On freeways, it may be flared in advance of the exit ramp as shown in Figure 3B-8 (CA).

DETAIL 27C
Right Edge Line Extension Through Intersections

Right Edge Line Extension Through Intersections pattern for use to extend the right edgeline through an intersection where climatic conditions, such as areas of heavy fog, may require additional guidance.

NOT TO SCALE

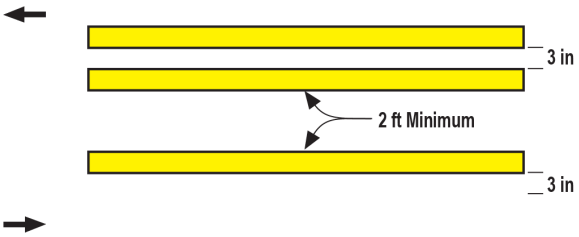
LEGEND

4 to 6 in White (for local agencies)
6 in White (on State Highway System)

Direction of Travel

Figure 3A-107 (CA). Median Islands

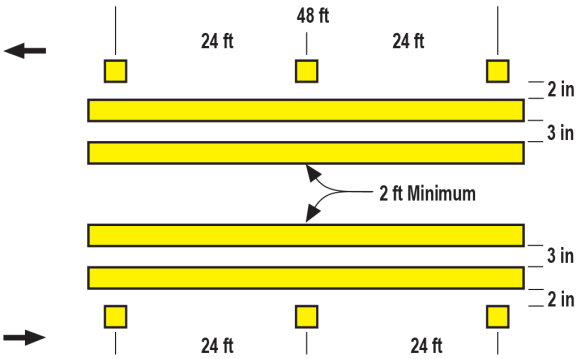
DETAIL 28



POLICY

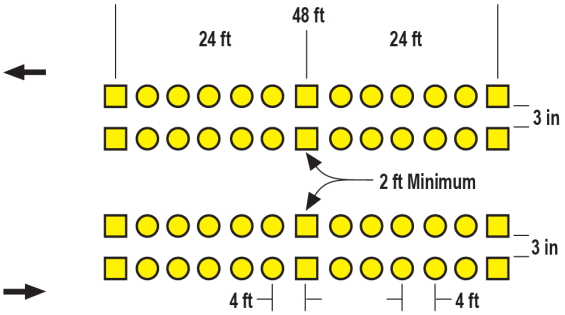
Double Left Edge Line pattern for use on all-paved sections of streets and highways (normally used on local streets and highways). See Note 2.

DETAIL 29



Double Left Edge Line pattern with pavement markers for use on all-paved sections of streets and highways. See Notes 1 and 2.

DETAIL 30



Alternate to Detail 29. For use at problem locations where it is difficult to place and maintain lines because of moisture, sand, etc.

NOT TO SCALE

NOTES: 1. Pavement markers shown off the solid line in Detail 29 may be placed on the line.
2. If the material used for centerline marking is paint, a 3 in black line shall be placed between the yellow lines on State highways and may be placed on streets and highways under local jurisdiction.

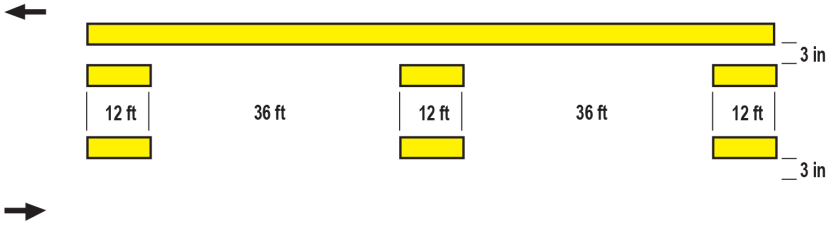
LEGEND

- 4 to 6 in Yellow (for local agencies) 6 in Yellow (on State Highway System)
- Two-Way Yellow Retroreflective Markers
- Non-Retroreflective Yellow Markers
- Direction of Travel

Figure 3A-108 (CA). Two-Way Left-Turn Lanes

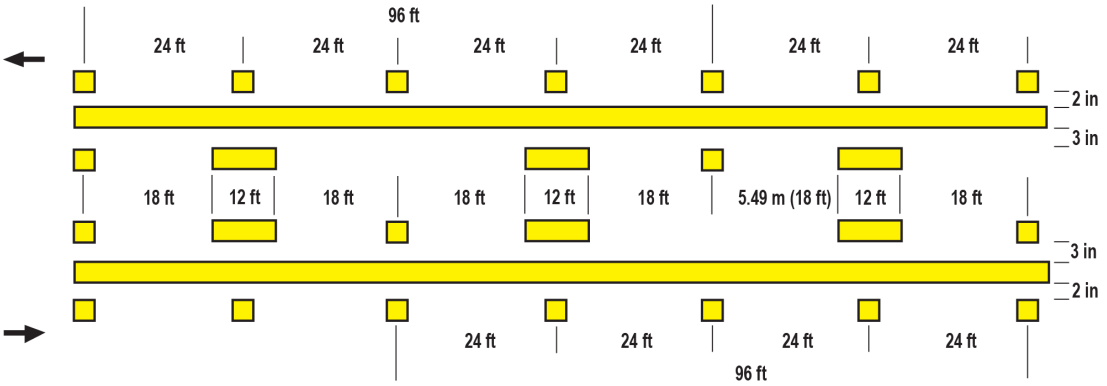
DETAIL 31 **POLICY**

Two-way left-turn lane pattern for use on streets and highways (normally used on local streets and highways). See Note 2.



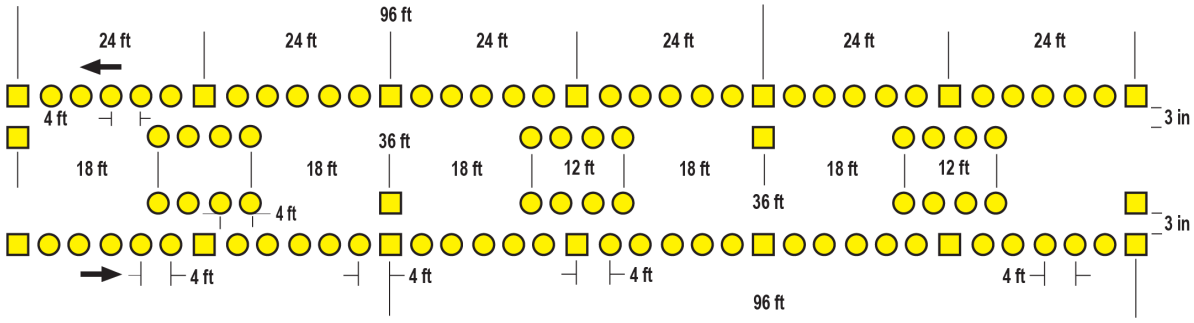
DETAIL 32 **POLICY**

Two-way left-turn lane pattern for use on streets and highways. See Note 2.



DETAIL 33 **POLICY**

Two-way left-turn lane pattern for use on streets and highways.



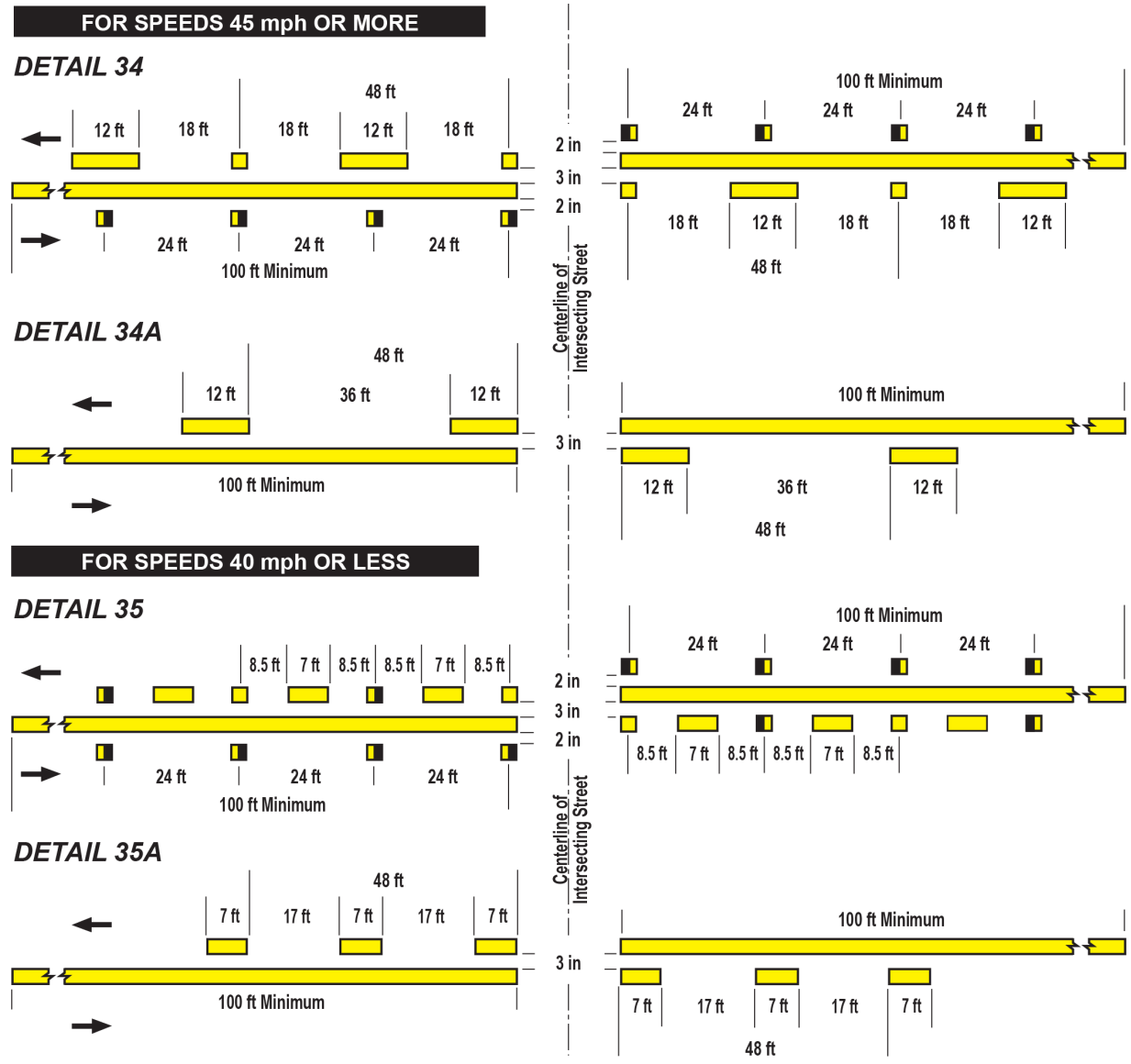
NOT TO SCALE

NOTES:
1. Pavement markers shown off the solid line in Detail 32 may be placed on the line.
2. If the material used for centerline marking is paint, a 3 in black line shall be placed between the yellow lines on State highways and may be placed on streets and highways under local jurisdiction.

