



**California Traffic Control Devices Committee (CTCDC)
Agenda Item Report**



Meeting Date: February 1, 2024	From: Abhinay Movva, Caltrans
Item Number: 24-01	
Sponsored By: Florencia Allenger, Caltrans	Presented By: Abhinay Movva, Caltrans
Description: Proposed new traffic sign (R10-3k(CA)) for touch-free Accessible Pedestrian Signal (APS) with word message "PUSH OR WAVE AT BUTTON TO TURN ON WARNING LIGHTS." Revision to California Manual on Uniform Traffic Control Devices (CA MUTCD) Sections 2B.52, 4N.02, and 9B.11.	

Recommendation:

Motion by committee to recommend inclusion of the proposed R10-3k(CA) sign to the CA MUTCD Section 2B.52, 4N.02, and 9B.11.

Agency Making Request/Sponsor:

Abhinay Movva (Caltrans District 4) / Florencia Allenger (Caltrans HQ, CTCDC member)

Background:

As a public health safety enhancement, Caltrans Traffic Operations Policy Directive 21-06 issued on June 24, 2021, requires Touch-free Accessible Pedestrian Signals be installed at pedestrian crossings on State Highway System. This policy applies to Traffic Signals, In-Roadway Warning Lights, Rapid Rectangular Flashing Beacons (RRFB), and Pedestrian Hybrid Beacons. There is currently no word message sign to indicate touch-free feature of APS pushbutton to activate RRFB.

Attachments:

- Attachment A – Proposed Changes to CA MUTCD Section 2B.52, 4N.02 and 9B.11.
- Attachment B – Proposed Changes to CA MUTCD Figure 2B-26 and 9B-2.
- Attachment C – Proposed Changes to CA MUTCD Table 2B-1 (CA) and 9B-1 (CA).
- Attachment D – Proposed Sign Specifications.
- Attachment E – 2023 Standard Specifications (Section 86-1.02T Accessible Pedestrian Signals).
- Attachment F – Caltrans Traffic Operations Policy Directive (21-06 Touch-free Accessible Pedestrian Signal (APS)).



ATTACHMENT A



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Attachment A – Proposed Revision to CA MUTCD Section 2B.52, 4N.02 AND 9B.11.

Proposal:

Note:

- Black text is consistent with the Federal MUTCD.
- Blue text is current text as amended for use in California.
- ~~Struck-out blue text~~ is to be deleted from the CA MUTCD.
- Red text is newly proposed text.

Modify Section 2B.52 as shown:

Section 2B.52 Traffic Signal Pedestrian and Bicycle Actuation Signs (R10-1 through R10-4, and R10-24 through R10-26)

Standard:

- 01 **Traffic Signal signs applicable to pedestrian actuation (see Figure 2B-26) or bicyclist actuation (see Figure 9B-2) shall be mounted immediately above or incorporated into the pushbutton detector units (see Section 4E.08).**

Support:

- 02 Traffic Signal signs applicable to pedestrians include:
 - A. CROSS ONLY ON GREEN (symbolic circular green) (R10-1);
 - ~~B. CROSS ONLY ON (symbolic walk indication) SIGNAL (R10-2);~~
 - C. Push Button for Walk Signal (R10-3 series); ~~and~~
 - ~~D. Push Button for Green Signal (R10-4 series).~~

Option:

- 03 The following signs may be used as an alternate for the R10-3 ~~and R10-4~~ signs:
 - A. Push Button to Cross Street Wait for Walk Signal (R10-3a); or
 - ~~B. Push Button to Cross Street Wait for Green Signal (R10-4a).~~
- 04 The name of the street to be crossed may be substituted for the word STREET in the legends on the R10-3a ~~and R10-4a~~ signs.

