



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



Meeting Date: November 02, 2023	From: Florencia Allenger, PE, Caltrans
Item Number: 20-12	
Sponsored By: Yue Wang, PE, Caltrans	Presented By: Brian Hadley, PE, Caltrans, I-5 NCC Sr Resident Engineer
Description: Revisions for Section 3A.05 of the California MUTCD 2014 Edition to allow orange to be used as a contrast color with pavement delineation in construction zones.	

Recommendation

Motion by committee to adopt revisions to Sections 3A.05 of the California MUTCD 2014 Edition, as proposed in Attachment 1, to allow orange to be used as a contrast color with white and yellow striping in construction zones.

Agency Making Request/Sponsor:

Caltrans/Yue Wang, CTCDC Member

Background:

CTCDC Experiment 20-12 – Orange Contrasted Temporary Pavement Delineation in Construction Zones [and FHWA experiment 6(09)-59(E) - Orange Contrast Temporary Pavement Markings - CA DOT] has been successfully conducted during construction of the Interstate 5 (I-5) North Coast Corridor (NCC) Segment 4 project. Currently in both the northbound and southbound directions of I-5, the Alternative 1 detail (16' orange paint contrast line preceding standard 12' white paint lane line) is being used. Orange contrasted striping enhances clarity of construction delineation and motorist awareness of work zones. Additional data gathering on public motorist behavior and automated vehicles will further help determine its effect on safety and operations. Caltrans is requesting changes to the California MUTCD to allow orange contrasted striping to be used on construction projects in the state.

Attachment:

Attachment A – Revisions to Section 3A.05 of the California MUTCD 2014 Edition
Attachment B – Examples of orange contrast with pavement delineation in construction zones



ATTACHMENT A

Attachment A – Proposed changes to Section 3A.05

Proposal:

Note:

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

Modify Section 3A.05 as shown:

Section 3A.05 Colors

Standard:

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

01a The color of curb markings shall conform to CVC 21458. Refer to CVC 21374 for exceptions.

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

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

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

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

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

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

Support:

04a Red pavement markers are used to alert possible wrong way drivers on freeways as shown in Figure 3A-102(CA) and Figure 3A-105(CA), Details 9A, 12A and 25A 14 and 14A.

Standard:

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

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

06a When used, orange markings may supplement white and yellow longitudinal lines in construction zones.

Option:

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



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^{07a} Orange may be used in combination with white and yellow longitudinal lines in construction zones where a light-colored pavement does not provide sufficient contrast with the markings.

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

^{08a} If the material used for centerline marking is paint, a 3-inch wide black line may be placed between the 4-inch wide yellow lines on streets and highways under local jurisdiction.

Standard:

^{08b} **If the material used for centerline marking is paint, a 3-inch wide black line shall be placed between the 4-inch wide yellow lines on State highways.**

Support:

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

¹⁰ When used in combination with white and yellow longitudinal lines in construction zones, orange is not considered a marking color, but only a contrast enhancing system for the markings.