LEGEND

- 4 to 6 in Yellow (for local agencies) / 6 in Yellow (on State Highway System)
- Two-Way Yellow Retroreflective Markers
- Non-Retroreflective Yellow Markers
- Direction of Travel

Figure 3A-109 (CA). Intersection Markings



NOT TO SCALE

NOTES:
1. Raised Pavement Markers are optional on non-state highways.
2. Raised Pavement Markers shown off the solid line may be placed on the line.
3. If the material used for centerline marking is paint, a 3 in black line shall be placed between the yellow lines on State highways and may be placed on streets and highways under local jurisdiction.

LEGEND

4 to 6 in Yellow (for local agencies)
6 in Yellow (on State Highway System)

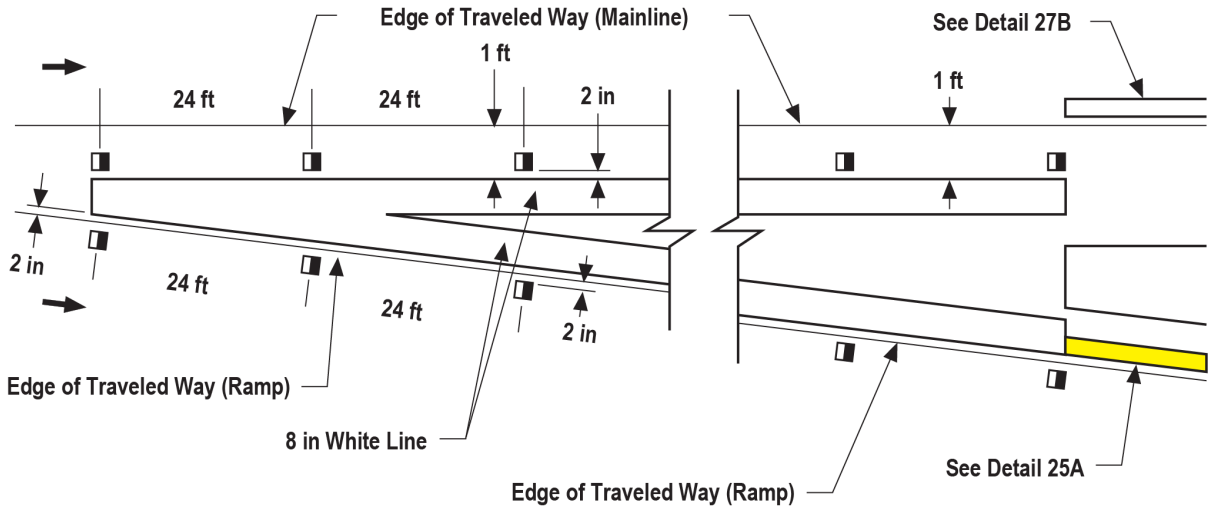
Two-Way Yellow Retroreflective Markers

One-Way Yellow Retroreflective Markers

Direction of Travel

Figure 3A-110 (CA). Freeway Exit and Entrance Ramp Channelizing Line (Sheet 1 of 2)

DETAIL 36 - Exit Ramp Neutral Area (Gore) Channelizing Lines (See Figure 3B-8 (CA), Sheet 2 of 2)



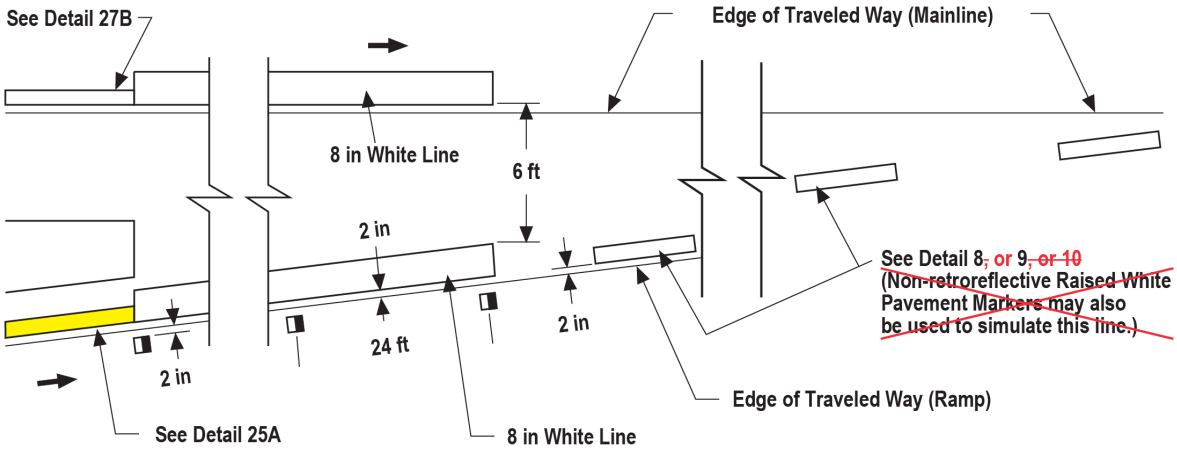
NOT TO SCALE

LEGEND

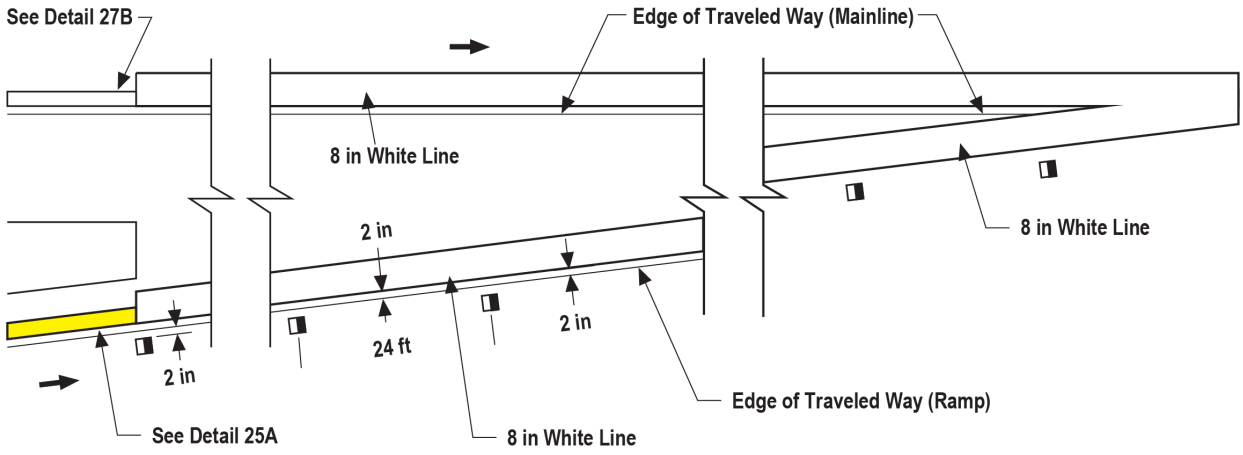
- 4 to 6 in White (for local agencies)
  6 in White (on State Highway System)
- 4 to 6 in Yellow (for local agencies)
  6 in Yellow (on State Highway System)
- One-Way Clear Retroreflective Markers
- Direction of Travel

Figure 3A-110 (CA). Freeway Exit and Entrance Ramp Channelizing Lines (Sheet 2 of 2)

DETAIL 36A - Entrance Ramp Neutral Area (Merge) Channelizing Lines (See Figure 3B-9 (CA), Sheet 1 of 2)



DETAIL 36B - Entrance Ramp Neutral Area (Acceleration Lane) Channelizing Lines (See Figure 3B-8 (CA), Sheet 3 of 3)



NOT TO SCALE

LEGEND

4 to 6 in White (for local agencies)
6 in White (on State Highway System)

4 to 6 in Yellow (for local agencies)
6 in Yellow (on State Highway System)

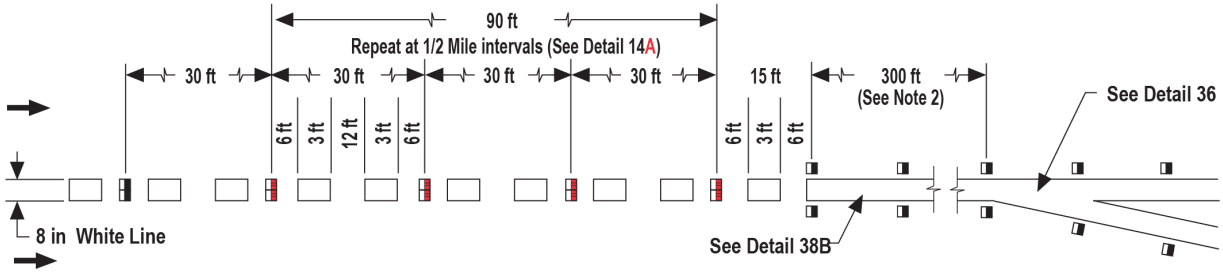
One-Way Clear Retroreflective Markers

Direction of Travel

Figure 3A-111 (CA). Lane Drop Markings

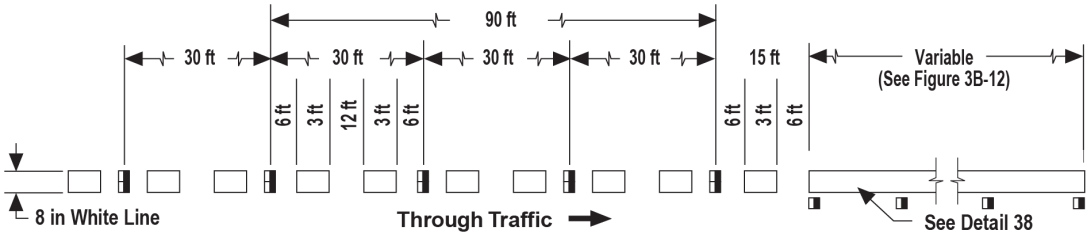
DETAIL 37 - Lane Drop Markings at Exit Ramps

Marking pattern for use on mandatory lane drops at freeway exit ramps and freeway to freeway connectors.



