

California Traffic Control Devices Committee (CTCDC) Agenda Item Report



Meeting Date: August 7, 2025 Item Number: 24-15	From: Tasha Higgins, Caltrans
Sponsored By: Amjad Obeid, Caltrans	Presented By: Tasha Higgins and Johnny Bhullar, Caltrans
Description: The California Manual on Uniform Traffic Control Devices 2014 Revision 9 (CA MUTCD 2014R9) LA28 Supplement has been developed to prescribe uniform standards and specifications for all temporary traffic control device to be used during LA28 in locations specified by the supplement, in accordance with Section 21400 of the California Vehicle Code.	

Recommendation:

None.

Agency Making Request/Sponsor:

Tasha Higgins, Caltrans / Amjad Obeid, Caltrans

Background:

2028 Los Angeles Olympics and Paralympics (LA28), which includes the Summer Olympics (July 14-30, 2028) and Summer Paralympics (August 15-27, 2028), will establish a Games Route Network (GRN) with dedicated lanes for Olympic Games vehicles to travel between venues and ensure athletes and accredited persons make their events and venues on time. The GRN will utilize existing freeway/expressways, highways and local roads to provide a safe, fast, and reliable transportation system. All LA28 traffic control devices will be installed and placed temporarily, from June 1, 2028, to September 1, 2028.

During the Games, in order to facilitate the movement of athletes and Games personnel, some of the existing traffic control devices on roadways included in the established GRN will need to be changed temporarily to allow identification of the priority lanes that have been dedicated in GRN for athletes and Game personnel travel. This will be accomplished by using "LA28" white or black legend on light blue background as a sign plaque and sign panel, and "LA28" white legend on light blue or no color (pavement) background as a pavement marking.

The California Department of Transportation (Caltrans) has developed CA MUTCD 2014R9 LA28 Supplement to support Caltrans request to experiment (Item 25-15) with the use of light blue color as a background color for "LA28" word message, as a unique identifier to draw attention to the plaques, panels and pavement markings, to aid recognition and quicker comprehension of the dedicated lanes on GRN roadways to facilitate travel during LA28 games. Caltrans has requested the Federal



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Highway Administration (FHWA) to review and approve the CA MUTCD 2014R9 LA28 Supplement, to allow Caltrans to attach it as a supporting document with the experimentation request.

Attachments:

Attachment A – Letter to FHWA, CA Division

Attachment B – CA MUTCD 2014R9 LA28 Supplement

ATTACHMENT A



California Traffic Control Devices Committee (CTCDC) Agenda Item Report



Attachment A – Letter to FHWA, CA Division

CALIFORNIA STATE TRANSPORTATION AGENCY

GAVIN NEWSOM, GOVERNOR

California Department of Transportation

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June 23, 2025

Mr. Doug Hecox, Acting California Division Administrator
Attn: Christopher Long, Design Program Manager, Technical Services Unit
Federal Highway Administration
650 Capitol Mall, Suite 4-100
Sacramento, CA 95814

Mr. Hecox:

A Games Route Network (GRN) will be established for the 2028 Los Angeles (LA28) Olympic (July 14 – 30, 2028) and Paralympic (August 15 – 27, 2028) Games. The GRN provides dedicated lanes for Olympic Games vehicles to travel between venues to ensure that athletes and accredited persons arrive to their events on time. The GRN will utilize existing freeways, expressways, highways, and local roads to provide a safe, fast, and reliable transportation system.

During the Games, to facilitate the movement of athletes and Games personnel, some of the existing traffic control devices on roadways included in the established GRN will need to be changed temporarily to allow identification of the priority lanes that have been dedicated in GRN for athletes and Game personnel travel. This will be accomplished by using "LA28" white or black legend on light blue background as a sign plaque, sign panel, and as a pavement marking. All LA28 traffic control devices will be installed and placed temporarily, from June 1, 2028 to September 1, 2028.

The California Department of Transportation (Caltrans) has developed the California Manual on Uniform Traffic Control Devices (CA MUTCD) 2014 Revision 9 LA28 Supplement to support Caltrans' request to experiment with the use of the light blue color as a background color for the "LA28" word message, as a unique identifier to draw attention to the plaques, panels and pavement markings, to aid recognition and quicker comprehension of the dedicated lanes on GRN roadways to facilitate travel during the Games. Caltrans requests that the Federal Highway Administration (FHWA) review and approve the CA MUTCD 2014 Revision 9 LA28 Supplement.

Caltrans would like to acknowledge the efforts of Mr. Steve Pyburn of the FHWA California Division for working in partnership with Amjad Obeid and Johnny Bhullar of

"Provide a safe and reliable transportation network that serves all people and respects the environment"

ATTACHMENT B



California Traffic Control Devices Committee (CTCDC)
Agenda Item Report



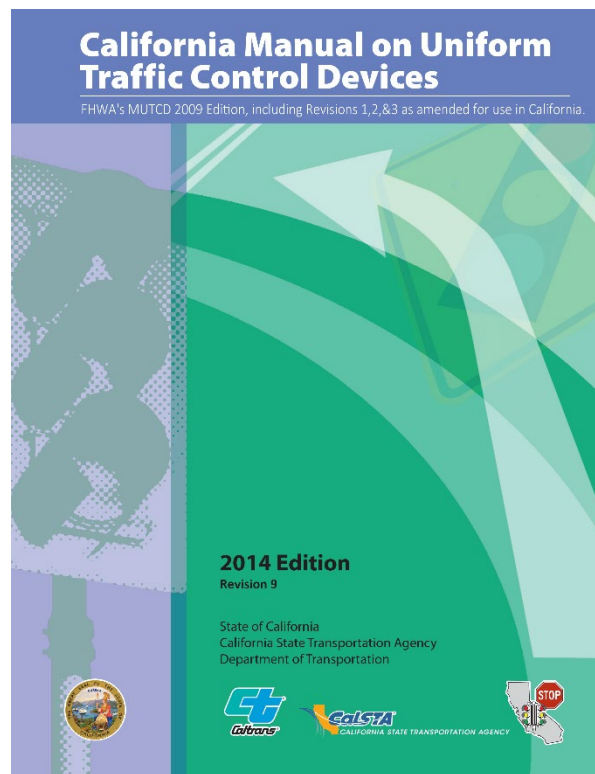
Attachment B – CA MUTCD 2014R9 LA28 Supplement

See Following Pages

CA MUTCD 2014 Revision 9

(National MUTCD 2009 (Revisions 1, 2 & 3))

Los Angeles 2028 Olympics & Paralympics (LA28) Supplement



June 23, 2025

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Acknowledgments

Caltrans gratefully acknowledges the participation from the following contributors for providing invaluable time, support, guidance and direction in the development of this CA MUTCD 2014R9 LA28 Supplement:

- Federal Highway Administration's California Division
- California Traffic Control Devices Committee (CTCDC) members
- Staff from various cities, counties and transit authorities involved with the Games Route Network in California
- Caltrans Headquarters' and District 7 staff
- LA 28 project team

Information regarding this CA MUTCD 2014R9 LA28 Supplement can be obtained by writing to:

State of California, Department of Transportation
Chief, Division of Safety Programs, MS-36
1120 N Street, Sacramento, CA 95814

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The CA MUTCD 2014R9 LA28 Supplement is available on the Caltrans Web Page at:

<https://dot.ca.gov/programs/safety-programs/camutcd>

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CA DIVISION REQUESTING REVIEW AND DETERMINATION OF CA
MUTCD 2014R9 LA28 SUPPLEMENT TO BE IN SUBSTANTIAL
CONFORMANCE WITH THE NATIONAL MUTCD 2009 EDITION*

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FHWA CA DIVISION FINDING CA MUTCD 2014R9 LA28
SUPPLEMENT TO BE IN SUBSTANTIAL CONFORMANCE WITH THE
NATIONAL MUTCD 2009 EDITION*

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REQUESTING PERMISSION TO EXPERIMENT - FOR LA28
PANEL/PLAQUE & PAVEMENT MARKING*

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REQUESTING PERMISSION TO EXPERIMENT - FOR LA28
PANEL/PLAQUE & PAVEMENT MARKING*

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APPROVAL FROM FHWA ON PERMISSION TO EXPERIMENT -
FOR LA28 PANEL/PLAQUE & PAVEMENT MARKING*

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RECOMMENDATION FROM CTCDC ON PERMISSION TO
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PLEASE NOTE:

This CA MUTCD 2014R9 Supplement LA28 includes contents that are only additional to the current CA MUTCD 2014 Revision 8. The current CA MUTCD 2014 Revision 8 is current and effective, it should be referenced for all topics and contents.

In some instances, a portion of the current CA MUTCD contents have been included in this document, for ease in understanding them. To clarify any confusion that may occur on these overlapping contents, following format is used:

- Unedited National MUTCD text is shown in **“Times New Roman” font and black color text.**
- National MUTCD text not applicable in California is shown as **~~strikethrough text~~**
-
- CA MUTCD 2014 Revision 8 text is shown in **“Arial Narrow” font and blue color text.**
-
- This CA MUTCD 2014R9 LA28 Supplement’s text is shown in **“Arial Narrow” font and dark purple color text.**

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CA MUTCD 2014R9 LA28 Supplement

INTRODUCTION

The following is added to the Introduction:

Support:

- 01 2028 Los Angeles Olympics and Paralympics (LA28), which includes the Summer Olympics (July 14-30, 2028) and Summer Paralympics (August 15-27, 2028), will establish a Games Route Network (GRN) with dedicated lanes for Olympic Games vehicles to travel between venues and ensure athletes and Game personnel get to their events and venues on time. The GRN will establish a temporary network of roads, freeways, expressways, highways, arterials, local roads, and managed lanes to provide a safe, fast, and reliable transportation system.
- 02 During the Games, in order to facilitate the movement of athletes and Games personnel, some of the existing traffic control devices on roadways included in the established GRN will need to be changed temporarily, to allow identification of the priority lanes that have been dedicated in GRN for athletes and Game personnel travel. This will be accomplished by using "LA28" white legend or black legend on light blue background as a sign plaque, sign panel and using it as a word message pavement marking. National MUTCD has not assigned the meaning of light blue color, currently, it has reserved it for future designation. Any use of light blue color on a traffic control device will not be in compliance with the MUTCD, requiring permission to experiment. At some locations, in addition to the LA28 sign plaque or panel, the "PERMIT ONLY" black legend on white background will also be used as a sign plaque or sign panel and in white legend as a pavement marking.
- 03 To save costs, expedite implementation and for fiscal responsibility, since the change is needed temporarily, instead of removing existing signs and installing new or special traffic signs, most of the changes will be limited to changing existing traffic signs. New signs will be used only when existing signs are not available at the location or impractical to change. The "LA28" sign plaque will be added to some of the existing traffic signs, a portion of some traffic signs will be overlaid with the "LA28" panel, while some of the traffic signs would be covered during the games. The PERMIT ONLY plaque and panel will be used in conjunction with the LA28 plaque or panel, on some of the traffic signs. The "LA28" pavement markings, in conjunction with, or without, the PERMIT ONLY pavement markings will be installed in some lanes of the GRN roadways. All LA28 related traffic control devices, including devices covered by this experiment request, will be installed and placed temporarily, from June 1, 2028, to September 1, 2028, covering both, the 2028 Summer Olympics (July 14-30, 2028) and Summer Paralympics (August 15-27, 2028) games.
- 04 2028 Los Angeles Olympics and Paralympics (LA28) being an atypical large-scale special event, it necessitates the use of unique identifier, to draw attention to the LA28 traffic signs and pavement markings. Using "LA28" white legend on light blue background serves this purpose by aiding recognition and quicker comprehension of the dedicated lanes on GRN roadways to facilitate travel during LA28 games, while keeping the message simple. Using the light blue color for the background was chosen as this color is already included in the National Manual on Uniform Traffic Control Devices (MUTCD) and has been identified as being appropriate for use in conveying traffic control information. The light blue color in the MUTCD is reserved for future designation, and not assigned any specific purpose. The proposed use of the light blue color during the Games does not comply with the National MUTCD, it requires approval to experiment from FHWA.
- 05 Caltrans has prepared a request for permission to experiment for the use of light blue color as the background color on LA28 sign plaques and sign panels, and LA28 word message pavement markings. The use of LA28 and PERMIT ONLY word messages, whether used on traffic sign plaques, traffic sign panels or pavement markings, do not require experimentation as the use of word messages complies with the National MUTCD. Agencies are allowed to develop special word legend signs based on engineering judgment, and unlike colors that have not been assigned, or symbols that have not been approved for signs, new word legend signs can be used without the need for experimentation.
- 06 This California (CA) Manual on Uniform Traffic Control Devices (MUTCD) 2014R9 LA28 Supplement is issued in support of Caltrans request for experimentation to Federal Highway Administration (FHWA) for the non-standard use of light blue color as the background color for "LA28" white, or black legend word message sign plaques, sign panels and LA28 white legend word message pavement markings, planned to be used during this large-scale special event on the network of roads, freeways, highways, arterials and specific managed lanes included in the established GRN. Caltrans request for permission to experiment is specifically for the use of light blue color as the background color for the "LA28" word message.
- 07 This CA MUTCD 2014R9 LA28 Supplement incorporates Federal Highway Administration's Manual on Uniform Traffic Control Devices 2009 (Revisions 1,2 & 3) and the current California MUTCD 2014 Revision 9 and standards and specifications for all traffic control devices used in dedicated lanes on GRN roadways to facilitate travel during LA28 games.

- 08 In general, the CA MUTCD 2014R9 LA28 Supplement contents correlate to the CA MUTCD (and National MUTCD) Parts, Chapters and Sections in the same sequence, heading and numbering and retain the same titles. In instances where there is no corresponding Section, Figure or Table in the CA MUTCD or National MUTCD for a topic in the CA MUTCD 2014R9 LA28 Supplement, the topic is given a number that will begin with 1000 and include “LA28” in parentheses to indicate that it is specific only for LA28.
- 09 The CA MUTCD 2014R9 LA28 Supplement includes only the additional section, figure and table contents that are needed for use on GRN roadways during the Los Angeles 2028 Summer Olympics and Paralympics competition as part of the experimentation request. Current CA MUTCD, including its section, figure and table contents, will be used for all traffic control devices used on GRN roadways during Los Angeles 2028 Summer Olympics and Paralympics. CA MUTCD 2014R9 LA28 Supplement provides only additional contents that are specific to dedicated lanes on GRN roadways and for use only during the Los Angeles 2028 Summer Olympics and Paralympics to support the experimentation request.

PART 1

GENERAL

CHAPTER 1A. GENERAL

Section 1A.12 Color Code

The following is added to this section:

Standard:

- 03 **The general meaning of the 13 colors shall be as follows:**

H. Light Blue—~~unassigned~~ temporary use as background color for LA28 word message on sign plaque, sign panels and pavement marking installed on roadways in GRN during the Olympic games.

Support:

- 04 These color codes establish general meanings for these colors and have been identified as being appropriate for use in conveying traffic control information.
- 05 The purpose of using light blue color as a background color for LA28 word message, as a unique identifier to draw attention to the traffic sign plaques, traffic sign panels and pavement markings, is to aid recognition and quicker comprehension of the dedicated lanes on GRN roadways to facilitate travel during LA28 games. The use of light blue color as background color will provide clear and consistent color scheme for messaging of the dedicated lanes on GRN roadways and will match the publicizing theme for the games.
- 06 Tolerance limits for light blue color are not contained in 23 CFR Part 655, Appendix to Subpart F which is available at the Federal Highway Administration's MUTCD Web site at <http://mutcd.fhwa.dot.gov>. The color design and chromaticity of the specific light blue color will be determined at a later date and will be subject to approval as part of the experiment.
- 07 Since the light blue color is included in the MUTCD, this color aspect of the traffic control device is not protected by a patent, trademark, or copyright in accordance with MUTCD requirements. The color aspect of the traffic control device is in the public domain and can be used freely in traffic control device design and application without infringement or claim of trade secret misappropriation. Caltrans is aware that if patent, trademark, or copyright protection is established in the future for the light blue color aspect of the traffic control device or application, such action will result in cancellation of the authorization for experimentation.
- 08 This CA MUTCD 2014R9 LA28 Supplement is issued in support of Caltrans request for experimentation to FHWA is specifically for the use of light blue color as the background color for the "LA28" word message. Some of the other colors that were considered, and not selected, were purple, coral, yellow, orange and fluorescent pink. If Caltrans receives guidance from FHWA in response to this experimentation request, to use another color and not the requested light blue color, then Caltrans will proceed with FHWA's suggested color.
- 09 Caltrans plans to engage Caltrans Headquarters Division of Research and Information Systems and Headquarters Transportation Laboratory to conduct an off-roadway, closed-course or laboratory evaluation and study to identify and test different color coordinates (see Figure 1A-101(LA28)) to identify the light blue color that will be used as the background color during the games. This testing to identify the light blue color will be conducted in advance of the games, and not during the games to avoid road user confusion and related safety concerns during the games.

Section 1A.13 Definitions of Headings, Words, and Phrases in this Manual

The following is added to this section:

Standard:

- 04 **The following words and phrases, when used in this Manual, shall have the following meanings:**
- 78a. Games Route Network (GRN) – Network of existing roads connecting Los Angeles 2028 Summer Olympics and Paralympics competition and key non-competition venues involving a wide range of traffic management measures. As per California Vehicle Code Section (Not available, pending legislative action), vehicles with a permit only will be allowed to use the dedicated lanes on roadways in GRN.**
- 80a. GRN Lane(s) - Specific preferential lanes that are used as dedicated lane(s) for Olympic Games vehicles to travel between venues and are included in the established GRN.**

Section 1A.14 Meanings of Acronyms and Abbreviations in this Manual

The following is added to this section:

Support:

- 02 The following list of acronyms are related to traffic control devices and provided for ease of use and as a handy reference:

81a.	GRN	Games Route Network
104a.	LA28	Los Angeles 2028 Olympics and Paralympics

- 03 The acronym “LA28” refers to the name of the event, named by the host city plus the 2-digit year (e.g., Paris24). Abbreviating the year allows the word message to be as brief as practical while keeping it simple, allowing for easier accommodation when used on the plaque, panel or as word message pavement marking.

Section 1A.15 Abbreviations Used on Traffic Control Devices

The following is added to this section:

Standard:

- 03a When the word messages shown in Table 1A-2(LA28) need to be abbreviated on a changeable message sign or portable changeable message sign, the abbreviations shown in Table 1A-2(LA28) will be used.

Figure 1A-101(LA28) Testing to Identify Color Specifications for Light Blue Color

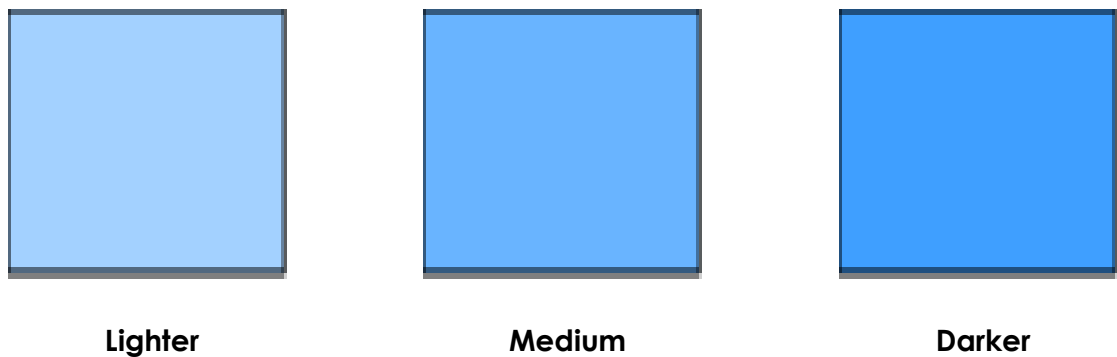


Table 1A-2(LA28) Abbreviations That Shall be Used Only on Changeable or Portable Changeable Message Signs

Word Message	Standard Abbreviation	Prompt Word That Should Precede the Abbreviation	Prompt Word That Should Follow the Abbreviation	Example
Los Angeles 2028	LA28		Permit (Optional)	LA28 PERMIT ONLY
PERMIT ONLY	PERMIT ONLY	LA28		LA28 PERMIT ONLY

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PART 2

SIGNS

CHAPTER 2A. GENERAL

Section 2A.01 Function and Purpose of Signs

The following is added to this section:

Standard:

- 03 The provisions of Part 2 regarding signs in general (Chapter 2A), regulatory signs (Chapters 2B and 2G), guide signs (Chapters 2D, 2E and 2G) and changeable message signs (Chapter 2L) shall apply to all roadways included in the established GRN in locations specified by Caltrans experimentation request to FHWA.

Section 2A.03 Standardization of Application

The following is added to this section:

Guidance:

- 06 The LA28 sign plaque and LA28 sign panel should be used only where deemed necessary or desirable and justified by engineering judgment, as provided in Sections 1A.09 and 1A.13 Paragraph #03 and phrase #64.
- Option:
- 07 The LA28 sign plaque and the LA28 sign panel (see Figure 2A-101(LA28)) may be used on any existing or new regulatory or guide sign included in this CA MUTCD 2014R9 LA28 Supplement, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.
- 08 If used, the LA28 sign plaque and the LA28 sign panel may be combined with the word message PERMIT ONLY in black legend on a white background at some locations, where engineering judgment determines it is needed.

Standard:

- 09 If the Transportation Demand Management (TDM) strategies implemented in the established GRN, require regulatory or operational measures different than those existing, the existing permanent regulatory and guide signs that are no longer applicable, and potentially could be confusing or misleading, they shall be covered or removed and superseded by the appropriate temporary regulatory or guide signs during the games.
- 10 The LA28 sign plaque and the LA28 sign panel shall be rectangular and shall consist of the word message "LA28" in white legend on a light blue background. The LA28 legend shall be a single line for horizontal configuration. The LA28 legend for the vertical configuration shall be 2 lines, with LA legend in line 1 and 28 legend in line 2.
- 11 If used, the LA28 sign plaque shall be added as a header plaque above any existing or new regulatory or guide sign included in this CA MUTCD 2014R9 LA28 Supplement, to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.
- 12 If used, the LA28 sign panel shall be used as a header panel and affixed to the face of a sign to overlay a portion of any existing or new regulatory or guide sign included in this CA MUTCD 2014R9 LA28 Supplement, to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games. If using the LA28 sign header panel in the horizontal configuration, it shall be placed in the top portion of the regulatory or guide sign. If using the LA28 sign header panel in the vertical configuration, it shall be placed on the top left edge of the regulatory or guide sign.
- 13 The LA28 sign plaque and LA28 sign panel, each shall not be used alone.
- Support:
- 14 If signs using LA28 sign plaque or LA28 sign panel are needed to be installed at new locations to identify GRN dedicated lanes during LA28, refer to Section 2A.16 in current CA MUTCD 2014R9.