Guidance:

- 05 *The finger in the pushbutton symbol on the R10-3, ~~and R10-3a, R10-4, and R10-4a~~ signs should point in the same direction as the arrow on the sign.*

Option:

~~06 Where symbol type pedestrian signal indications are used, an educational sign (R10-3b) may be used instead of the R10-3 sign to improve pedestrian understanding of pedestrian indications at signalized intersections. Where word type pedestrian signal indications are being retained for the remainder of their useful service life, the legends WALK/ DON'T WALK may be substituted for the symbols on the educational sign R10-3b, thus creating educational sign R10-3c. The R10-3d educational sign may be used to inform pedestrians that the pedestrian clearance time is sufficient only for the pedestrian to cross to the median at locations where pedestrians cross in two stages using a median refuge island. The R10-3e educational sign may be used where countdown pedestrian signals have been provided. In order to assist the pedestrian in understanding which pushbutton to push, the R10-3f to R10-3i educational signs that provide the name of the street to be crossed may be used instead of the R10-3b to R10-3e educational signs.~~

- 06a The R10-3e(CA) or R10-3i(CA) educational sign may be used where countdown pedestrian signals have been provided. Support
- 06b Pedestrian pushbuttons are used to actuate pedestrian signal timing, to activate accessible pedestrian signals or both. See Section 4E.09 regarding the application of accessible pedestrian signals and detectors. Option:
- 06c The R10-3j(CA) sign may be used where the pedestrian signal can be activated by pushing the button or waving at the button.



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^{06d} The R10-3k(CA) sign may be used where Warning Lights or flashing beacons can be activated by pushing the button or waving at the button.

Standard

^{06d} ^{06e} The bottom panels of signs ~~R10-3b through R10-3e~~(CA) and R10-3i(CA) shall be eliminated where the pedestrian signal timing is non-actuated and the pedestrian push button is used solely to activate accessible pedestrian signals.

Option:

⁰⁷ The R10-24 or R10-26 sign (see Section 9B.11) may be used where a pushbutton detector has been installed exclusively to actuate a green phase for bicyclists.

⁰⁸ The R10-25 sign (see Figure 2B-26) may be used where a pushbutton detector has been installed for pedestrians to activate In-Roadway Warning Lights (see Chapter 4N) or flashing beacons that have been added to the pedestrian warning signs.

Support:

⁰⁹ Section 4E.08 contains information regarding the application of the R10-32P plaque.

Standard:

¹⁰ The PUSH BUTTON FOR PEDESTRIAN WARNING LIGHTS – CROSS WITH CAUTION (R62E(CA)) sign (see Figure 2B-26(CA)) shall be mounted immediately above or incorporated in the pedestrian push button unit where In Roadway Warning Lights are installed and a pedestrian actuated system is used.

Modify Section 4N.02 as shown:

Section 4N.02 In-Roadway Warning Lights at Crosswalks

Option: ⁰¹ In-roadway lights may be installed at certain marked crosswalks, based on an engineering study or engineering judgment, to provide additional warning to road users.

Standard:

⁰² **If used, In-Roadway Warning Lights at crosswalks shall be installed only at marked crosswalks with applicable warning signs. They shall not be used at crosswalks controlled by YIELD signs, STOP signs, or traffic control signals.**

⁰³ **If In-Roadway Warning Lights are used at a crosswalk, the following requirements shall apply:**

- A. Except as provided in Paragraphs 7 and 8, they shall be installed along both sides of the crosswalk and shall span its entire length.**
- B. They shall initiate operation based on pedestrian actuation and shall cease operation at a predetermined time after the pedestrian actuation or, with passive detection, after the pedestrian clears the crosswalk.**
- C. They shall display a flashing yellow light when actuated. The flash rate shall be at least 50, but no more than 60, flash periods per minute. If they are flashed in a manner that includes a continuous flash of varying intensity and time duration that is repeated to provide a flickering effect, the flickers or pulses shall not repeat at a rate that is between 5 and 30 per second to avoid frequencies that might cause seizures.**
- D. They shall be installed in the area between the outside edge of the crosswalk line and 10 feet from the outside edge of the crosswalk.**
- E. They shall face away from the crosswalk if unidirectional, or shall face away from and across the crosswalk if bidirectional.**