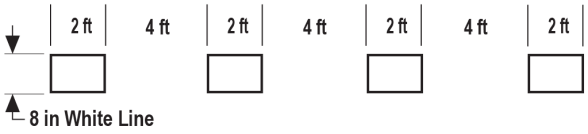
DETAIL 37B - Lane Drop Markings at Conventional Highway Intersections

Marking pattern for use on mandatory turn lanes at intersections. Pavement markers shown are optional on local streets and highways.



DETAIL 37D - Lane Drop Line For Two-Lane Roundabouts

For use on mandatory exiting lanes from two-lane roundabouts.



NOT TO SCALE

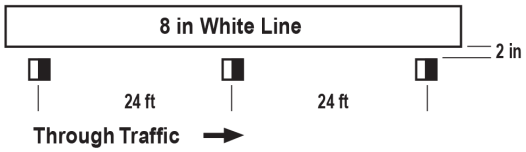
NOTES:
1. **Pavement markers shown off the solid line in Detail 37 may be placed on the line.**
2. **The Solid Channelizing Line shown in Detail 37 and 37A may be omitted on short auxilary lanes where weaving length is critical.**

LEGEND

- **Non-Retroreflective White Markers**
- **Direction of Travel**
- **One-Way Clear Retroreflective Markers**
- **Red-Clear Retroreflective Markers**

Figure 3A-112 (CA). Channelizing Line and Lane Line/Centerline Extensions

DETAIL 38 - Channelizing Line



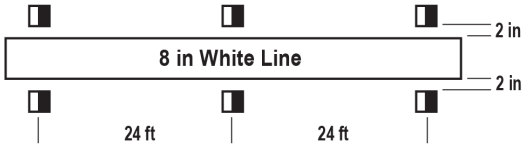
POLICY

Typical channelizing line for use on Left-Turn or Right-Turn lanes on State highways. Pavement Markers when used should be place on the through traffic side only.

DETAIL 38A - Channelizing Line

Typical channelizing line for use on Left-Turn or Right-Turn lanes on local streets and highways and freeway off-ramp terminals.

DETAIL 38B - Channelizing Line at Exit Ramps

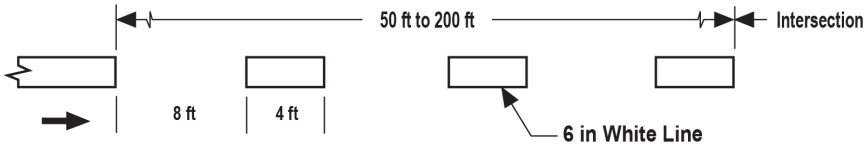


Typical channelizing line for use on Exit Ramps. Pavement Markers as shown may also be placed on the line.

DETAIL 38C - Alternate to Detail 38 and 38B

DETAIL 39 - Bike Lane Line

DETAIL 39A - Bike Lane Intersection Line



DETAIL 40 - Lane Line Extension Through Intersections

The Lane Line Extension Through Intersections line is used to extend the lane line through an intersection that might otherwise be confusing to the motorist.

DETAIL 40A - Alternate to Detail 40

DETAIL 41 - Centerline Extension Through Intersections

The Centerine Extension Through Intersections line is used to extend the centerline through an intersection that might otherwise be confusing to the motorist.

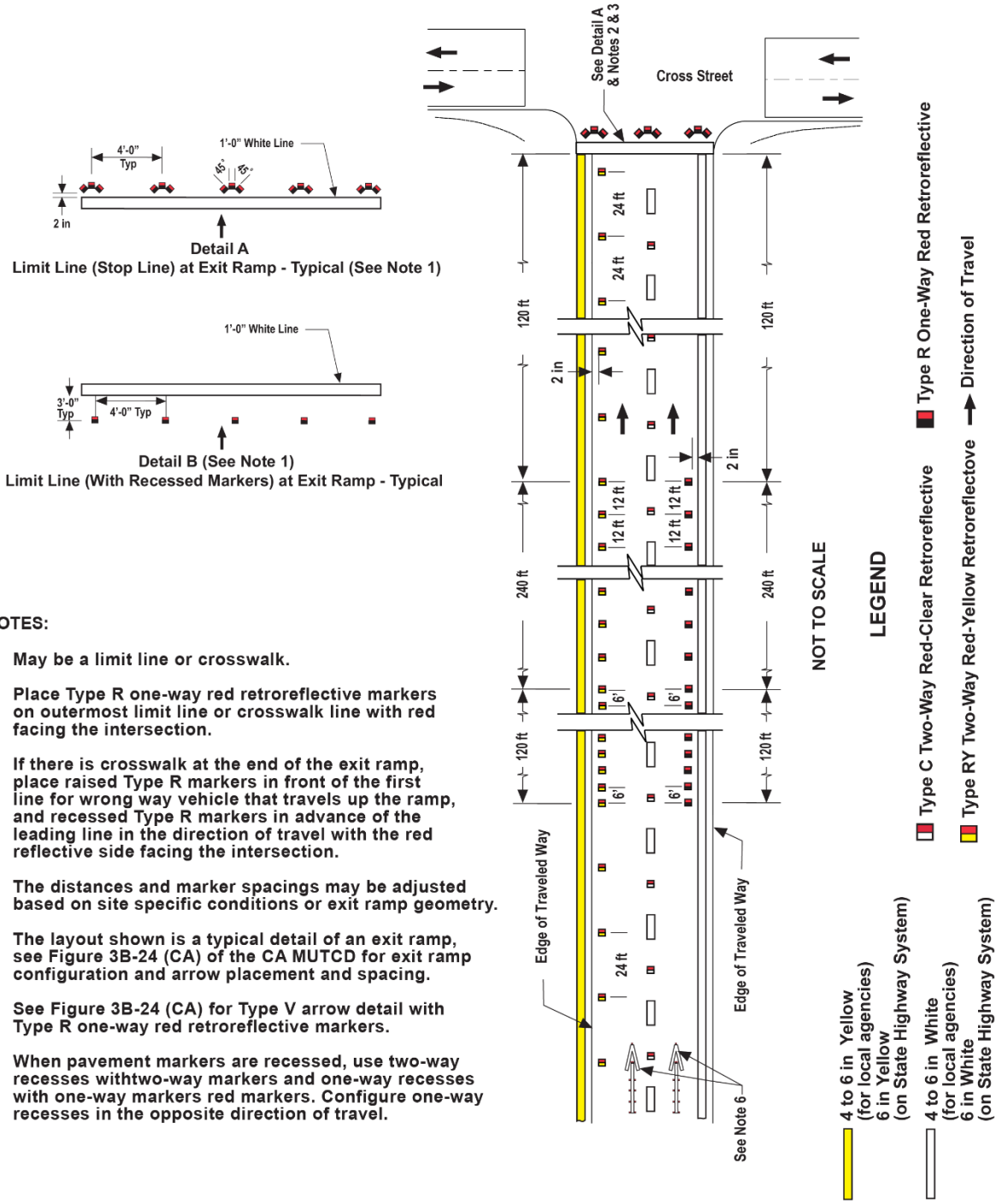
DETAIL 41A - Alternate to Detail 41

NOT TO SCALE

LEGEND

White Line
Yellow Line
Non-Retroreflective White Markers
Non-Retroreflective Yellow Markers
Direction of Travel
One-Way Clear Retroreflective Markers

Figure 3A-114 (CA). Exit Ramp with Enhanced Pavement Markers for Wrong Way Details