Section 2A.04 Excessive Use of Signs

The following is added to this section:

Guidance:

- 04 Installing new signs, including new signs at new locations to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games, should be avoided for fiscal responsibility and to avoid excessive signing and removal of these signs after the games. To save costs and expedite implementation, since the change is needed temporarily, opportunities to use LA28 sign plaque and LA28 sign panel with the existing traffic signs should be considered, if signing is needed.

Section 2A.06 Design of Signs

The following is added to this section:

Support:

02a In the specifications for the individual regulatory or guide signs included in this CA MUTCD 2014R9 LA28 Supplement, the general appearance of the legend, color, and size are shown in the CA MUTCD 2014R9 tables and illustrations and the sign specifications, and are not always detailed in the text.

03a Detailed drawings of these standard regulatory and guide signs, alphabets, symbols, and arrows (see CA MUTCD 2014R9 Figures 2D-2 and 2D-2(CA)) are shown in the “Standard Highway Signs and Markings” book. CA MUTCD 2014R9 Section 1A.11 contains information regarding how to obtain this publication.

Standard:

06a **The term legend shall include LA28 and PERMIT ONLY word messages for use on the sign plaque and as part of the sign panel to convey specific meaning.**

07a **Uniformity in design of the LA28 and PERMIT ONLY sign plaque and sign panel shall include shape, color, dimensions, legends, borders, and illumination or retroreflectivity.**

08a **Standardization of these sign plaque and sign panel does not preclude further improvement by minor changes in the proportion, width of borders, or layout of word messages, but all shapes and colors shall be as indicated.**

Support:

09a The appropriate legend color combination of the LA28 sign plaque and the LA28 sign panel, whether to use white legend with the light blue color background or black legend with the light blue color background, will be determined at a later date and will be subject to FHWA approval as part of the experimentation request. Since the tolerance limits for light blue color are not contained in 23 CFR Part 655, Appendix to Subpart F, and FHWA has not issued color specifications for the light blue color, these tolerance limits haven't been established and aren't available for use. Caltrans will need to determine and identify the tolerance limits for the light blue color as an initial first step within this experimentation request, before evaluating which legend color combination provides better contrast with the background color. Not knowing the tolerance limits of light blue color, and until they are established, it is not clear as to which legend color, black or white, may provide better contrast for the sign plaque and sign panel.

09b Caltrans will engage Caltrans Headquarters Division of Research and Information Systems and Headquarters Transportation Laboratory to conduct an off-roadway, closed-course or laboratory evaluation and study to determine the color tolerances and color combinations that provide better contrast. This evaluation study will test the use of legend color, black and white, for the LA28 word message (see Figure 2A-102(LA28)) on Caltrans identified light blue color as the background color. The study will evaluate which color combination provides better contrast, when used on LA28 Sign Plaque and Sign Panel. This evaluation and testing will be the second initial step within this experimentation request, in advance of the actual deployment under this experimentation request of the sign plaques and sign panels during the games. The reason for conducting this determination or test for the legend color in advance, is that white color may not provide adequate contrast with the light blue color tolerance limits that are selected by Caltrans. Depending on the color coordinates chosen for the identified light blue color, black color used as legend color could provide better contrast than white color, when used on light blue color background.

09c Any field testing, if needed, will be conducted within Caltrans Maintenance Yard or Caltrans facility, to determine the appropriate legend and background color combination, that provides better contrast for the LA28 word message, when used on sign plaques and sign panels. The decision to use legend color, black or white, for LA28 word message on the light blue colored background will be made in advance of the games and not during the games to avoid road user confusion and related safety concerns during the games. Only one color, either black or white, will be used as the legend color in the actual experiment during the games.

Section 2A.07 Retroreflectivity and Illumination

The following is added to this section:

Standard:

02a **The LA28 Sign Plaque and Sign Panel shall be retroreflective (see Section 2A.08) or illuminated to show the same shape and similar color by both day and night.**

Option:

05a Retroreflection of LA28 Sign Plaque and Sign Panel elements may be accomplished by the means shown in Table 2A-5(LA28).

Standard:

10a **The uniformity of the sign design shall be maintained without any decrease in visibility, legibility, or driver comprehension during either daytime or nighttime conditions.**

Section 2A.09 Shapes

The following is added to this section:

Standard:

- 02 The standard shapes and standard proportions of existing regulatory and guide sign that are temporarily changed during LA28, shall be retained as much as practical, and comply with Table 2A-4.

Section 2A.10 Sign Colors

The following is added to this section:

Standard:

- 07 The light blue color to be used as background color on LA28 sign plaque, LA28 sign panel and LA28 pavement markings and its specific use on these sign plaques, sign panels and pavement markings shall be as provided in the applicable Sections of this CA MUTCD 2014R9 LA28 Supplement.

Support:

- 08 Tolerance limits for light blue color are not contained in 23 CFR Part 655, Appendix to Subpart F which is available at the Federal Highway Administration's MUTCD Web site at <http://mutcd.fhwa.dot.gov>. The color design and chromaticity of the specific light blue color will be determined by Caltrans subject to approval by FHWA of the experimentation request. Caltrans plans to engage Caltrans Headquarters Division of Research and Information Systems and Headquarters Transportation Laboratory to conduct an off-roadway, closed-course or laboratory evaluation and study to identify and test different color coordinates (see Figure 1A-101(LA28)) to identify the light blue color that will be used as the background color during the games.
- 09 The use of light blue color is shown in Table 2A-5(LA28). Color schemes using light blue color on specific signs are shown in the illustrations located in this CA MUTCD 2014R9 LA28 Supplement.

Section 2A.11 Dimensions

The following is added to this section:

Guidance:

- 09 When LA28 sign plaque or LA28 sign panel are installed with larger sized signs, a corresponding increase in the size of the plaque or the panel and its legend should also be made. The resulting plaque or panel size should be approximately in the same relative proportion to the larger-sized sign as the conventional sized plaque or panel is to the conventional-sized sign.

Standard:

- 10 The LA28 and PERMIT ONLY legends used on sign plaques and sign panels shall have letters and numerals that comply with the minimum height requirements shown in the Tables included in CA MUTCD 2014R9 for the roadway classifications and the specific signs that they supplement.

Section 2A.12 Symbols

The following is added to this section:

Standard:

- 01a The LA28 Sign Plaque and Sign Panel shall not include any Olympic games, Para-Olympics symbol or any other symbol. The Olympic rings symbol shall not be used on, as part of, or in conjunction with the LA28 Sign Plaque or Sign Panel as its use is prohibited under the copyright laws.

Support:

- 13 The Olympic rings represent only one of the two games that Los Angeles will be hosting during the time period covered under Caltrans experimentation request. Los Angeles will also be hosting the Paralympic Games. The International Paralympic Committee (IPC) is a complete separate organization with a different name, logo, and organizing body.

Section 2A.13 Word Messages

The following is added to this section:

Standard:

- 16 Except as provided in Paragraph 17, the LA28 sign plaque and LA28 sign panel shall include only the legend "LA28" as a word message.

Option:

- 17 The LA28 sign plaque and the LA28 sign panel may be combined with the word message PERMIT ONLY at some locations, where engineering judgment determines it is needed.

Standard:

- 18 The LA28 and PERMIT ONLY lettering used on sign plaque and sign panel shall be in upper-case letters and shall be of the Standard Alphabets as provided in the "Standard Highway Signs" publication (see Section 1A.11. The unique letter forms used, shall not be stretched, compressed, warped, or otherwise manipulated.

Support:

- 19 Section 2D.04 contains information regarding the acceptable methods of modifying the length of a word for a given letter height and series for guide signs.

Section 2A.15 Enhanced Conspicuity for Standard Signs

The following is added to this section:

Support:

- 05 This CA MUTCD 2014R9 LA28 Supplement is issued in support of Caltrans request for experimentation to FHWA is specifically for the use of light blue color as the background color for the "LA28" word message. The purpose of using light blue color as a background color for LA28 word message, is as a unique identifier to draw attention to the traffic sign plaques, traffic sign panels and pavement markings, and to aid recognition and quicker comprehension of the dedicated lanes on GRN roadways to facilitate travel during LA28 games.
- 06 Some of the other methods that were considered to enhance conspicuity of the LA28 Sign word message, and not selected, were diagonally-striped black and yellow strip border, red or orange flags, warning beacon, rectangular rapid flashing beacon, light-emitting diode (LED) and colored strip on sign supports. If Caltrans receives guidance from FHWA in response to this experimentation request, to use another method and not the requested light blue color, then Caltrans will proceed with FHWA's suggested method.

Section 2A.16 Standardization of Location

The following is added to this section:

Guidance:

- 09a *If engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games, at either existing sign locations or new locations with no signs, and space is limited for sign installation and there is a demand for several different types of signs, an order of priority for sign installation should be established so as not to overload road users with too much information.*
- 10a *Because regulatory information is more critical to the road user than guidance information, any regulatory signs using LA28 sign plaque or LA28 sign panel whose location is critical should be displayed rather than guide signs that are using LA28 sign plaque or LA28 sign panel, in cases where conflicts occur. Information of a less critical nature should be moved to less critical locations or omitted.*

Section 2A.17 Overhead Sign Installations

The following is added to this section:

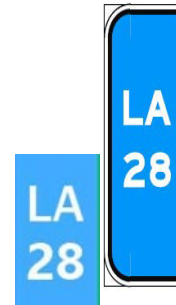
Option:

- 01a The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing regulatory or guide Overhead signs on freeways and expressways, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Figure 2A-101(LA28). LA28 and PERMIT ONLY Plaques and Panels



LA28 Plaque/Panel (Horizontal)



LA28 Plaque/Panel (Vertical)