⁰⁴ **If used on one-lane, one-way roadways, a minimum of two In-Roadway Warning Lights shall be installed on the approach side of the crosswalk. If used on two-lane roadways, a minimum of three In-Roadway Warning Lights shall be installed along both sides of the crosswalk. If used on roadways with more than two lanes, a minimum of one In-Roadway Warning Light per lane shall be installed along both sides of the crosswalk.**

Guidance:

05 *If used, In-Roadway Warning Lights should be installed in the center of each travel lane, at the center line of the roadway, at each edge of the roadway or parking lanes, or at other suitable locations away from the normal tire track paths.*

06 *The location of the In-Roadway Warning Lights within the lanes should be based on engineering judgment.*

Option: 07 On one-way streets, In-Roadway Warning Lights may be omitted on the departure side of the crosswalk.

08 Based on engineering judgment, the In-Roadway Warning Lights on the departure side of the crosswalk on the left side of a median may be omitted.

09 Unidirectional In-Roadway Warning Lights installed at crosswalk locations may have an optional, additional

yellow light indication in each unit that is visible to pedestrians in the crosswalk to indicate to pedestrians in the crosswalk that the In-Roadway Warning Lights are in fact flashing as they cross the street. These yellow lights may flash with and at the same flash rate as the light module in which each is installed.

Guidance:

10 *If used, the period of operation of the In-Roadway Warning Lights following each actuation should be sufficient to allow a pedestrian crossing in the crosswalk to leave the curb or shoulder and travel at a walking speed of 3.5 feet per second to at least the far side of the traveled way or to a median of sufficient width for pedestrians to wait. Where pedestrians who walk slower than 3.5 feet per second, or pedestrians who use wheelchairs, routinely use the crosswalk, a walking speed of less than 3.5 feet per second should be considered in determining the period of operation.*

Standard:

11 **If pedestrian pushbuttons are used to actuate the in-roadway lights, a Push Button To Turn On Warning Lights (with pushbutton symbol) (R10-25) sign (see Figure 2B-26) shall be mounted adjacent to immediately above or integral with each pedestrian pushbutton.**

11a **If touch-free Accessible Pedestrian Signals (APS) are used to actuate warning lights, a "Push or Wave At Button To Turn On Warning Lights" (R10-3k(CA)) sign (see Figure 2B-26) shall be mounted immediately above or integral with each APS.**

12 **Where the period of operation is sufficient only for crossing from a curb or shoulder to a median of sufficient width for pedestrians to wait, median-mounted pedestrian actuators shall be provided.**

13 **In-Roadway Warning Lights (IRWLs) shall not be placed on or within the crosswalk markings. If the In-Roadway Warning Lights are activated by a push button, the PUSH BUTTON FOR PEDESTRIAN WARNING LIGHTS, CROSS WITH CAUTION (R62E(CA)) sign shall be used.**

14 **The following shall be considered when evaluating the need for In-Roadway Warning Lights:**

A. Whether the crossing is controlled or uncontrolled.

B. An engineering traffic study to determine if In-Roadway Warning Lights are compatible with the safety and operation of nearby intersections, which may or may not be, controlled by traffic signals or STOP/YIELD signs.

C. Standard traffic signs for crossings and crosswalk pavement markings are provided.

D. At least 40 pedestrians regularly use the crossing during each of any two hours (not necessarily consecutive) during a 24-hour period.

E. The vehicular volume through the crossing exceeds 200 vehicles per hour in urban areas or 140 vehicles per hour in rural areas during peak-hour pedestrian usage.

F. The critical approach speed (85th percentile) is 45 mph or less.

G. In-Roadway Warning Lights are visible to drivers at the minimum stopping sight distance for the posted speed limit.

H. Public education on In-Roadway Warning Lights is conducted for new installations.

Option:

¹⁵ Overhead or roadside Flashing Yellow Beacons may be installed in conjunction with In-Roadway Warning Lights. In-Roadway Warning Lights may be installed independently, but are not necessarily intended to be a substitute for standard flashing beacons. Engineering judgment should be exercised.