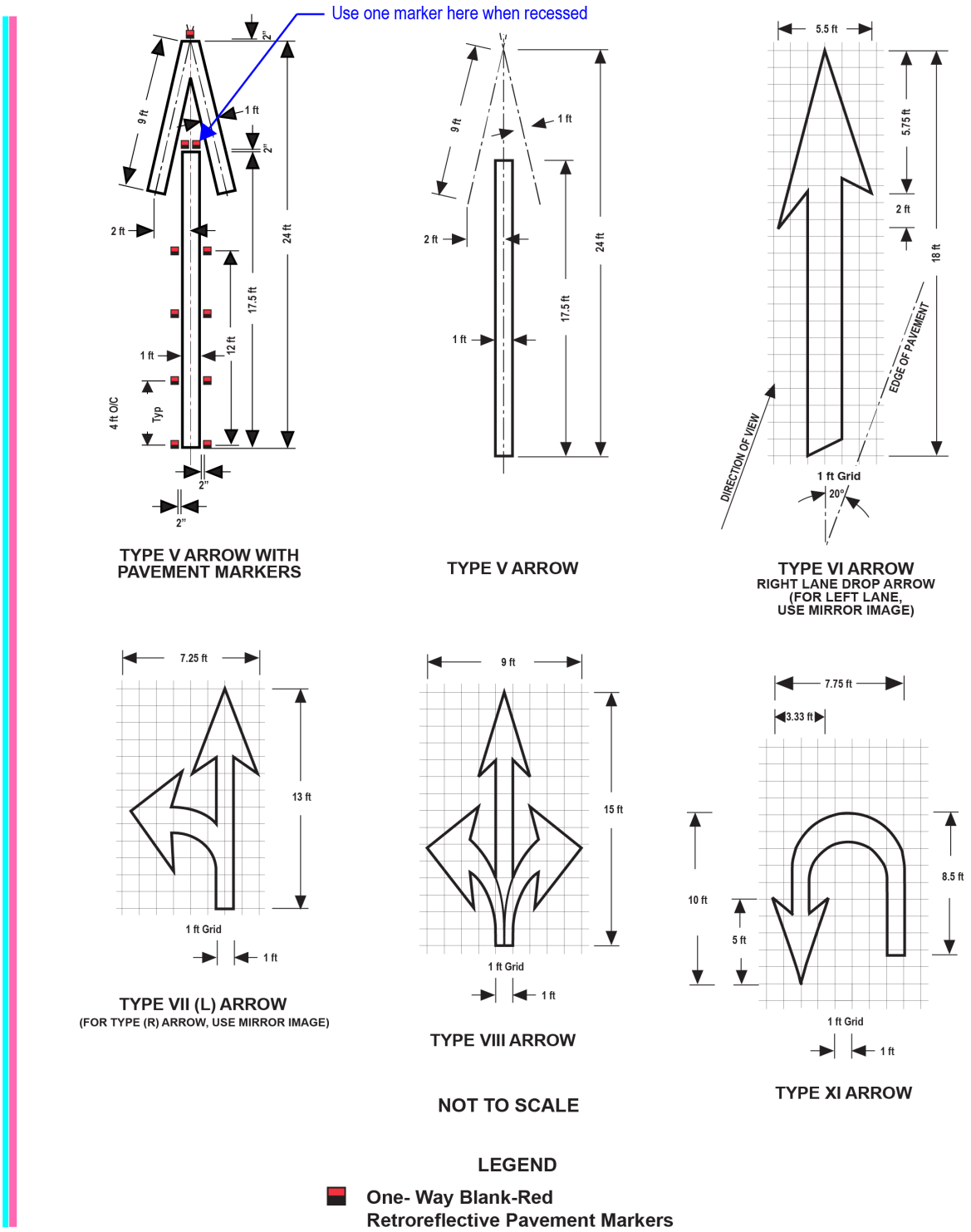


NOTES:

1. May be a limit line or crosswalk.
2. Place Type R one-way red retroreflective markers on outermost limit line or crosswalk line with red facing the intersection.
3. If there is crosswalk at the end of the exit ramp, place raised Type R markers in front of the first line for wrong way vehicle that travels up the ramp, and recessed Type R markers in advance of the leading line in the direction of travel with the red reflective side facing the intersection.
4. The distances and marker spacings may be adjusted based on site specific conditions or exit ramp geometry.
5. The layout shown is a typical detail of an exit ramp, see Figure 3B-24 (CA) of the CA MUTCD for exit ramp configuration and arrow placement and spacing.
6. See Figure 3B-24 (CA) for Type V arrow detail with Type R one-way red retroreflective markers.
7. When pavement markers are recessed, use two-way recesses withtwo-way markers and one-way recesses with one-way markers red markers. Configure one-way recesses in the opposite direction of travel.

- Chapter 3B Pavement and Curb Markings. Figure 3B.24(CA) is updated.

Figure 3B-24 (CA). Examples of Standard Arrows for Pavement Markings (Sheet 2 of 8)



NOTE: The design details for various arrows are also shown in Department of Transportation's Standard Plans.

- Section 4D.27 Preemption and Priority Control of Traffic Control Signals. Yellow highlight text is edited in Section 4D.27.

Section 4D.27 Preemption and Priority Control of Traffic Control Signals

…

Railroad Preemption

Support:

28 Railroad preemption results in a special traffic signal operation depending on the relation of the railroad tracks to the intersection, the number of phases in the traffic signal and other traffic conditions. Railroad preemption is normally initiated by a notification from the railroad grade crossing warning equipment.

Guidance:

29 *Typical circumstances where railroad preemption is required, the following type of signal operation should be provided during preemption:*

1. *Where a railroad grade crossing, provided with grade crossing warning equipment, is within 200 feet of a signalized intersection, preemption of the traffic signal should provide the following sequence of operation:*

Standard:

a. A yellow change interval and any required red clearance interval for any signal phase that is green or yellow when preemption is initiated and which will be red during the track clearance interval. The length of yellow change and red clearance intervals shall not be altered by preemption. Phases, which are in the green interval when preemption is initiated, and which will be green during the track clearance interval, shall remain green. Any pedestrian walk or clearance interval, in effect when preemption is initiated, shall immediately be terminated and all pedestrian signal faces shall display steady UPRAISED HAND.

b. A track clearance interval for the signal phase or phases controlling the approach that crosses the railroad tracks.

Option:

29a Pedestrian walk or clearance intervals may be used during preemption if such intervals are implemented as components of the Right-of-Way Transfer time. The signal indication for the clearance interval may be either green or flashing red.

Guidance:

c. A yellow change interval if green signal indications were provided during the track clearance interval.

d. Depending on traffic requirements and phasing of the traffic signal controller, the traffic signal may then do one of the following:

(1) Go into flashing operation, with flashing red or flashing yellow indications for the approaches parallel to the railroad tracks and flashing red indications for all other approaches.

Standard:

Pedestrian signals shall be extinguished. If flashing red is used for all approaches, an all-red or other clearance interval shall be provided prior to returning to normal operation.

(2) Revert to limited operation with those signal indications controlling through and left turn approaches towards the railroad tracks displaying steady red. Permitted pedestrian signal phases shall operate normally. This operation shall be used only if the grade crossing warning equipment includes gates.

e. The traffic signal shall return to normal operation following release of preemption control.

Guidance:

2. *Where the railroad tracks run within a roadway and train speeds exceed 10 mph, preemption of the traffic signal should provide the following sequence of operation.*

a. A yellow change interval and any required red clearance interval for all signal phases that are green or yellow when preemption is initiated and which will be red during the preemption period.

Standard:

The length of yellow change and red clearance intervals shall not be altered by preemption. Phases, which are in the green interval when preemption is initiated, and which will be green during the preemption period, shall remain green. Any walk or pedestrian clearance intervals in effect when preemption is initiated shall be immediately terminated and all pedestrian signal faces shall display UPRAISED HAND.

b. All signal faces controlling traffic movements parallel to the railroad tracks will display green or flashing yellow indications. All other vehicle signal faces will display steady red indications; pedestrian signal faces will display UPRAISED HAND.

Option:

29b Pedestrian walk or clearance intervals may be used during preemption if such intervals are implemented as components of the Right-of-Way Transfer Time.

3. Where the railroad tracks run along a roadway of a signalized intersection and train speeds do not exceed 10 mph, trains may be controlled by the vehicle signal indications. This type of train control requires approval from the railroad, the Public Utilities Commission and the Director of Transportation.
4. Unusual or unique track or roadway configurations may require other solutions than those described above.

- Chapter 6F: Temporary Traffic Control Zone Devices. Yellow highlight text is edited in Section 6F.64 Cones and Section 6F.65 Tubular Markers. Figure 6F-7 is also updated.

Section 6F.64 Cones

Standard:

01 **Cones (see Figure 6F-7) shall be predominantly orange and shall be made of a material that can be struck without causing damage to the impacting vehicle. For daytime and low-speed roadways, cones shall be not less than 18 inches in height. When cones are used on freeways and other high-speed highways or at night on all highways, or when more conspicuous guidance is needed, cones shall be a minimum of 28 inches in height.**

02 **For nighttime use, cones shall be retroreflectorized or equipped with lighting devices for maximum visibility. Retroreflectorization of cones that are 28 to 36 inches in height shall be provided by a 6-inch wide white band located 3 to 4 inches from the top of the cone and an additional 4-inch wide white band**

located approximately 2 inches below the 6-inch band or alternating orange and white retroreflective stripes that are 4 to 6 inches wide. Each cone provided with alternating orange and white stripes shall have a minimum of two orange and two white stripes with the top stripe being orange.

03 **Retroreflectorization of cones that are more than 36 inches in height shall be provided by horizontal, circumferential, alternating orange and white retroreflective stripes that are 4 to 6 inches wide. Each cone shall have a minimum of two orange and two white stripes with the top stripe being orange. Any non-retroreflective spaces between the orange and white stripes shall not exceed 3 inches in width.**

Option:

03a Additional white colored retroreflectorization may be added to the top and/or bottom sides of the base of cones (not part of the conical shape) to enhance visibility.

Support:

03b The 36 inch and 42 inch high cones provide additional conspicuity in visually complex environments and for older road users.

Section 6F.65 Tubular Markers

…

Portable Delineator

Standard:

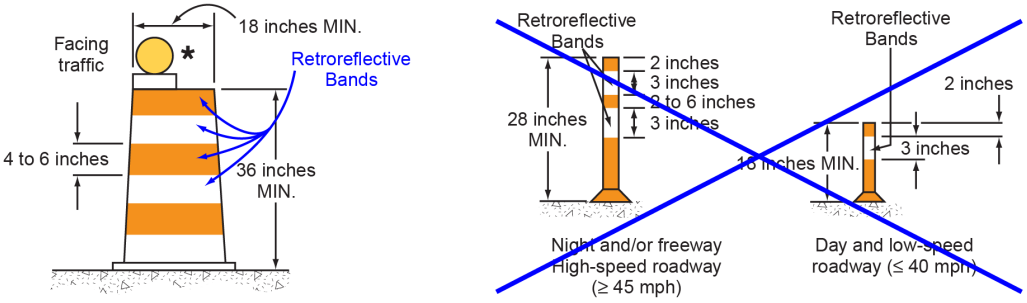
08 **The design of a portable delineator shall be as shown in Figure 6F-102(CA).**

09 **Portable delineators shall be a minimum of 36 inches in height. The vertical portion of portable delineators shall be fluorescent orange or predominantly orange. The posts shall be not less than 3 inches in width or diameter. Retroreflectorization of portable delineators that have a height of less than 42 inches shall be provided by two 3-inch wide white bands placed a maximum of 2 inches from the top with a maximum of 6 inches between the bands. Retroreflectorization of portable delineators that have a height of 42 inches or more shall be provided by four 4-inch to 6-inch wide alternating orange and white stripes with the top stripe being orange.**

Option:

09a Additional white colored retroreflectorization may be added to the top and/or bottom sides of the portable delineator base to enhance visibility.