PERMIT ONLY Plaque



LA28 PERMIT ONLY Panel

Figure 2A-102(LA28) Testing to Identify Legend/Background Color Combination

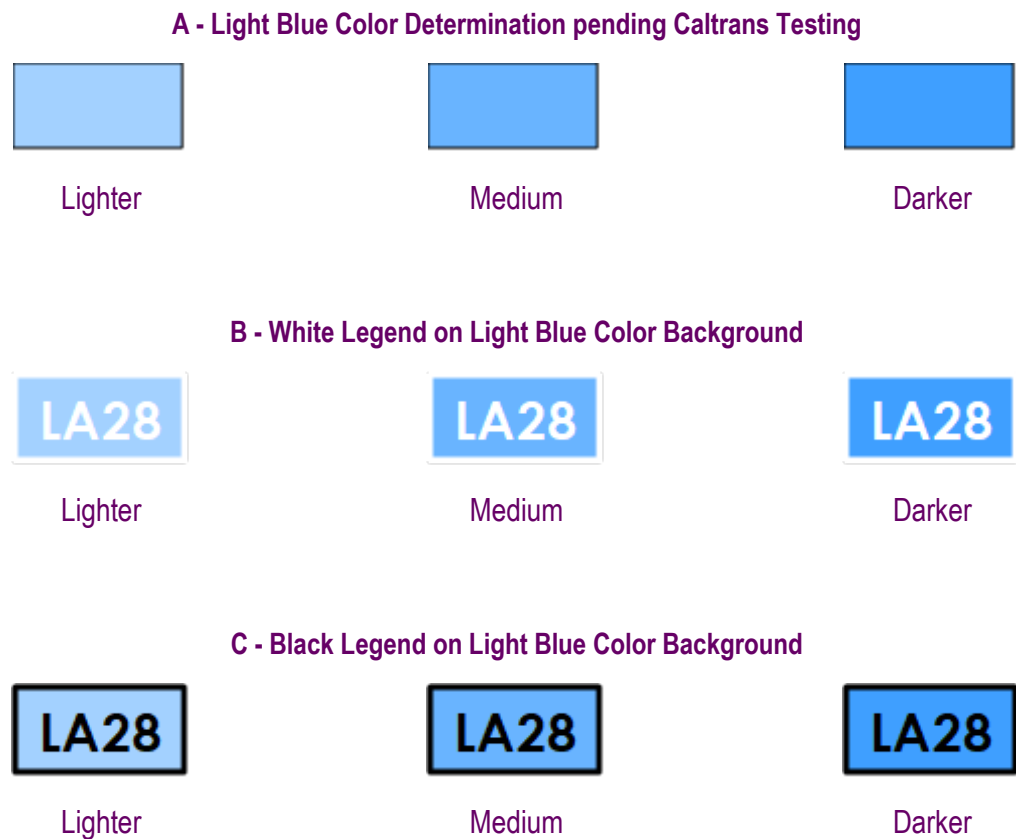


Table 2A-5(LA28). Common Uses of Sign Colors

Type of Sign	Legend									Background													
	Black	Green	Red	White	Yellow	Brown	Orange	Fluorescent Yellow-Green	Fluorescent Pink	Black	Blue	Brown	Green	Orange	Red	White	Yellow	Fluorescent Yellow-Green	Fluorescent Pink	Cream	Teal	Light Blue	Purple
LA28	X			X																		X	
PERMIT ONLY	X			X												X							

** - The use of light blue on signs is restricted to LA28 word message and per the provisions of this Supplement.

CHAPTER 2B. REGULATORY SIGNS, BARRICADES, AND GATES

Section 2B.01 Application of Regulatory Signs

The following is added to this section:

Standard:

- 09 The LA28 sign plaque and the LA28 sign panel combined with the word message PERMIT ONLY in black legend on a white background shall only be used on signs in GRN dedicated lanes, on which the GRN permit requirements and restrictions are applicable. These signs with the combined LA28 and PERMIT ONLY sign plaques or sign panels shall be installed at or near where the restriction applies.

Section 2B.03 Size of Regulatory Signs

The following is added to this section:

Standard:

- 01a Except as provided in Section 2A.11, the sizes for any new installations of regulatory signs to identify dedicated lanes on GRN roadways shall be as shown in Table 2B-1 and 2B-1(CA) of CA MUTCD 2014R9.

Section 2B.18 Movement Prohibition Signs (R3-1 through R3-4, R3-18, and R3-27)

The following is added to this section:

Option:

- 16 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Movement Prohibition signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.
- Support:
- 17 Refer to Figures 2B-4, 2B-4(CA) for Movement Prohibition signs and 2B-4(LA28) and 2G-1(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the regulatory signs.

Section 2B.19 Intersection Lane Control Signs (R3-5 through R3-8)

The following is added to this section:

Option:

- 17 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Intersection Lane Control signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.
- Support:
- 18 Refer to Figures 2B-4, 2B-4(CA) for Intersection Lane Control signs and 2B-4(LA28) and 2G-1(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the regulatory signs.

Section 2B.20 Mandatory Movement Lane Control Signs (R3-5, R3-5a, R3-7, and R3-20)

The following is added to this section:

Option:

- 20 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Mandatory Movement Lane Control signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.
- Support:
- 21 Refer to Figures 2B-4, 2B-4(CA) for Movement Prohibition signs and 2B-4(LA28) and 2G-1(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the regulatory signs.

Section 2B.21 Optional Movement Lane Control Sign (R3-6)

The following is added to this section:

Option:

- 11 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Optional Movement Lane Control signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 12 Refer to Figures 2B-4, 2B-4(CA) for Movement Prohibition signs and 2B-4(LA28) and 2G-1(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the regulatory signs.

Section 2B.22 Advance Intersection Lane Control Signs (R3-8 Series)

The following is added to this section:

Option:

- 06 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Advance Intersection Lane Control signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 07 Refer to Figures 2B-4, 2B-4(CA) for Movement Prohibition signs and 2B-4(LA28) and 2G-1(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the regulatory signs.

Section 2B.25 BEGIN and END Plaques (R3-9cP, R3-9dP)

The following is added to this section:

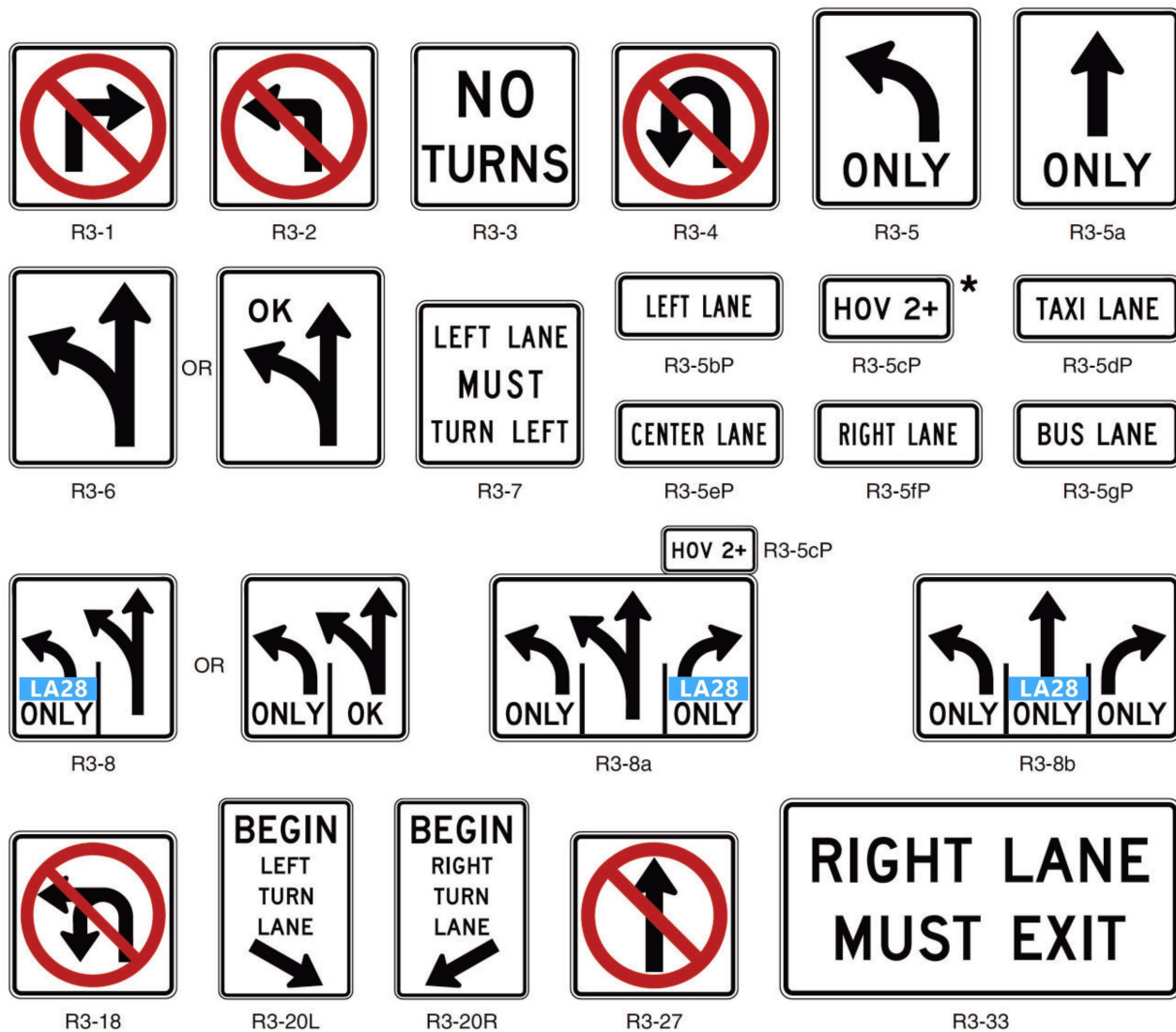
Option:

- 03 The BEGIN (R3-9cP) or END (R3-9dP) plaque may be used to supplement any regulatory sign that, based on engineering judgment, is being used to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games. The legend BEGIN or END may be used within the border of the main sign itself, or on an R3-9cP or R3-9dP plaque mounted immediately above it.

Support:

- 04 Refer to Figures 2B-4, 2B-4(CA), 2B-4(LA28), 2B-6 and 2G-1(LA28) for examples showing the BEGIN (R3-9cP) or END (R3-9dP) plaques and using the legend BEGIN or END within the border of the regulatory signs.