ATTACHMENT B



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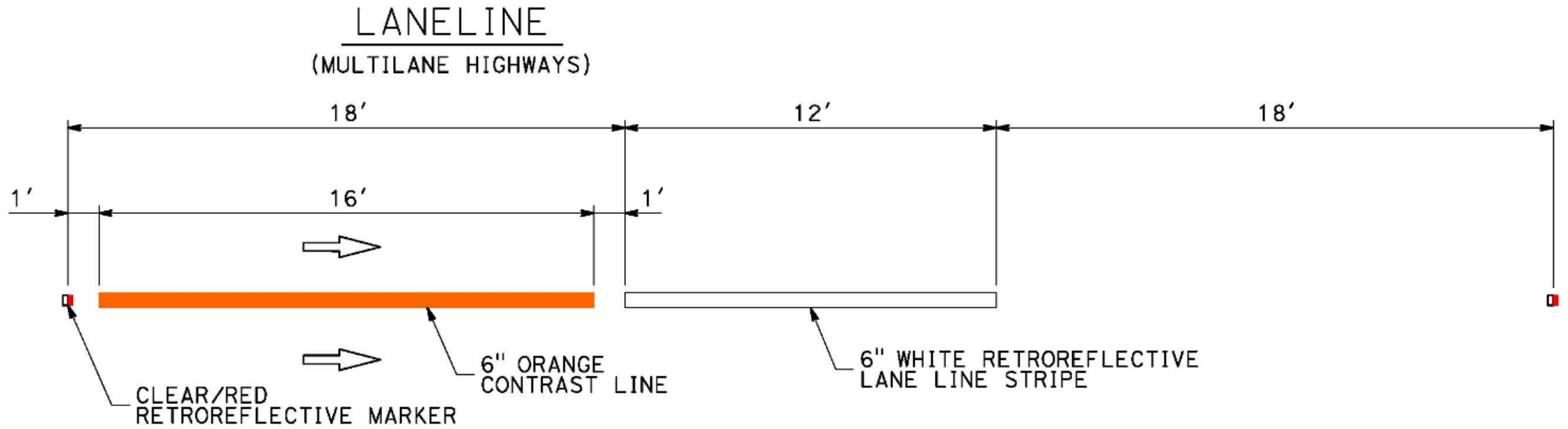


Attachment B – Examples of orange contrast with pavement delineation in construction

Item Number 20-12
Attachment B –
Examples of orange contrast with pavement
delineation in construction zones



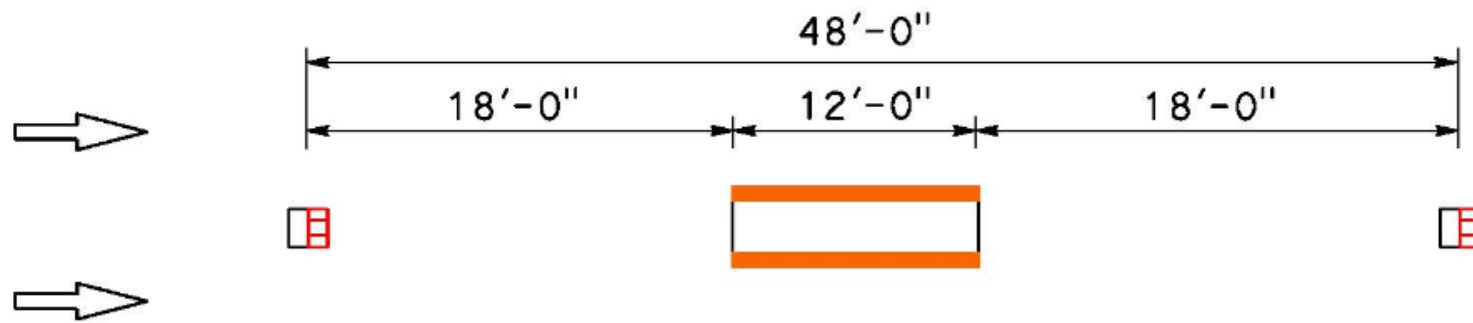
Alternative 1 laneline



Alternative 2 lane line

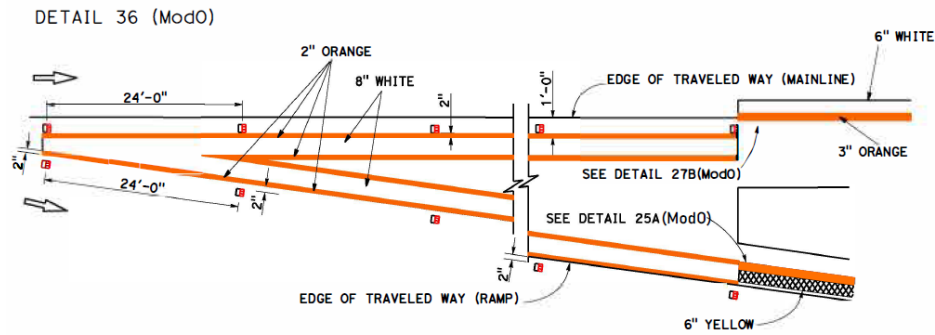
LANE LINE
(MULTILANE HIGHWAYS)