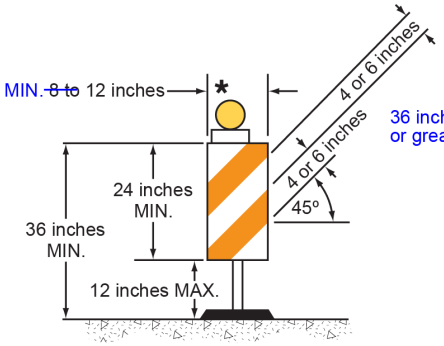
Figure 6F-7. Channelizing Devices



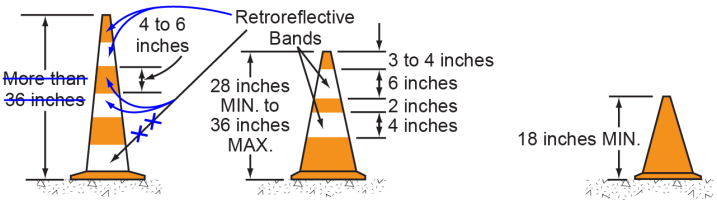
DRUM

TUBULAR MARKERS

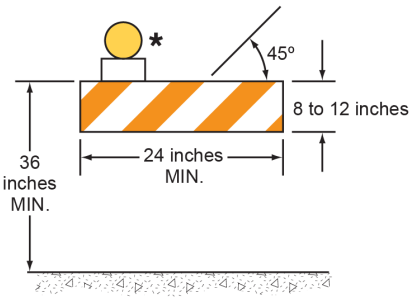
See Figure 6F-102(CA)



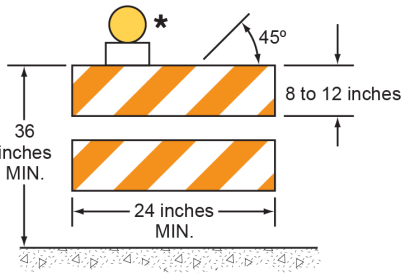
VERTICAL PANEL



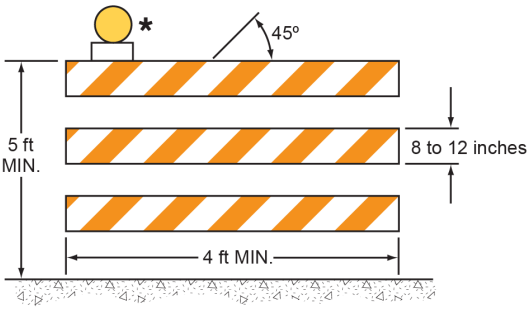
CONES



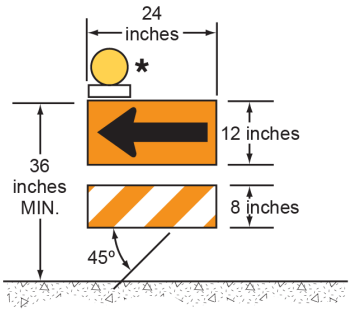
TYPE 1 BARRICADE **



TYPE 2 BARRICADE **



TYPE 3 BARRICADE **



DIRECTION INDICATOR BARRICADE **

* Warning lights (optional)

** Rail stripe widths shall be 6 inches, except that 4-inch wide stripes may be used if rail lengths are less than 36 inches. The sides of barricades facing traffic shall have retroreflective rail faces.

- Section 6G.13 Work Within the Traveled Way at an Intersection. Yellow highlight text is edited in Section 6G.13.

Section 6G.13 Work Within the Traveled Way at an Intersection

…

Option:

15 If the work is within the intersection, any of the following strategies may be used:

A. A small work space so that road users can move around it, as shown in Figure 6H-26;

B. Flaggers or uniformed law enforcement officers to direct road users, as shown in Figure 6H-27 and Figure 6H-106(CA);

C. Work in stages so the work space is kept to a minimum; and

D. Road closures or upstream diversions to reduce road user volumes.

Guidance:

16 *Depending on road user conditions, a flagger(s) and/or a uniformed law enforcement officer(s) should be used to control road users.*

Support:

17 Work at a roundabout can present a challenge for developing an effective TTC plan. Figures 6H-106(CA) and 6H-107(CA) provide guidance on applicable procedures for work performed within a roundabout.

- Chapter 6H: Typical Applications. Table 6H-1(CA) is updated. New Figure 6H-106(CA) and Figure 6H-107(CA) are also added.

Table 6H-1(CA). Index to Typical Applications

Typical Application Description	Typical Application Number
Work affecting Pedestrian and Bicycle Facilities (see Section 6G.05)	
Shoulder Closure on Urban (Low Speed) Locations to Accommodate Bicyclists	TA-101(CA)
Lane Closure on Freeway, Expressway, Rural and Urban (High Speed) Locations to Accommodate Bicyclists	TA-102(CA)
Detour for Bike Lane on Roads with Closure of One Travel Direction	TA-103(CA)
Right Lane and Bike Lane Closure on Far Side of Intersection	TA-104(CA)
Work Within the Traveled Way of a Two-Lane Highway (see Section 6G.10)	
Lane Shift on Road with Low Traffic Volumes	TA-105(CA)
Work Within the Traveled Way of a Roundabout (see Section 6G.13)	
Partial Closure in a Single-Lane Roundabout	TA-106(CA)
Inside Lane Closure on a Multi-Lane Roundabout	TA-107(CA)

Notes for Figure 6H-106CA) – Typical Application 106(CA)
Partial Closure in a Single Lane Roundabout

Option:

1. Flashing warning lights and/or flags may be used to call attention to the advance warning sign. A BE PREPARED TO STOP (W3-4) sign may be added to the sign series.
2. If closure continues overnight, warning lights may be used on the channelizing devices.

Standard:

3. **Where a quadrant of the roundabout is closed as shown in Figure 6H-106(CA), only one direction of the approach traffic shall be released at a time.**
4. **At night, flagger stations shall be illuminated, except in emergencies.**
5. **WRONG WAY (R5-1a) signs shall be covered.**

Guidance:

6. *When used, the BE PREPARED TO STOP (W3-4) sign should be located between the California Flagger symbol (C9A(CA)) sign and the ONE LANE ROAD (W20-4) sign.*
7. *YIELD (R1-2), ONE WAY (R6-1 and R6-2), and Roundabout Directional Arrow (R6-4, R6-4a, and R6-4b) signs should be covered or removed.*
8. *Confusing or misleading guide or lane-use control signs should be covered.*

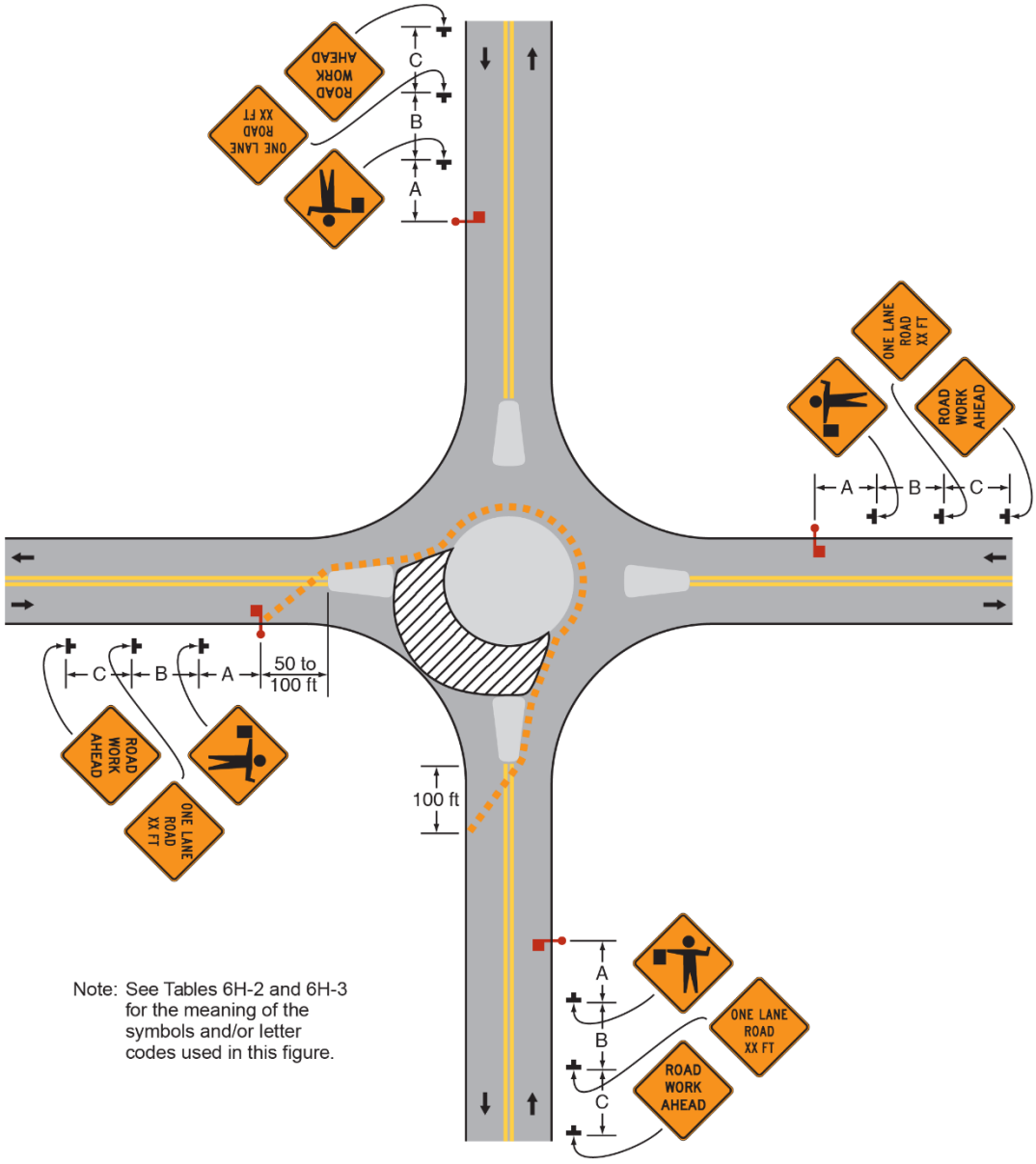
Option:

9. Crosswalks may be closed.
10. As an alternative to closing crosswalks, warning signs may be added informing pedestrians that there is traffic coming from the left.