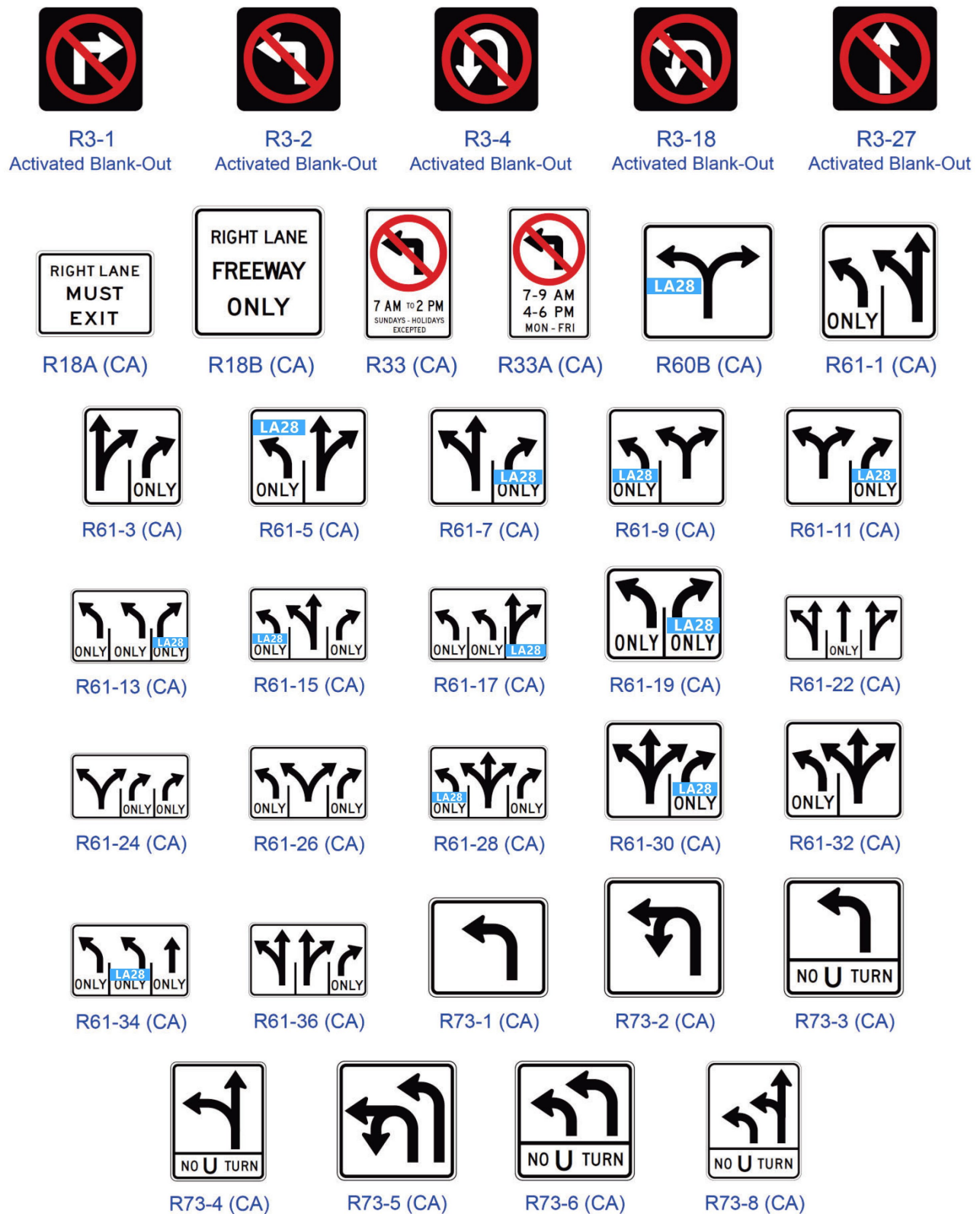
Figure 2B-4(LA28). Examples of LA28 Sign Panel usage on Lane Control Signs (Sheet 1 of 2)



* The diamond symbol may be used instead of the "HOV" word message. The minimum vehicle occupancy level may vary, such as 2+, 3+, 4+. The words "LANE" or "ONLY" may be used with this sign when appropriate.

NOTE: Refer to Figure 2G-1(LA28) for examples showing affixing of the LA28 white legend on light blue background sign panel to the face of Mandatory Movement Lane Control Signs.

Figure 2B-4(LA28). Examples of LA28 Sign Panel usage on Lane Control Signs (Sheet 2 of 2)



NOTE: Refer to Figure 2G-1(LA28) for examples showing affixing of the LA28 white legend on light blue background sign panel to the face of Mandatory Movement Lane Control Signs.

CHAPTER 2D. GUIDE SIGNS – CONVENTIONAL ROADS

Section 2D.02 Application

The following is added to this section:

Support:

- 04 Refer to Chapter 2A and Section 2A.03, amongst other topics included in this CA MUTCD 2014R9 LA28 Supplement and CA MUTCD 2014R9 for using guide signs to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Section 2D.03 Color, Retroreflection, and Illumination

The following is added to this section:

Support:

- 25 Refer to Chapter 2A and Sections 2A.07 and 2A.11, amongst other topics included in this CA MUTCD 2014R9 LA28 Supplement and CA MUTCD 2014R9 for using guide signs to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Section 2D.04 Size of Signs

The following is added to this section:

Standard:

- 09 Except as provided in Section 2A.11, the sizes for any new installations of guide signs to identify dedicated lanes on GRN roadways shall be as shown in Table 2D-1 and 2D-1(CA) of CA MUTCD 2014R9.

Section 2D.06 Size of Lettering

The following is added to this section:

Support:

- 07 Refer to Chapter 2A and Section 2A.06, 2A.11 and 2A.13, amongst other topics included in this CA MUTCD 2014R9 LA28 Supplement and CA MUTCD 2014R9 for using guide signs to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Section 2D.26 Advance Turn Arrow Auxiliary Signs (M5-1, M5-2, and M5-3)

The following is added to this section:

Option:

- 07 The LA28 sign plaque, including if it is combined with the word message PERMIT ONLY, may be used in conjunction with any existing Advance Turn Arrow Auxiliary signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.
- 08 The LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Advance Turn (G22(CA)) sign, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.
- Support:
- 09 Refer to Figures 2D-5 and 2D-5(CA) for Advance Turn Arrow Auxiliary signs and 2D-5(LA28), 2D-5(CA)(LA28) and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2D.27 Lane Designation Auxiliary Signs (M5-4, M5-5, and M5-6)

The following is added to this section:

Option:

- 03 The LA28 sign plaque, including if it is combined with the word message PERMIT ONLY, may be used in conjunction with any existing Lane Designation Auxiliary signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.
- Support:
- 04 Refer to Figures 2D-5 for Lane Designation Auxiliary signs and 2D-5(LA28) and 2G-6(LA28) for examples showing the sign plaque addition to the guide signs.

Section 2D.28 Directional Arrow Auxiliary Signs (M6 Series)

The following is added to this section:

Option:

- 06 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Directional Arrow Auxiliary signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 07 Refer to Figures 2D-5 and 2D-5(CA) for Directional Arrow Auxiliary signs and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2D.29 Route Sign Assemblies

The following is added to this section:

Option:

- 16 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Route Sign Assemblies, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 17 Refer to Figures 2D-6 and 2D-8 for Route Sign Assemblies and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2D.30 Junction Assembly

The following is added to this section:

Option:

- 07 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Junction Assemblies, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 08 Refer to Figures 2D-4 thru 2D-6 for Junction Assemblies and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2D.31 Advance Route Turn Assembly

The following is added to this section:

Option:

- 20 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Advance Route Turn Assemblies, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 21 Refer to Figures 2D-5 and 2D-5(CA) for Advance Route Turn Assemblies and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2D.32 Directional Assembly

The following is added to this section:

Option:

- 06 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Directional Assemblies, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 07 Refer to Figure 2D-6 for Directional Assemblies and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2D.33 Combination Lane-Use/Destination Overhead Guide Sign (D15-1)

The following is added to this section:

Option:

- 06 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Lane-Use/Destination Sign guide signs, where engineering judgment determines the need to identify dedicated lanes

on GRN roadways to facilitate travel during LA28 games.

Support:

- 07 Refer to Figures 2D-7 and 2D-7(CA) for Lane-Use/Destination Sign guide signs and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2D.35 Trailblazer Assembly

The following is added to this section:

Option:

- 12 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Trailblazer Assemblies, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 13 Refer to Figures 2D-3 thru 2D-7 and 2D-3(CA) thru 2D-7(CA) for Trailblazer Assemblies and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2D.37 Destination Signs (D1 Series)

The following is added to this section:

Option:

- 47 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Destination signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 48 Refer to Figures 2D-7 and 2D-7(CA) for Destination signs and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2D.45 Signing on Conventional Roads on Approaches to Interchanges

The following is added to this section:

Option:

- 14 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing guide signs on conventional roads on approaches to interchanges, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 15 Refer to Figures 2D-11 thru 2D-16(CA) for Destination signs and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2D.50 Community Wayfinding Signs

The following is added to this section:

Option:

- 43 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing or newly developed Community Wayfinding signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 44 Refer to Figures 2D-18 thru 2D-20(CA) for Community Wayfinding signs and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Figure 2D-5(LA28). Examples of LA28 Sign Plaque usage on Advance Turn Arrow Auxiliary Signs

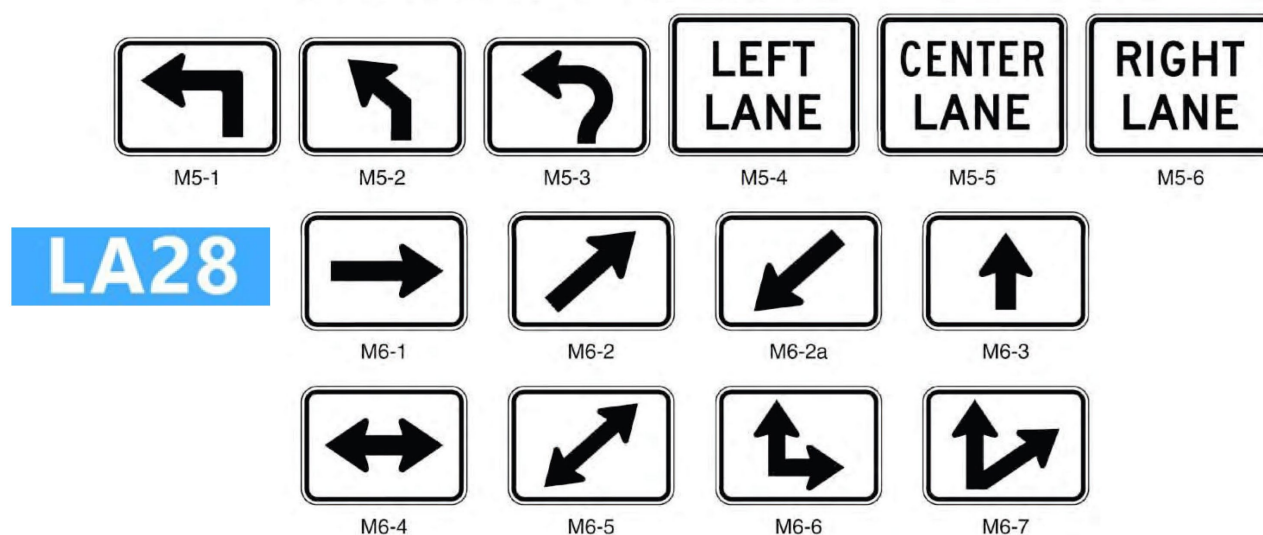


Figure 2D-5(CA)(LA28). Examples of LA28 Sign Plaque usage on Advance Turn Signs



CHAPTER 2E. GUIDE SIGNS – FREEWAYS AND EXPRESSWAYS

Section 2E.04 General

The following is added to this section:

Support:

- 03 Refer to Chapter 2A and Section 2A.03, amongst other topics included in this CA MUTCD 2014R9 LA28 Supplement and CA MUTCD 2014R9 for using guide signs to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Section 2E.05 Color of Guide Signs

The following is added to this section:

Support:

- 03 Refer to Chapter 2A and Section 2A.10, amongst other topics included in this CA MUTCD 2014R9 LA28 Supplement and CA MUTCD 2014R9 for using guide signs to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Section 2E.06 Retroreflection or Illumination

The following is added to this section:

Support:

- 05 Refer to Chapter 2A and Section 2A.07, amongst other topics included in this CA MUTCD 2014R9 LA28 Supplement and CA MUTCD 2014R9 for using guide signs to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Section 2E.12 Pull-Through Signs (E6-2, E6-2a)

The following is added to this section:

Option:

- 04 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Pull-Through signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 05 Refer to Figures 2E-2 and 2E-2(CA) for Pull-Through signs and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2E.25 Overhead Sign Installations

The following is added to this section:

Option:

- 02 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Overhead signs, where engineering judgment determines the need to identify GRN dedicated lanes to facilitate travel during LA28 games.