DETAIL 12 (Mod0)

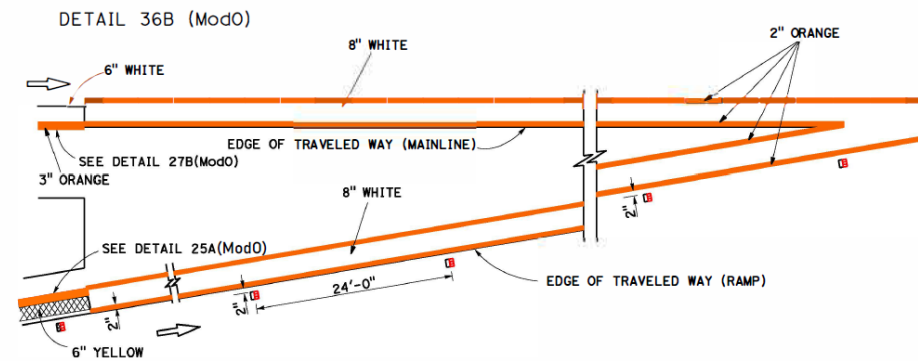


Gore area

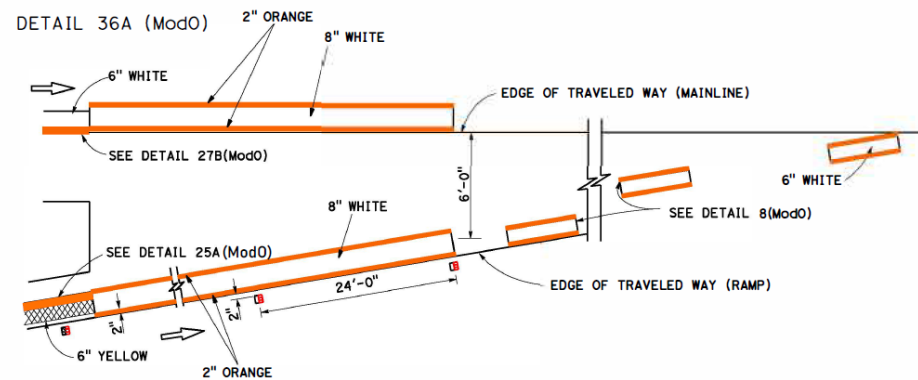
EXIT RAMP NEUTRAL AREA (GORE) TREATMENT



ENTRANCE RAMP NEUTRAL AREA (ACCELERATION LANE) TREATMENT





ENTRANCE RAMP NEUTRAL AREA (MERGE) TREATMENT






LEGEND

MARKERS

-  TYPE CR CLEAR-RED RETROREFLECTIVE
-  TYPE YR YELLOW-RED RETROREFLECTIVE

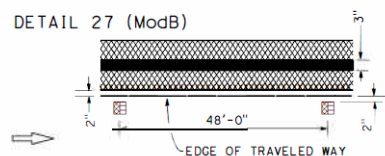
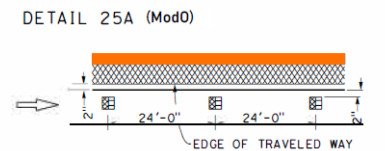
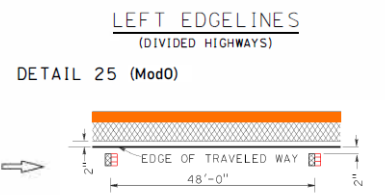
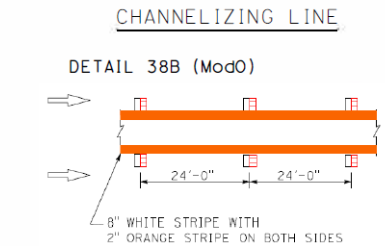
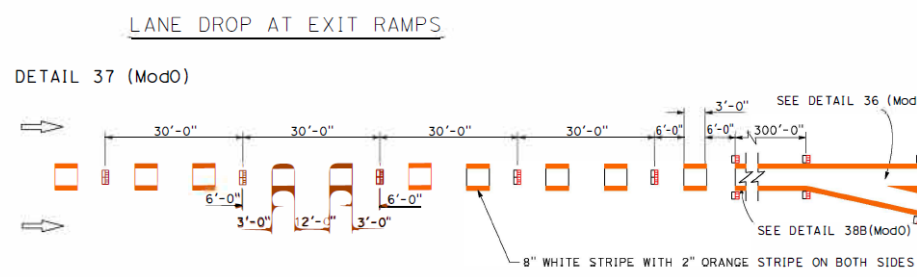
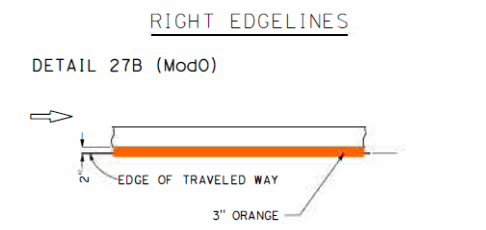
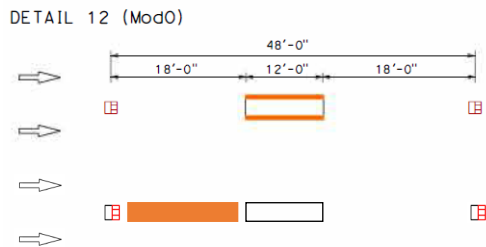
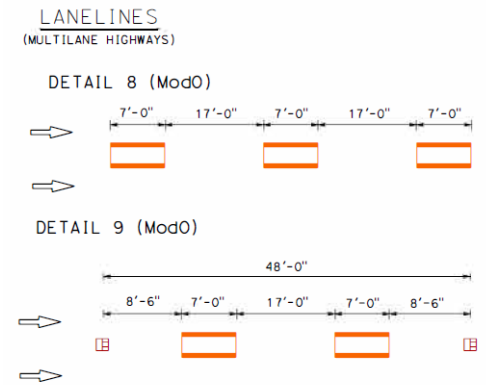
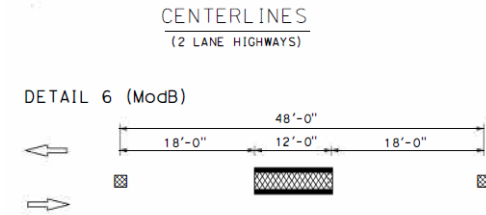
LEGEND

-  8" WHITE STRIPE WITH 2" ORANGE STRIPE ON BOTH SIDES
-  6" YELLOW STRIPE WITH 3" ORANGE
-  6" WHITE STRIPE WITH 3" ORANGE

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ORANGE CONTRASTED
PAVEMENT DELINEATION
DETAILS**

Left edgeline, right edgeline, lanelines and lane drop



- LEGEND**
- 6" WHITE STRIPE WITH 2" ORANGE STRIPE ON BOTH SIDES
 - 6" YELLOW STRIPE WITH 2" BLACK STRIPE ON BOTH SIDES
 - 6" YELLOW STRIPE ON BOTH SIDES OF 3" BLACK
 - 6" YELLOW STRIPE WITH 3" ORANGE
 - 6" WHITE STRIPE WITH 3" ORANGE

- LEGEND**
- MARKERS**
- TYPE CR CLEAR-RED RETROREFLECTIVE
 - TYPE D TWO-WAY YELLOW RETROREFLECTIVE
 - TYPE YR YELLOW-RED RETROREFLECTIVE

Alternative 1 lane line



Alternative 1 lane line



Alternative 2 lane line



Alternative 2 lane line



Left edgeline