Guidance:

11. *Since the geometrics of the roundabout will be temporarily altered, consideration should be given to establishing a truck detour for the duration of the project.*
12. *For intermediate or long-term work, the roundabout should be closed and traffic detoured, with appropriate detour signing provided.*

Figure 6H-106 (CA). Partial Closure in a Single Lane Roundabout ((TA-106(CA))



Typical Application 106 (CA)

Notes for Figure 6H-107CA) – Typical Application 107(CA)
Inside Lane Closure on a Multi-Lane Roundabout

Standard:

1. **When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility. See Figure 6H-28, Crosswalk Closures and Pedestrians Detours (TA-28).**

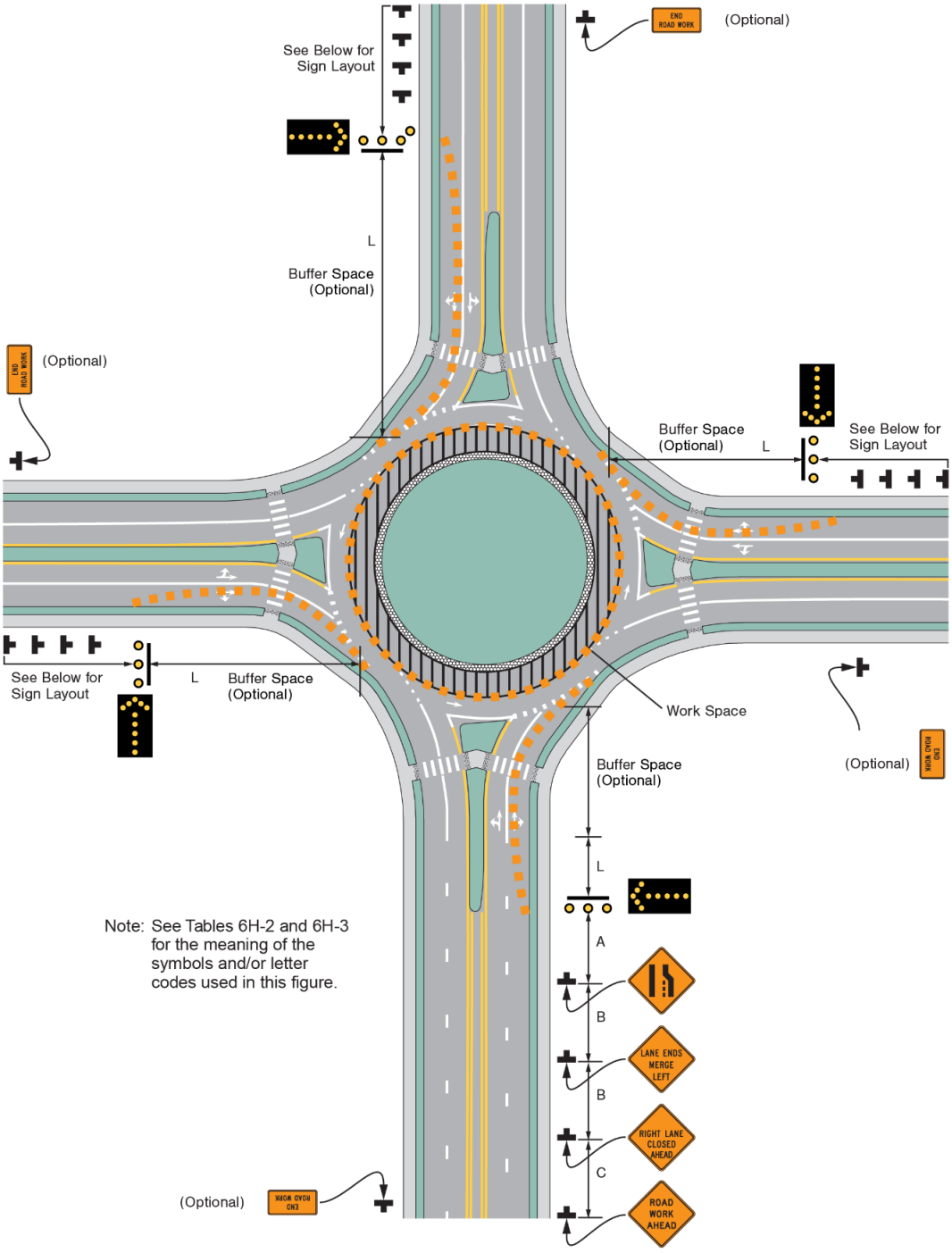
Guidance:

2. *Care should be exercised when establishing the limits of the work zone to sight distance in advance of the transition.*
3. *When designing the temporary traffic control and installing the channelizing devices for work activities at roundabouts, accommodations for the turning radius of wider heavy commercial vehicles should be considered.*
4. *Since geometrics of the roundabout will temporarily be altered, consideration should be given to establishing a truck detour for the duration of the project.*
5. *For intermediate or long-term work, the roundabout should be closed if traffic cannot be accommodated, and traffic detoured with appropriate detour signing provided. See Figure 6H-8, Road Closure with an Off-Site Detour (TA-8).*
6. *Conflicting pavement markings should be removed for long-term projects. For short-term and intermediate-term projects where this is not practical, the channelizing devices in the area where the pavement markings conflict should be placed at a maximum spacing of ½ S feet, where S is the speed in mph. Temporary markings should be installed where needed.*

Option:

7. A portable changeable message sign may be utilized as part of the temporary traffic control plan to provide clear guidance to motorists on all approaches of the roundabout.
8. On a multi-lane approach, either lane may be closed.

Figure 6H-107. (CA) - Inside Lane Closure on a Multi-Lane Roundabout ((TA 107(CA))



Typical Application 107 (CA)

EDITORIAL CHANGES

- Chapter 2B: Regulatory Signs, Barricades, and Gates. Table 2B-1(CA) is edited (editorial change).

Table 2B-1(CA). California Regulatory Sign and Plaque Sizes (Sheet 1 of 7)

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
Speed Zone Ahead	R2-4(CA)	2B.13	24 x 30	24 x 30	36 x 45	48 x 60	24 x 30	---
End Speed Limit	R3(CA)	2B.13	24 x 30	24 x 30	36 x 45	48 x 60	24 x 30	---
TRUCKS, 3 AXLES OR MORE 55 MAXIMUM	R6-3(CA)	2B.13	48 x 60	48 x 60	48 x 60	48 x 60	---	---
TRUCKS 3 AXLES OR MORE RIGHT 2 LANES ONLY	R6-3A(CA)	2B.13	54 x 66	54 x 66	54 x 66	54 x 66	---	---
ALL VEHICLES WHEN TOWING 55 MAXIMUM	R6-4(CA)	2B.13	48 x 60	48 x 60	48 x 60	48 x 60	---	---
ALL VEHICLES WHEN TOWING RIGHT 2 LANES ONLY	R6-4A(CA)	2B.31	54 x 66	54 x 66	54 x 66	54 x 66	---	---
Pedestrian Signs	R10-3e(CA) R10-3i(CA)	2B.52	9 x 15	9 x 15	---	---	---	---
Pedestrian Sign	R10-3j(CA)	2B.52	9 x 12	9 x 12	---	---	---	---
No Right Turn on Red	R13A(CA)	2B.54	18 x 30	24 x 36	30x 48	30x 48	18 x 30	---
No Left Turn on Red	R13B(CA)	2B.54	18 x 30	24 x 36	30x 48	30x 48	18 x 30	---
RIGHT (LEFT) LANE MUST EXIT	R18A(CA)	2B.20	---	---	66 x48	66 x48	---	---
RIGHT (LEFT) LANE FREEWAY ONLY	R18B(CA)	2B.20	36 x 36	36 x 36	---	---	---	---
No Trucks Variable Message	R20-1(CA)	2B.39	---	---	102 x 48	102 x 48	---	---
NEXT RIGHT plaque	R20-1A(CA)	2B.39	---	---	102 x 18	102 x 18	---	---
Weight Limit	R20A(CA)	2B.59	30 x 30	30 x 30	36 x 40	---	---	---
Truck Exclusion plaque	R20D-1(CA)	2B.59	24 x 6	30 x 9	36 x 12	---	24 x 6	---
Truck Exclusion plaque	R20D-2(CA)	2B.59	24 x 6	30 x 9	36 x 12	---	24 x 6	---
Truck Exclusion plaque	R20D-3(CA)	2B.59	24 x 6	30 x 9	36 x 12	---	24 x 6	---
Truck Exclusion plaque	R20D-4(CA)	2B.59	24 x 6	30 x 9	36 x 12	---	24 x 6	---
Truck Length Limit	R20H(CA)	2B.39	36 x 36	36 x 36	42 x 42	---	36 x 36	---
Bridge Speed and Weight Limit	R21(CA)	2B.39	36 x 30	36 x 30	---	---	---	---
OK TO PARK ON BRIDGE	R22(CA)	2B.46	12 x 18	12 x 18	---	---	---	---
NO FISHING (JUMPING) FROM BRIDGE	R23(CA)	2B.101	26 x 18	26 x 18	---	---	---	---
PARK PARALLEL	R24(CA)	2B.46	12 x 18	12 x 18	---	---	---	---
SCHOOL BUS ONLY w/Double Arrow	R24A(CA)	2B.46	12 x 18	12 x 18	---	---	---	---
TAXI CAB ONLY w/Double Arrow	R24B(CA)	2B.46	12 x 18	12 x 18	---	---	---	---
TOUR BUS ONLY w/ Double Arrow	R24C(CA)	2B.46	12 x 18	12 x 18	---	---	---	---
MAIL DEPOSIT ONLY w/ Double Arrow	R24D(CA)	2B.46	12 x 18	12 x 18	---	---	---	---
BLOCK WHEELS TO CURB	R24E(CA)	2B.46	12 x 18	12 x 18	---	---	---	---
BACK-IN ANGLE PARKING ONLY	R24F(CA)	2B.46	12 x 18	12 x 18	---	---	---	---
PARK OFF PAVEMENT	R25(CA)	2B.46	24 x 15	24 x 15	---	---	---	---
LOADING ONLY 7AM TO 6PM EXCEPT SUNDAY 30 MINUTE LIMIT w/ Double Arrow	R25A(CA)	2B.46	12 x 18	12 x 18	---	---	---	---
Passenger Loading ONLY 5 MINUTE LIMIT w/ Double Arrow	R25B(CA)	2B.46	18 x 18	18 x 18	---	---	---	---
PASSENGER LOADING ONLY 5 MINUTE LIMIT w/ Double Arrow	R25C(CA)	2B.46	18 x 18	18 x 18	---	---	---	---
School Passenger Loading ONLY 7AM TO 4PM SCHOOL DAYS 5 MINUTE LIMIT w/ Double Arrow	R25D(CA)	2B.46	18 x 21	18 x 21	---	---	---	---
PASSENGER LOADING ONLY 7AM TO 4PM SCHOOL DAYS 5 MINUTE LIMIT w/ Double Arrow	R25E(CA)	2B.46	18 x 21	18 x 21	---	---	---	---