Support:

- 03 Refer to Figure 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2E.27 Route Signs and Trailblazer Assemblies

The following is added to this section:

Option:

- 09 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Route signs or Trailblazer Assemblies, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 10 Refer to Figures 2D-3 and 2D-8 and 2D-3(CA) thru 2D-7(CA) for Route signs and Trailblazer Assemblies and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2E.30 Interchange Guide Signs

The following is added to this section:

Option:

- 10 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Interchange Guide signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 11 Refer to Figures 2E-34 thru 2E-40 and 2E-34(CA) thru 2E-40(CA) for Interchange Guide signs and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2E.33 Advance Guide Signs

The following is added to this section:

Option:

- 20 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Advance Guide signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 21 Refer to Figures 2E-22 and 2E-22(CA) for Advance Guide signs and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2E.36 Exit Direction Signs

The following is added to this section:

Option:

- 19 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Exit Direction signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 20 Refer to Figures 2E-26 thru 2E-27 and 2E-26(CA) for Exit Direction signs and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2E.37 Exit Gore Signs (E5-1 Series)

The following is added to this section:

Option:

- 10 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Exit Gore signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 11 Refer to Figures 2E-28 and 2E-28(CA) for Exit Gore signs and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2E.40 Interchange Sequence Signs

The following is added to this section:

Option:

- 16 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Interchange Sequence signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 17 Refer to Figures 2E-30, 2E-31 and 2E-31(CA) for Interchange Sequence signs and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

CHAPTER 2G. PREFERENTIAL AND MANAGED LANE SIGNS

Section 2G.01 Scope

The following is added to this section:

Support:

- 10 Specific preferential lanes will be used to designate Olympic Games vehicles to travel between venues on roadways that are included in the established GRN during LA28 in locations specified by the supplement. Specific preferential lanes that are used as dedicated lane(s) for Olympic Games vehicles to travel between venues and included in the established GRN, are referred to as “GRN lane(s)” in this CA MUTCD 2014R9 LA28 Supplement.

Standard:

- 11 The provisions of Chapter 2G for regulatory and guide signs shall apply to all roadways included in the established GRN in locations specified by Caltrans experimentation request to FHWA.

Section 2G.03 Regulatory Signs for Preferential Lanes - General

The following is added to this section:

Standard:

- 31 The provisions of Sections 2G.03 through 2G.07 regarding regulatory signs for preferential lanes shall apply to GRN dedicated lanes operated at all times or at certain times based on the needs of established GRN to allow Olympic Games vehicles to travel between venues and ensure athletes and accredited persons make their events and venues on time. Such GRN lanes shall use changeable message signs or changeable message elements within static signs to display the appropriate regulatory sign messages only when they are in effect.

- 32 When certain types of vehicles (such as without LA28 permit) are prohibited from using a GRN lane or when a GRN lane is restricted to use by only certain types of vehicles (such as with a LA28 permit) during certain operational strategies, regulatory signs or regulatory panels within the appropriate guide signs that include changeable message elements shall be used to display the open/closed status of the managed lane for such vehicle types.

Option:

- 33 The LA28 sign plaque and the LA28 sign panel may be used on any regulatory sign included in this CA MUTCD 2014R9 LA28 Supplement, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

- 34 If used, the LA28 sign plaque and the LA28 sign panel may be combined with the word message PERMIT ONLY in black legend on a white background at some locations, where engineering judgment determines it is needed.

Standard:

- 35 Regulatory signs applicable only to a dedicated GRN lane shall be distinguished from regulatory signs applicable to general-purpose lanes by the inclusion of the legend “LA28” or “PERMIT ONLY” (see Figure 2G-1(LA28)). The legend “LA28” color shall be white and the background color for the legend shall be light blue. If used, the legend “PERMIT ONLY” color shall be black and the background color shall be white.

Support:

- 36 The word message and light blue color background displayed on a particular GRN Lane regulatory sign will vary based on the specific type of allowed traffic and on other related operational constraints that have been established for a particular lane.

Option:

- 37 Changeable message signs may supplement, substitute for, or be incorporated into static GRN Lane regulatory signs where travel conditions change or where multiple types of operational strategies (such as time of day requirements or vehicle types) are used and varied throughout the day or week, or on a real-time basis, to manage the use of, control of, or access to GRN lanes.

Standard:

- 38 When changeable message signs (see Chapter 2L) are used as regulatory signs for GRN lanes, they shall be the required sign size and shall display the required letter height and legend format that corresponds to the type of roadway facility and design speed.

Guidance:

- 39 When regulatory signs are used at new locations on conventional roads to dedicated lanes on GRN roadways to facilitate travel during LA28 games, the decision regarding whether to use a barrier-mounted, post-mounted, or overhead version of a particular type of sign should be based on an engineering judgment that considers the available space, the existing signs for the adjacent general-purpose traffic lanes, roadway and traffic characteristics, the proximity to existing overhead signs, the ability to install overhead signs, and any other unique local

factors.

- 40 If overhead regulatory signs applicable only to a GRN lane are located in approximately the same longitudinal position along the highway as overhead signs applicable only to the general-purpose lanes, the signs for the GRN lane should be separated laterally from the signs for the general-purpose lanes to the maximum extent practicable to minimize conflicting information, while maintaining their visual relationship to the lanes below necessitated by specific legend or arrows indicating lane assignment.

Guidance:

- 41 On conventional roadways, existing signage and new sign installation locations (if needed) spacing should be determined by engineering judgment based on speed, block length, distances from adjacent intersections, and other site-specific considerations.

Support:

- 42 The agencies that own and operate roadways included in the established GRN have the authority and responsibility to determine how they are operated and the GRN permit requirements.

- 43 Figures 2B-1001 (LA28), 2G-1008(LA28) through 2G-1012(LA28) illustrate the use of LA28 sign panels on regulatory signs for the beginning, along the length, and at the end of contiguous or buffer-separated GRN lanes that provide continuous access with the adjacent general purpose lanes.

Section 2G.04 Preferential Lane Vehicle Occupancy Definition Regulatory Signs (R3-10 Series and R3-13 Series)

Option:

- 13 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Preferential Lane Vehicle Occupancy Definition Regulatory signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 14 Refer to Figures 2G-1 and 2G-1(CA) for Preferential Lane Vehicle Occupancy Definition Regulatory signs and 2G-1(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the regulatory signs.

Section 2G.05 Preferential Lane Periods of Operation Regulatory Signs (R3-11 Series and R3-14 Series)

Option:

- 19 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Preferential Lane Periods of Operation Regulatory signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

- 20 On conventional roads, If signs using LA28 sign plaque or LA28 sign panel are needed to be installed at new locations to identify GRN dedicated lanes during LA28, post-mounted signs may be used in lieu of or in addition to overhead signs.

- 21 Additional overhead or post-mounted signs may be provided along the length of any type of dedicated lane(s) included in the established GRN.

Support:

- 22 If signs using LA28 sign plaque or LA28 sign panel are needed to be installed at new locations to identify GRN dedicated lanes during LA28, refer to Section 2A.16 in current CA MUTCD 2014R9.

Support:

- 23 Refer to Figures 2G-1, 2G-2, 2G-3 and 2G-1(CA) for Preferential Lane Periods of Operation Regulatory signs and 2G-1(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the regulatory signs.

Section 2G.06 Preferential Lane Advance Regulatory Signs (R3-12, R3-12e, R3-12f, R3-15, R3-15a, and R3-15d)

Option:

- 09 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Preferential Lane Advance Regulatory signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 10 If signs using LA28 sign plaque or LA28 sign panel are needed to be installed at new locations to identify GRN dedicated lanes during LA28, refer to Section 2A.16 in current CA MUTCD 2014R9.

Option:

- 11 Additional barrier-mounted, post-mounted or overhead GRN Lane Advance Regulatory signs (see Figure 2B-1001(LA28)) may be placed farther in advance of or closer to the beginning or initial entry points to a preferential lane.

Support:

- 12 Refer to Figures 2G-1, 2G-2, 2G-3 and 2G-1(CA) for Preferential Lane Advance Regulatory signs and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the regulatory signs.

Section 2G.07 Preferential Lane Ends Regulatory Signs (R3-12a, R3-12b, R3-12c, R3-12d, R3-12g, R3-12h, R3-15b, R3-15c, and R3-15e)

Option:

- 08 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Preferential Lane Ends Regulatory signs, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 09 Refer to Figures 2G-1, 2G-2, 2G-3 and 2G-1(CA) for Preferential Lane Ends Regulatory signs and 2G-1(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the regulatory signs.

Section 2G.10 Preferential Lane Guide Signs – General

Support:

- 28 GRN lanes are used on freeways, expressways, and conventional roads to allow Olympic Games vehicles to travel between venues and ensure athletes and accredited persons make their events and venues on time.

Guidance:

- 29 *On conventional roads, guide signs applicable only to GRN lanes, if used, should comply with the provisions for guide signs in Chapter 2D and any principles for Preferential Lane guide signs in Sections 2G.10 through 2G.15 that engineering judgment finds to be appropriate for the conditions.*

Support:

- 30 Additional guidance and standards related to the designation, operational considerations, signs, pavement markings, and other considerations for GRN lanes are provided in Sections 2G.03 through 2G.07, 2G.09, and Chapter 3E.

Standard:

- 31 **Signs applicable only to a GRN lane, which is a dedicated lane(s) for Olympic Games vehicles to travel between venues that is included in the established GRN, shall be distinguished from signs applicable to a preferential lane or general-purpose lanes by the inclusion of the LA28 sign plaque or sign panel using white legend on light blue background.**

Option:

- 32 When post-mounted guide signs applicable only to a GRN lane are installed on a median barrier with limited lateral clearance to the adjacent travel lanes or shoulders, the guide signs may have a vertically-oriented rectangular shape.

Guidance:

- 33 *Where lateral clearance is limited, such as when a post-mounted GRN Lane guide sign is installed on a median barrier, the edges of the sign should not project beyond the outer edges of the barrier.*

Option:

- 34 Where lateral clearance is limited, GRN Lane guide signs that are 72 inches or less in width may be skewed up to 45 degrees in order to fit within the barrier width or may be mounted higher, such that the vertical clearance to the bottom of the sign, light fixture, or its structural support, whichever is lowest, is not less than 17 feet above any portion of the pavement and shoulders.

Standard:

- 35 **Where lateral clearance is limited, GRN Lane guide signs that are post-mounted on a median barrier and that are wider than 72 inches shall be mounted with a vertical clearance that complies with the provisions of Section 2A.15 for overhead mounting.**

Option:

- 36 Changeable message signs may supplement, substitute for, or be incorporated into static guide signs involving Los Angeles 2028 Summer Olympics and Paralympics competition and key non-competition venues involving a wide range of traffic management measures, including where travel conditions change or where multiple types of operational strategies are used and varied throughout the day or week to manage the use of, control of, or access to GRN lanes.

Standard:

- 37 **When changeable message signs (see Chapter 2L) are used as guide signs for GRN lanes, they shall be the required sign size and shall display the required letter height and legend format that correspond to the type of roadway facility and design speed.**

Section 2G.11 Guide Signs for Initial Entry Points to Preferential Lanes

Option:

- 08 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Guide Signs for Initial Entry Points to Preferential Lanes, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 09 Refer to Figures 2G-8 and 2G-9 for Guide Signs for Initial Entry Points to Preferential Lanes and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.
- 10 Figure 2G-9(LA28) shows an example of signing of Advance Guide and Entrance Direction Signs for a general-purpose lane that becomes a GRN Lane that does not provide continuous access with the adjacent general-purpose lanes.
- 11 Figure 2G-8(LA28) shows an example of signing for an Entrance to GRN Lanes.