Guidance: ¹⁶ Typical applications of In-Roadway Warning Lights are shown in Figure 4N-101(CA).

Section 4N.101(CA) In-Roadway Warning Lights at Crosswalks Financing and Maintenance-State Highways Standard:

⁰¹ When In-Roadway Warning Lights are proposed by Caltrans on State highways, Caltrans shall pay the costs of installation and maintenance. When In-Roadway Warning Lights are proposed and installed by a local agency on State highways, the installation of In-Roadway Warning Lights shall be covered by an Encroachment Permit issued by the local Caltrans District Director. The local agency shall be responsible for installation and maintenance of the In-Roadway Warning Lights.

Modify Section 9B.11, paragraph 04 as shown:

Section 9B.11 Bicycle Regulatory Signs (R9-5, R9-6, R10-4, R10-24, R10-25, R10-3k(CA) and R10-26)

Option: ⁰¹ The R9-5 sign (see Figure 9B-2) may be used where the crossing of a street by bicyclists is controlled by pedestrian signal indications. ⁰² Where it is not intended for bicyclists to be controlled by pedestrian signal indications, the R10-4, R10-24, or R10-26 sign (see Figure 9B-2 and Section 2B.52) may be used.

Guidance:

⁰³ If used, the R9-5, R10-4, R10-24, or R10-26 signs should be installed near the edge of the sidewalk in the vicinity of where bicyclists will be crossing the street.

Option:

⁰⁴ If bicyclists are crossing a roadway where In-Roadway Warning Lights (see Section 4N.02) or other warning lights or beacons have been provided, the R10-25 sign or R10-3k(CA) sign (see Figure 9B-2) may be used.

⁰⁵ The R9-6 sign (see Figure 9B-2) may be used where a bicyclist is required to cross or share a facility used by pedestrians and is required to yield to the pedestrians.



ATTACHMENT B

Attachment B – Proposed Revision to CA MUTCD Figure 2B-26 AND 9B-2.

Proposal:

Note:

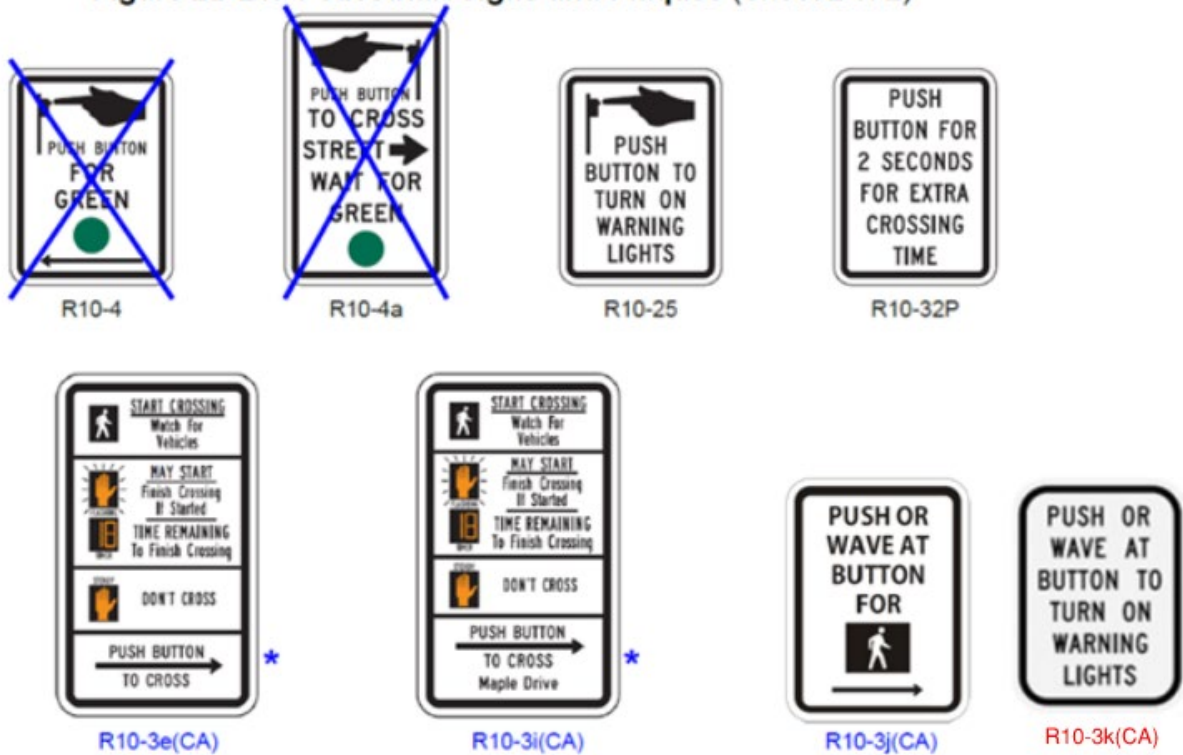
Black text is consistent with the Federal MUTCD.