- Chapter 2D: Guide Sign – Conventional Roads. Table 2D-1(CA) and Table 2D-102(CA) are edited (editorial change).

Table 2D-1(CA). California Conventional Road Guide Sign Sizes (Sheet 2 of 2)

Sign or Plaque	Sign Designation	Section	Conventional Road	Minimum	Oversized
Exit Numbered Supplemental Destination	G86-13(CA)	2D.37	VAR x 78	VAR x 78	VAR x 90
Veterans National Cemetery Sign	G86-14(CA)	2D.37	VAR x 66	---	---
Veterans Home of California	G86-16(CA)	2D.37	VAR x 66		
PARK - RIDE	G95A(CA)	2D.48	96 x 42	96 x 42	108 x 48
PARK - RIDE NEXT RIGHT	G95B(CA)	2D.48	96 x 60	96 x 60	108 x 72
Park - Ride Courtesy Plaque	G95B-1(CA)	2D.48	96 x 18	96 x 18	108 x 24
BUS SERVICE Plaque	G95D(CA)	2D.48	96 x 24	96 x 24	108 x 30
Park - Ride Plaque	G95E(CA)	2D.48	96 x 18	96 x 18	120 x 24
Intersection Number	G98(CA)	2D.102(CA)	18 x 12	---	---
NO PICKUPS	SG8(CA)	2D.49	84 x 18	84 x 18	120 x 24
Caltrans Facility Entrance	SG26(CA)	2D.103(CA)	72 x 36	---	---
STATE PROPERTY	S1-1(CA)	2D.103(CA)	21 x 15	---	---
Inventory Marker (Survey)	S2(CA)	2D.101(CA)	3.5 x 12	---	---
NO LOITERING, CAMPING, VENDING OR PARKING OF VEHICLES 30 FEET OR LONGER	S22(CA)	2D.48	48x30	---	---
VEHICLE INSPECTION ONLY, NO LOITERING OR CAMPING	S22-1(CA)	2D.49	48 x 15	---	---
Caltrans CONSTRUCTION FIELD OFFICE	S27(CA)	2D.103(CA)	36 x 24	---	---

Table 2D-102 (CA). Criteria for Supplemental Destination Signs

Type of Destination	Specific Criteria	Major Metropolitan Areas	Urbanized Areas	Rural Areas
Post Secondary School, Public or Private	Minimum Enrollment (Single Campus Locations, See Note 5). Maximum Miles from a Freeway (See Note 6).	1,000 2	1,000 4	1,000 5
Museum, Zoo, Stadium or Sports Arena	Public Owned and Non-Profit. Minimum Annual Attendance. Maximum Miles from Highway (See Note 2).	1,000,000 2	500,000 2	200,000 3
Convention Center	Public Owned and Non-Pofit. Minimum Annual Attendance. Maximum Miles from Highway (See Note 2).	500,000 3	250,000	--
Military Base	Number of Employees and Permanent Garrison. Maximum Miles from Highway.	5,000 2	5,000 4	5,000 7
National Guard Armory	Only Emergency Center in the Area. Easy Access to Primary Evacuation Route. (See Note 2).	--	--	--
Fairgrounds	Publicly Owned and Operated. Temporary Sign Only, Unless There are Year Round Activities. Minimum Annual Attendance. Maximum Miles from Highway (See Note 2).	500,000 2	200,000 4	200,000 5
Federal or State Hospitals, Prisons, National Cemeteries and Veterans Home	Maximum Miles from Highway (See Note 2).	1	3	5
Government Centers	Number of Employees. Maximum Miles from Highway (See Note 2).	5,000 2	2,000 3	1,000 5
California Welcome Centers	Easy Access from Nearest State Highway. (See Notes 2 and 7)	--	--	--
Airports	Maximum Miles from Highway (See Note 2).	1	3	5
Rail and Light Rail Stations	Easy Access from Nearest State Highway. (See Note 2).	--	--	--

NOTES: 1. Meeting the above criteria does not guarantee placement of a sign. Limitations on the spacing between sign and the number of messages permitted, specified in Sections 2A.16, 2D.07 and 2D.40, shall be observed and eligible destinations must compete for signing on the basis of traffic service.

2. Follow-up signing, if necessary, shall be installed by local agencies before signs are placed on the State Highway.

3. If a stadium is located at a school campus for which signs are already provided, separate stadium sign will not be placed.

4. Definitions of Area Classifications:
   A. MAJOR METROPOLITAN AREA - An urbanized area, population density of at least 1,000 inhabitants per 2.6 km^2 (1 mi^2), not necessarily related to county boundaries, with a total population of at least 1,000,000 and an included central city with a population of at least 250,000.
   B. URBANIZED AREA - An urbanized area with a total population of at least 50,000 and an included central city with no minimum population.
   C. RURAL AREA - All areas outside of an urbanized area.

5. Public or private postsecondary eduation institution shall have an enrollment of either 1,000 or more full-time students or an equivalent in part-time students. Refer to CVC Section 21375.

6. No signs to school will be erected until funds from private sources covering the cost of the signs and their installation. If a school, which previously had signs, relocates to contribute to the improvement of the school (as determined by the California Department of Transportation), signs will be erected at the new location at no cost to the school.

7. The California Department of Transportation will charge the Welcome Center directly for the cost of the signs and their installation on the State highway. Cost for sign installation on local roads is the responsibility of the Welcome Center and the local agency.

- Section 3D.02 Preferential Lane Longitudinal Markings for Motor Vehicles. Yellow highlight text is edited in Section 3D.02 (editorial change).

Section 3D.02 Preferential Lane Longitudinal Markings for Motor Vehicles

…

Standard:

03 **Longitudinal pavement markings for preferential lanes shall be as follows (these same requirements are presented in tabular form in Table 3D-1):**

A. Barrier-separated, non-reversible preferential lane—the longitudinal pavement markings for preferential lanes that are physically separated from the other travel lanes by a barrier or median shall consist of a normal solid single yellow line at the left-hand edge of the travel lane(s), and a normal solid single white line at the right-hand edge of the travel lane(s) (see Drawing A in Figure 3D-1).

B. Barrier-separated, reversible preferential lane—the longitudinal pavement markings for reversible preferential lanes that are physically separated from the other travel lanes by a barrier or median shall consist of a normal solid single white line at both edges of the travel lane(s) (see Drawing B in Figure 3D-1).

C. Buffer-separated (left-hand side) preferential lane—the longitudinal pavement markings for a full-time or part-time preferential lane on the left-hand side of and separated from the other travel lanes by a neutral buffer space shall consist of a normal solid single yellow line at the left-hand edge of the preferential travel lane(s) and one of the following at the right-hand edge of the preferential travel lane(s):

~~1. A wide solid double white line along both edges of the buffer space where crossing the buffer space is prohibited (see Drawing A in Figure 3D-2).~~

1. Two sets of wide solid double white lines where crossing the buffer space is prohibited and the buffer space is 4 feet or greater (see Drawing A in Figure 3D-2 and Detail 45 in Figure 3A-113(CA)).

~~2. A wide solid single white line along both edges of the buffer space where crossing the buffer space is discouraged (see Drawing B in Figure 3D-2).~~

2. A set of wide solid double white lines where crossing the buffer space is prohibited and the buffer space is 2 feet (see Drawing A in Figure 3D-2 and Detail 44 in Figure 3A-113(CA)).

3. ~~A wide broken single white line along both edges of the buffer space, or a~~ A wide broken single white lane line within the allocated buffer space (resulting in wider lanes), where crossing the buffer space is permitted (see bottom half of Drawing C in Figure 3D-2 and Detail 42 in Figure 3A-113(CA)).