Section 2G.12 Guide Signs for Intermediate Entry Points to Preferential Lanes

Option:

- 10 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Guide Signs for Intermediate Entry Points to Preferential Lanes, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 11 Refer to Figures 2G-7, 2G-11 and 2G-12 for Guide Signs for Intermediate Entry Points to Preferential Lanes and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.
- 12 Section 2G.07(LA28) contains information on the design and placement of GRN Lanes Exit Destination Supplemental Guide signs (see Figure 2G-12(LA28)).
- 13 Figure 2G-11(LA28) shows examples of signs for various geometric configurations of intermediate entry to a barrier-separated or buffer-separated GRN lane where access is restricted to designated locations.

Section 2G.13 Guide Signs for Egress from Preferential Lanes to General-Purpose Lanes

Option:

- 08 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Guide Signs for Egress from Preferential Lanes to General-Purpose Lanes, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 09 Refer to Figures 2G-9, 2G-11 and 2G-12 for Guide Signs for Egress from Preferential Lanes to General-Purpose Lanes, and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2G.14 Guide Signs for Direct Entrances to Preferential Lanes from Another Highway

Option:

- 03 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Guide Signs for Direct Entrances to Preferential Lanes from Another Highway, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 04 Refer to Figures 2G-13 and 2G-16(CA) for Guide Signs for Direct Entrances to Preferential Lanes from Another Highway, and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

Section 2G.15 Guide Signs for Direct Exits from Preferential Lanes to Another Highway

Option:

- 08 The LA28 sign plaque and the LA28 sign panel, including if it is combined with the word message PERMIT ONLY, may be used on any existing Guide Signs for Direct Exits from Preferential Lanes to Another Highway, where engineering judgment determines the need to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Support:

- 09 Refer to Figures 2G-14, 2G-15, 2G-16, 2G-14(CA) and 2G-15(CA) for Guide Signs for Direct Exits from Preferential Lanes to Another Highway and 2G-6(LA28) for examples showing the sign plaque addition and affixing the sign panel to the face of the guide signs.

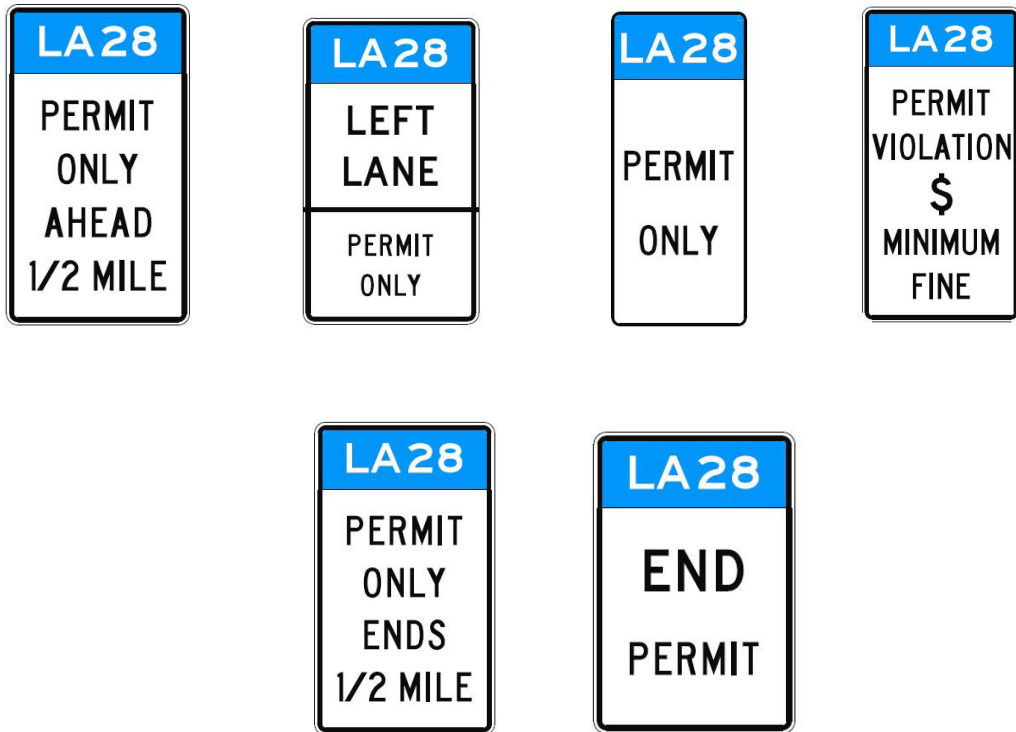
Figure 2G-1(LA28). Examples of LA28 Sign Panel usage on GRN Lane Regulatory Signs and Plaque (Sheet 1 of 3)**A - Barrier-mounted Games Route Network regulatory signs and plaque**

Figure 2G-1(LA28). Examples of LA28 Sign Panel usage on GRN Lane Regulatory Signs and Plaque (Sheet 2 of 3)

B - Overhead Games Route Network regulatory signs

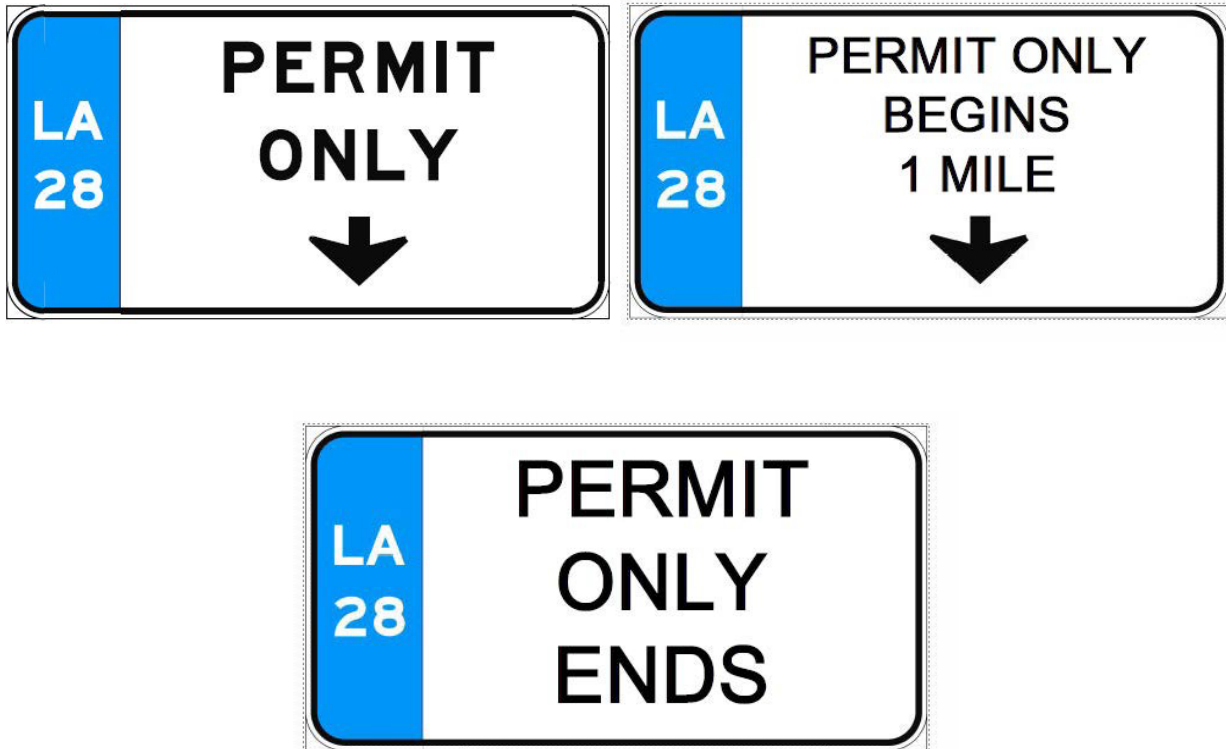


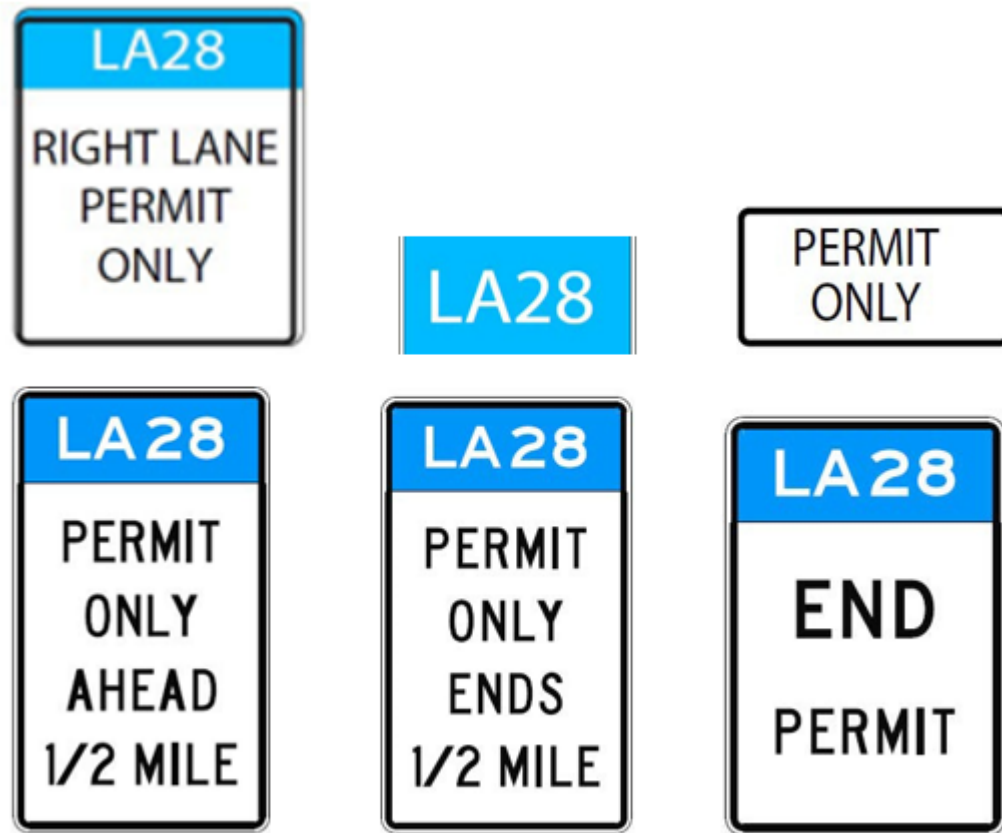
Figure 2G-1(LA28). Examples of LA28 Sign Panel usage on GRN Lane Regulatory Signs and Plaque (Sheet 3 of 3)**C - Post-Mounted Arterial Street Games Route Network regulatory signs and plaques**

Figure 2G-3(LA28). Example of Signing for a General-Purpose Lane that Becomes a Games Route Network Lane
(Former Continuous-Access Contiguous or Buffer-Separated HOV Lane)