Blue text is current text as amended for use in California.

Red text is newly proposed text.

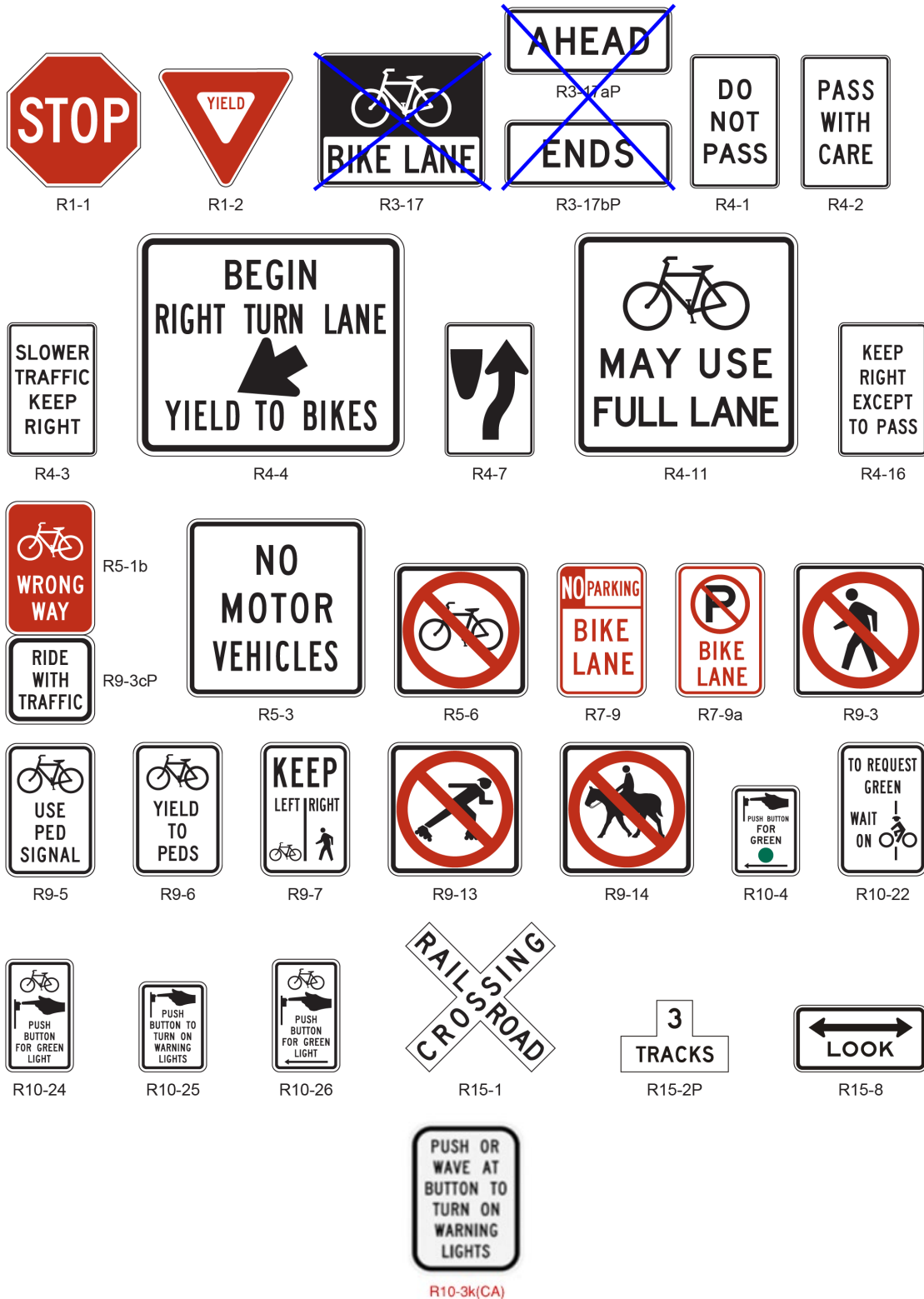
Modify Figure 2B-26 and 9B-2 as shown:

Figure 2B-26. Pedestrian Signs and Plaques (Sheet 2 of 2)



* The bottom portion of the panel shall be eliminated where the pedestrian signal timing is non-actuated and the pedestrian push button is used solely to activate accessible pedestrian signals.

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





ATTACHMENT C



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Proposal:

Note:

Black text is consistent with the Federal MUTCD.

Blue text is current text as amended for use in California.

Red text is newly proposed text.

Modify Table 2B-1(CA) and 9B-1(CA) as shown:

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	---	---	---	---
Push or Wave at Button to Turn on Warning Lights	R10-3k(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	---	---	---	---

Table 9B-1(CA). California Bicycle Facility Sign and Plaque Minimum Sizes

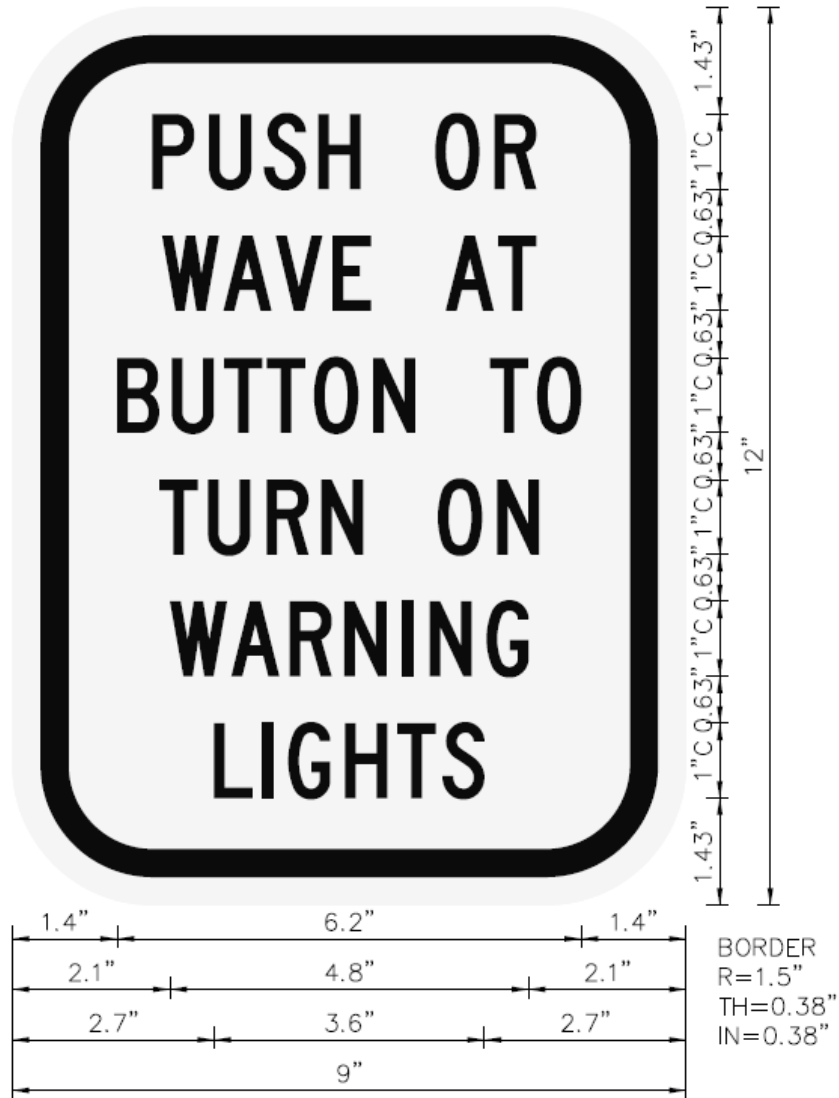
Sign or Plaque	Sign Designation	Section	Shared-Use Path	Roadway
Bicycle Parking	G93C(CA)	9B.23	24 x 18	24 x 18
Bike Path Exclusion	R44A(CA)	9B.08	12 x 24	-- -
BICYCLES MOTOR-DRIVEN CYCLES MUST EXIT	R44B(CA)	9B.101(CA)	---	30 x 36
BICYCLES MUST EXIT	R44C(CA)	9B.101(CA)	---	30 x 30
Bike Lane	R81(CA)	9B.04	---	12 x 8
BEGIN	R81A(CA)	9B.04	---	12 x 5
END	R81B(CA)	9B.04	---	8 x 5
PASS Bicycle 3 FT MIN	R117(CA)	9B.102(CA)	---	30 x 30 *
EXCEPT Bicycle	R118(CA)	9C.04	---	18 x 15 *