D. Buffer-separated (right-hand side) preferential lane—the longitudinal pavement markings for a full-time or part-time preferential lane on the right-hand side of and separated from the other travel lanes by a neutral buffer space shall consist of a normal solid single white line at the right-hand edge of the preferential travel lane(s) if warranted (see Section 3B.07) and one of the following at the left-hand edge of the preferential travel lane(s) (see Drawing D in Figure 3D-2):

~~1. A wide solid double white line along both edges of the buffer space where crossing the buffer space is prohibited.~~

1. Two sets of wide solid double white lines where crossing the buffer space is prohibited and the buffer space is 4 feet or greater (see Detail 45 in Figure 3A-113(CA)).

~~2. A wide solid single white line along both edges of the buffer space where crossing of the buffer space is discouraged.~~

2. A set of wide solid double white lines where crossing the buffer space is prohibited and the buffer space is 2 feet (see Detail 44 in Figure 3A-113(CA)).

3. A ~~wide broken single white line along both edges of the buffer space, or a~~ A wide broken single white line within the allocated buffer space (resulting in wider lanes), where crossing the buffer space is permitted (see Detail 42 in Figure 3A-113(CA)).

4. A wide dotted single white lane line within the allocated buffer space (resulting in wider lanes) where crossing the buffer space is permitted for any vehicle to perform a right-turn maneuver (see Detail 37 in Figure 3A-111(CA)).

E. Contiguous (left-hand side) preferential lane—the longitudinal pavement markings for a full-time or part-time preferential lane on the left-hand side of and contiguous to the other travel lanes shall consist of a normal solid single yellow line at the left-hand edge of the preferential travel lane(s) and one of the following at the right-hand edge of the preferential travel lane(s):

1. A wide solid double white lane line where crossing is prohibited (see Drawing A in Figure 3D-3 and Detail 44 in Figure 3A-113(CA)).

2. A wide solid single white lane line where crossing is discouraged (see Drawing B in Figure 3D 3 and Detail 43 in Figure 3A-113(CA)).

3. A wide ~~solid~~ broken single white lane line where crossing is permitted (see Drawing C in Figure 3D-3 and Detail 42 in Figure 3A-113(CA)).

4. A normal broken white line where crossing is permitted on preferential lanes that operate for only certain periods of the day. In these cases, markings shall conform to the purpose the lane serves a majority of the time.

F. Contiguous (right-hand side) preferential lane—the longitudinal pavement markings for a full-time or part-time preferential lane on the right-hand side of and contiguous to the other travel lanes shall consist of a normal solid single white line at the right-hand edge of the preferential travel lane(s) if warranted (see Section 3B.07) and one of the following at the left-hand edge of the preferential travel lane(s) (see Drawing D in Figure 3D-3):

1. A wide solid double white lane line where crossing is prohibited (see Detail 44 in Figure 3A-113(CA)).

2. A wide solid single white lane line where crossing is discouraged (see Detail 43 in Figure 3A-113(CA)).

3. A wide broken single white lane line where crossing is permitted (see Detail 42 in Figure 3A-113(CA)).

4. A wide dotted single white lane line where crossing is permitted for any vehicle to perform a right-turn maneuver (see Detail 37 in Figure 3A-111(CA)).

5. A normal broken white line where crossing is permitted on preferential lanes that operate for only certain periods of the day. In these cases, markings shall conform to the purpose the lane serves a majority of the time.

Guidance:

04 *Where preferential lanes and other travel lanes are separated by a buffer space wider than 4 feet and crossing the buffer space is prohibited, chevron markings (see Section 3B.24) should be placed in the buffer area (see Drawing A in Figure 3D-2). The chevron spacing should be 100 feet or greater.*

04a *Buffer spaces between 4 feet and 12 feet (see Figure 3A-113(CA), Detail 45) should be avoided, except when transitioning between narrow and wide buffer areas.*

- Chapter 6F: Temporary Traffic Control Zone Devices. Table 6F-1(CA) is edited (editorial change).

Table 6F-1(CA). California Temporary Traffic Control Zone Sign and Plaque Sizes

Sign or Plaque	Sign Designation	Section	Conventional Road (Minimum)	Expressway	Freeway	Oversized
RAMP CLOSED	C2(CA)	6F.28	48 x 30	48 x 30	48 x 30	---
California Flagger Symbol	C9A(CA)	6F.31	36 x 36	48 x 48	48 x 48	---
NARROW LANE(S)	C12(CA)	6F.26, 6F.102(CA)	36 x 36	48 x 48	48 x 48	---
RAMP CLOSED AHEAD	C19(CA)	6F.28	36 x 36	48 x 48	48 x 48	---
RIGHT LANE CLOSED AHEAD	C20(CA)	6F.22	36 x 36	48 x 48	48 x 48	72 x 72
LEFT plaque	C20A(CA)	6F.22	16 x 7	19 x 8	19 x 8	33 x 10
Numeral plaque	C20B(CA)	6F.22	6 x 8	8 x 10	8 x 10	10 x 12
RAMP WORK AHEAD	C23(CA)	6F.18	36 x 36	48 x 48	48 x 48	---
ROAD (STREET) WORK Informational plaque	C23B(CA)	6F.18	Var x 18	Var x 24	Var x 24	---
SHOULDER WORK AHEAD	C24(CA)	6F.37	30 x 30	48 x 48	48 x 48	---
OPEN TRENCH	C27(CA)	6F.103(CA)	36 x 36	48 x 48	48 x 48	---
XXXX FT	C29(CA)	6F.53	20 x 7	36 x 9	36 x 9	---
LANE CLOSED	C30(CA)	6F.22	30 x 30	48 x 48	48 x 48	---
SHOULDER CLOSED	C30A(CA)	6F.37	30 x 30	48 x 48	48 x 48	---
NO SHOULDER	C31A(CA)	6F.44, 6F.103(CA)	36 x 36	48 x 48	48 x 48	---
TRAFFIC CONTROL - WAIT AND FOLLOW PILOT CAR	C37(CA)	6F.58	36 x 42	36 x 42	---	---
USE NEXT EXIT	C38(CA)	6F.28	---	48 x 36	48 x 36	---
TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	C40(CA)	6F.12	108 x 42	144 x 60	144 x 60	---
TRAFFIC FINES DOUBLED IN WORK ZONES	C40A(CA)	6F.12	36 x 36	48 x 48	48 x 48	---
FRESH CONCRETE	C43(CA)	6F.107(CA)	36 x 36	48 x 48	48 x 48	---
TRUCKS ENTERING EXITING	C44(CA)	6F.36	36 x 36	48 x 48	48 x 48	---
RUMBLE STRIPS	C45(CA)	6F.87	36 x 36	48 x 48	---	---
UNEVEN PAVEMENT	C46(CA)	6F.45	36 x 36	48 x 48	48 x 48	---
UNEVEN PAVEMENT plaque	C46P(CA)	6F.45	30 x 18	36 x 24	36 x 24	---
Construction Project Funding Identification Signs	C47A, B(CA)	6F.109(CA)	48 x 30	132 x 78	132 x 78	---
Construction Project Funding Identification Signs	C48(CA)	6F.109(CA)	48 x 30	132 x 78	132 x 78	---
MOVE OVER OR SLOW WHEN AMBER LIGHTS FLASHING	R111(CA)	6F.108(CA)	54 x 18	54 x 18	54 x 18	---
PILOT CAR DO NOT PASS	R115(CA)	6F.58	36 x 18	36 x 18	---	---
DETOUR with Arrow	SC3(CA)	6F.59	36 x 12	48 x 18	48 x 18	---
SPECIAL EVENT AHEAD	SC5(CA)	6F.18	36 x 36	48 x 48	48 x 48	---
RAMP CLOSED (Not more than one day)	SC6-3(CA)	6F.28	48 x 48	48 x 48	48 x 48	---
RAMP CLOSED (More than one day)	SC6-4(CA)	6F.28	48 x 60	48 x 60	48 x 60	---
Day/Month plaque	SC6A(CA)	6F.28	12 x 6	12 x 6	12 x 6	---
Time plaque	SC6B(CA)	6F.28	6 x 6	6 x 6	6 x 6	---
RAMP CLOSED, USE RAMP AT ___	SC7(CA)	6F.28	84 x 42	84 x 42	84 x 42	---
___ EXIT - RAMP CLOSED	SC8(CA)	6F.28	---	84 x 42	84 x 42	---
(FWY) DETOUR with Arrow	SC9(CA)	6F.59	36 x 36	48 x 48	48 x 48	---
LANE CLOSED AHEAD or ROAD WORK AHEAD	SC10(CA)	6F.104(CA)	48 x 30	66 x 36	66 x 36	---
LANE CLOSED	SC11(CA)	6F.104(CA)	42 x 30	54 x 42	54 x 42	---
DO NOT PASS	SC13(CA)	6F.104(CA)	42 x 30	54 x 42	54 x 42	---
CAUTION	SC15(CA)	6F.104(CA)	42 x 18	54 x 24	54 x 24	---

EXIT with Arrow	SC18(CA)	6F.28	---	48 x 48	48 x 48	---
Slow For The Cone Zone	SC19(CA)	6F.106(CA)	54 x 36	54 x 36	54 x 36	114 x 78
SLOW FOR THE CONE ZONE	SC20(CA)	6F.106(CA)	42 x 36	54 x 48	54 x 48	---
CAUTION FREQUENT STOPPING AND BACKING STAY BACK 100 FEET	SC21(CA)	6F.108(CA)	30 x 42	30 x 42	30 x 42	---
FLOODING AHEAD TURN AROUND DON'T DROWN	W86(CA)	6I.101(CA)	30 x 24	---	---	---
EMERGENCY SCENE AHEAD	W90(CA)	6I.101(CA)	36 X 36	48 X 48	48 X 48	

- Chapter 9B: Signs. Figure 9B-2 is edited (editorial change).

Figure 9B-2. Regulatory Signs and Plaques for Bicycle Facilities