Bicycle Route Number Marker	SG45(CA)	9B.21	12 x 18	12 x 18
Bicycle Route Name Marker	S17(CA)	9B.21	24 x 6	24 x 6
Push or Wave at Button to Activate warning lights	R10-3k(CA)	9B.11	9 x 12	9 x 12

* Other sign sizes are available, see specific California Sign Specification



ATTACHMENT D

Proposal: Add Sign Specification R10-3k(CA).



R10-3k(CA)

COLORS: LEGEND – BLACK
BACKGROUND – WHITE (RETROREFLECTIVE)



ATTACHMENT E

8. Have prominent and permanent vertical markings for accurate indexing and orientation within the pedestrian signal housing. Markings must be a minimum of 1 inch in height and include an up arrow and the word *up* or *top*.

Upon initial testing at 25 degrees C, the module must have at least the luminance values shown in the following table:

PSF module symbol	Luminance (fL)
Upraised hand and 2-digit countdown timer	1,094
Walking person	1,547

The module must not exceed the power consumption requirements shown in the following table:

PSF module display	At 24 °C	At 74 °C
<i>Upraised Hand</i>	10.0 W	12.0 W
<i>Walking Person</i>	9.0 W	12.0 W
2-digit countdown timer	6.0 W	8.0 W

If the pedestrian change interval is interrupted, then the 2-digit countdown timer and display must reset to the full pedestrian change interval before being initiated the next time. The 2-digit countdown display on the PSF module must go dark within a second after displaying "0".

86-1.02S(3)(d) Front Screen

Pedestrian signal face must have a front screen that is one of the following types:

1. 3/8-inch-thick aluminum honeycomb screen with 0.2-inch-wide cells or a 1/2-inch-thick plastic screen with 3/8-inch-wide squares with 1/16-inch wall thickness that:
 - 1.1. Is installed so it tilts downward at an angle of 15 ± 2 degrees from the top and completely covers the message plate
 - 1.2. Includes a clear front cover made of either a minimum 1/8-inch-thick acrylic plastic sheet or a minimum 1/16-inch-thick polycarbonate plastic
 - 1.3. Is held firmly in place, including the cover, with stainless steel or aluminum clips or stainless steel metal screws
2. Polycarbonate screen that:
 - 2.1. Has a nominal thickness of 1/32 inch
 - 2.2. Is a 1-1/2-inch-deep eggcrate or Z-crate type
 - 2.3. Is mounted in a frame constructed of aluminum alloy or polycarbonate with a minimum thickness of 0.040 inch
 - 2.4. Is held in place with stainless steel screws

The screen and frame of a pedestrian signal face must be made of either (1) plastic that is a flat black color or (2) anodized aluminum that is a flat black color or finished with lusterless, black, exterior-grade latex paint formulated for application to metal surfaces.

86-1.02T Accessible Pedestrian Signals

Accessible pedestrian signal (APS) must be on the Authorized Material List for Accessible Pedestrian Signals.

An APS must comply with the *California MUTCD*, chapter 4E, and must:

1. Have an audible speech message that plays when the push button is actuated. The accessible pedestrian signal must have at least 5 audible message options.
2. Have a push button locator tone that clicks or beeps.
3. Allow the pushbutton to activate the pedestrian phase during any failure of the APS features.
4. Have a controllable and programmable volume level and messaging.
5. Be weatherproof and shockproof.

6. Weigh 7 lb maximum.
7. Measure 16 by 6 by 5 inches, maximum.
8. Have a switch for a push button.
9. Have a vibrotactile device on the push button or on the arrow.
10. Have an internal weatherproof speaker.
11. Have a microphone that senses the ambient sound level.
12. Include touch-free technology.

Theft-proof bolts used for mounting the housing to the standard must be stainless steel with a content of 17 percent chromium and 8 percent nickel. The housing must be shaped to fit the pole's curvature.

The color of the housing must match color no. 33538, 17038, 27038, or 37038 of AMS-STD-595.

The separation between adjacent holes used for conductors and mounting must be at least twice the diameter of the larger hole.

The speaker grill must be located on the surface of the housing. The speaker must not interfere with the housing or its mounting hardware.

The signal interface cable between the APS and the pedestrian signal head must be rated for outdoor use and have:

1. Four no. 18 stranded tinned copper conductors with a minimum insulation thickness of 15 mils
2. Cable jacket with a minimum thickness of 20 mils and rated for a minimum:
 - 2.1. 300 V(ac)
 - 2.2. 176 degrees F
3. Nominal outside diameter less than 350 mils
4. Conductor color code of black, white, red, and green

Touch-free technology must:

1. Activate a pedestrian phase when a pedestrian hand motion is detected during a set time interval
2. Have user adjustable detection area and time interval parameters
3. Detect the pedestrian hand motion up to a 6-inch range from the face of the sensor within a minimum ± 45 -degree cone zone from the center of the sensor

86-1.02U Push Button Assemblies

The housing for a push button assembly must be made of die-cast aluminum, permanent mold-cast aluminum, or UV-stabilized self-extinguishing structural plastic.

The housing must have a uniform color that matches color no. 17038, 27038, or 37038 of AMS-STD-595.

If the push button is to be attached to a pole, the housing must be shaped to fit the pole's curvature.

The assembly must be waterproof and shockproof.

The push button's switch must be a single-pole, double-throw switching unit with screw-type terminals rated 15 A at 125 V(ac).

Switch for the push button must have:

1. Plunger actuator and a U frame to allow recessed mounting in the push button housing
2. Operating force of 3.5 lb
3. Maximum pretravel of 5/64 inch
4. Minimum overtravel of 1/32 inch
5. Differential travel from 0.002 to 0.04 inch
6. Minimum 2-inch diameter actuator

86-1.02V Reserved

86-1.02W Loop Detector Sealants

86-1.02W(1) General

Sealant for filling loop detector slots must be one of the following:



ATTACHMENT F



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Attachment E – View [Traffic Operations Policy Directive 21-06](#)