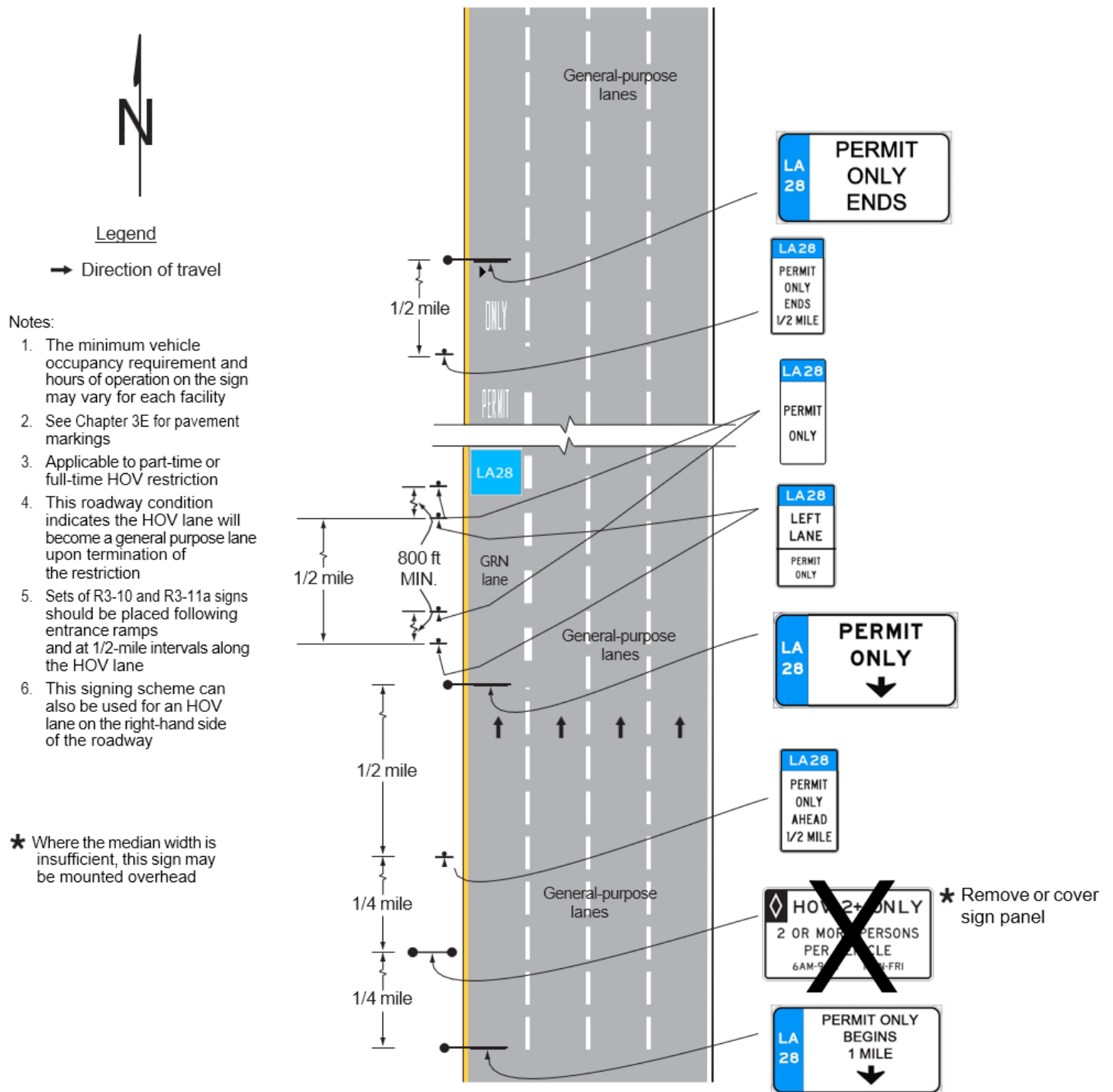


Figure 2G-6(LA28). Examples of LA28 Sign Panel usage on GRN Lane Guide Signs (Sheet 1 of 2)**A - Overhead GRN Lane Entrance Advance Guide Signs**

Figure 2G-6(LA28). Examples of LA28 Sign Panel usage on GRN Lane Guide Signs
(Sheet 2 of 2)

B- Overhead or Post-Mounted GRN Lane Entrance Direction Signs

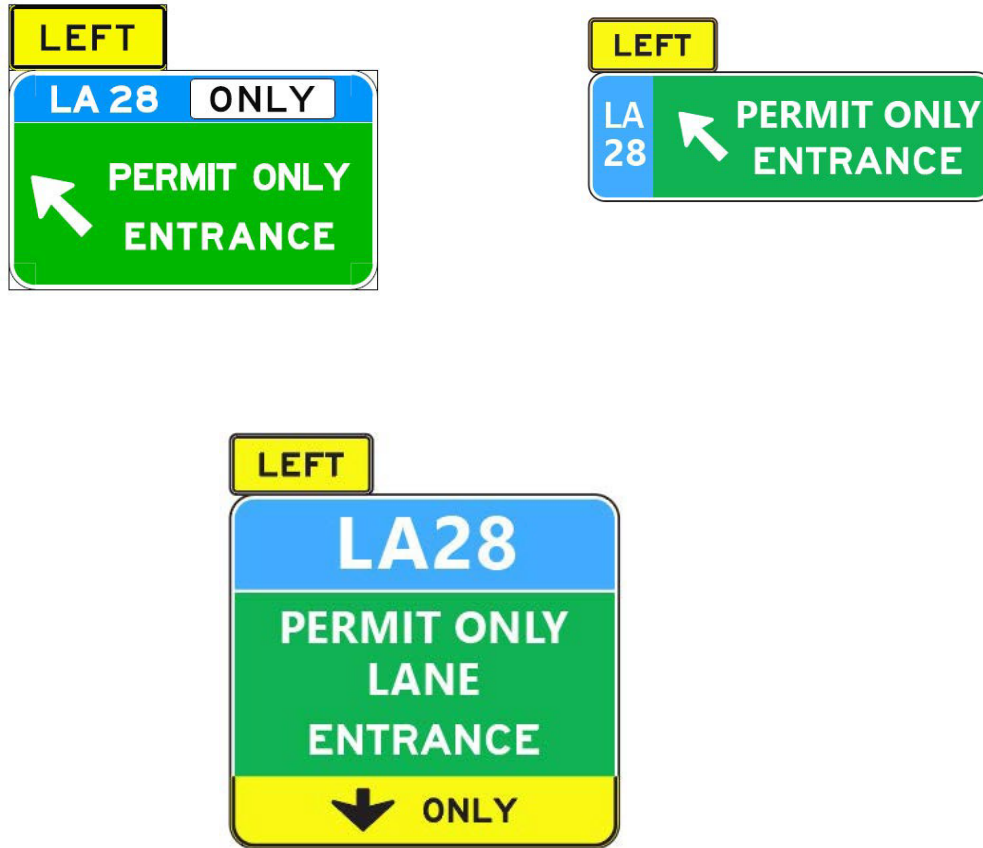


Figure 2G-7(LA28). Examples of LA28 Sign Panel usage on Entrance Gore Signs for Barrier-Separated GRN Lanes

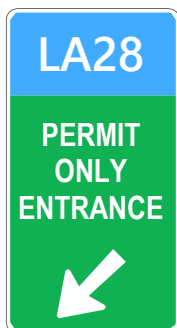


Figure 2G-8(LA28). Example of Signing for an Entrance to Games Route Network Lanes (Former Access-Restricted HOV Lanes)

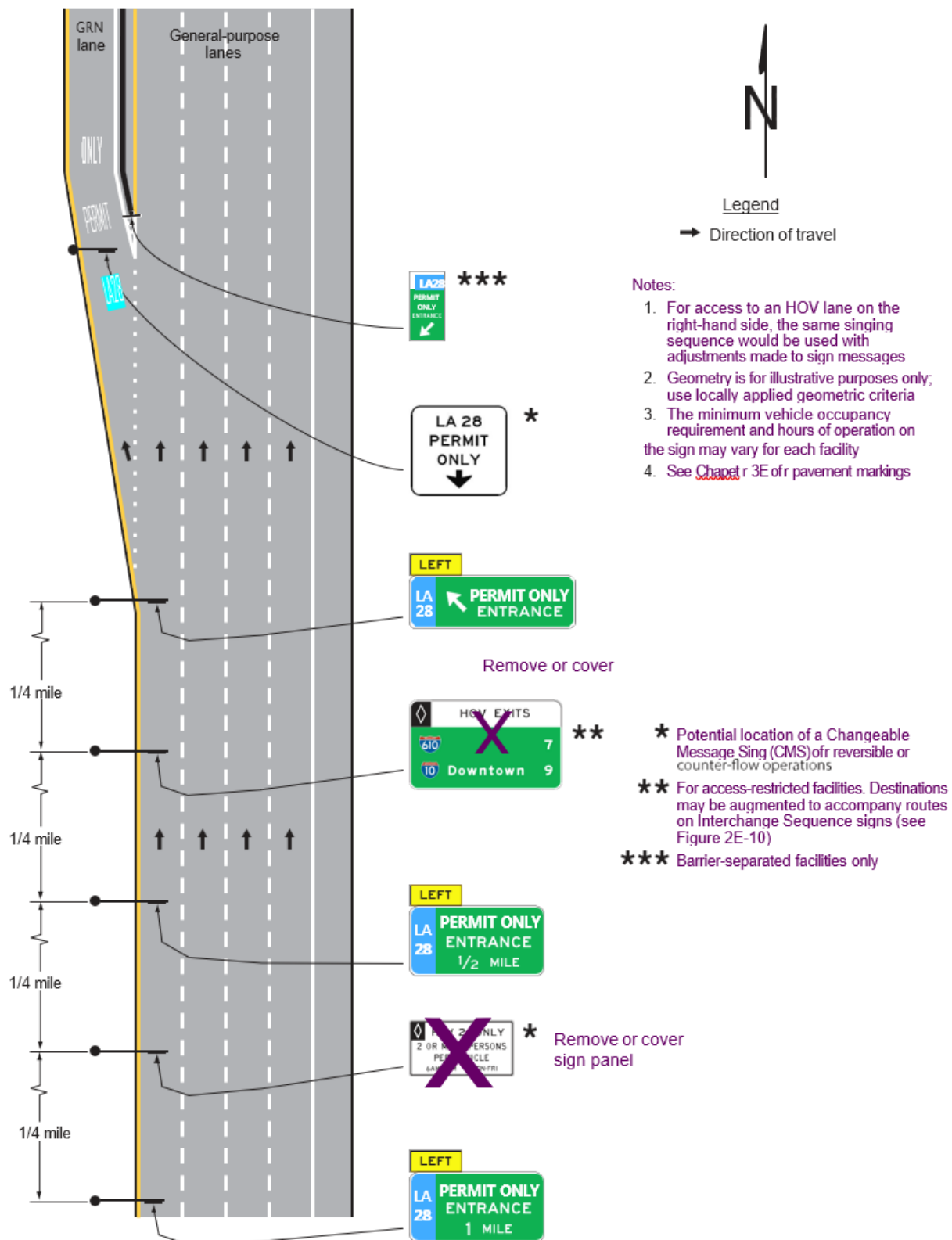
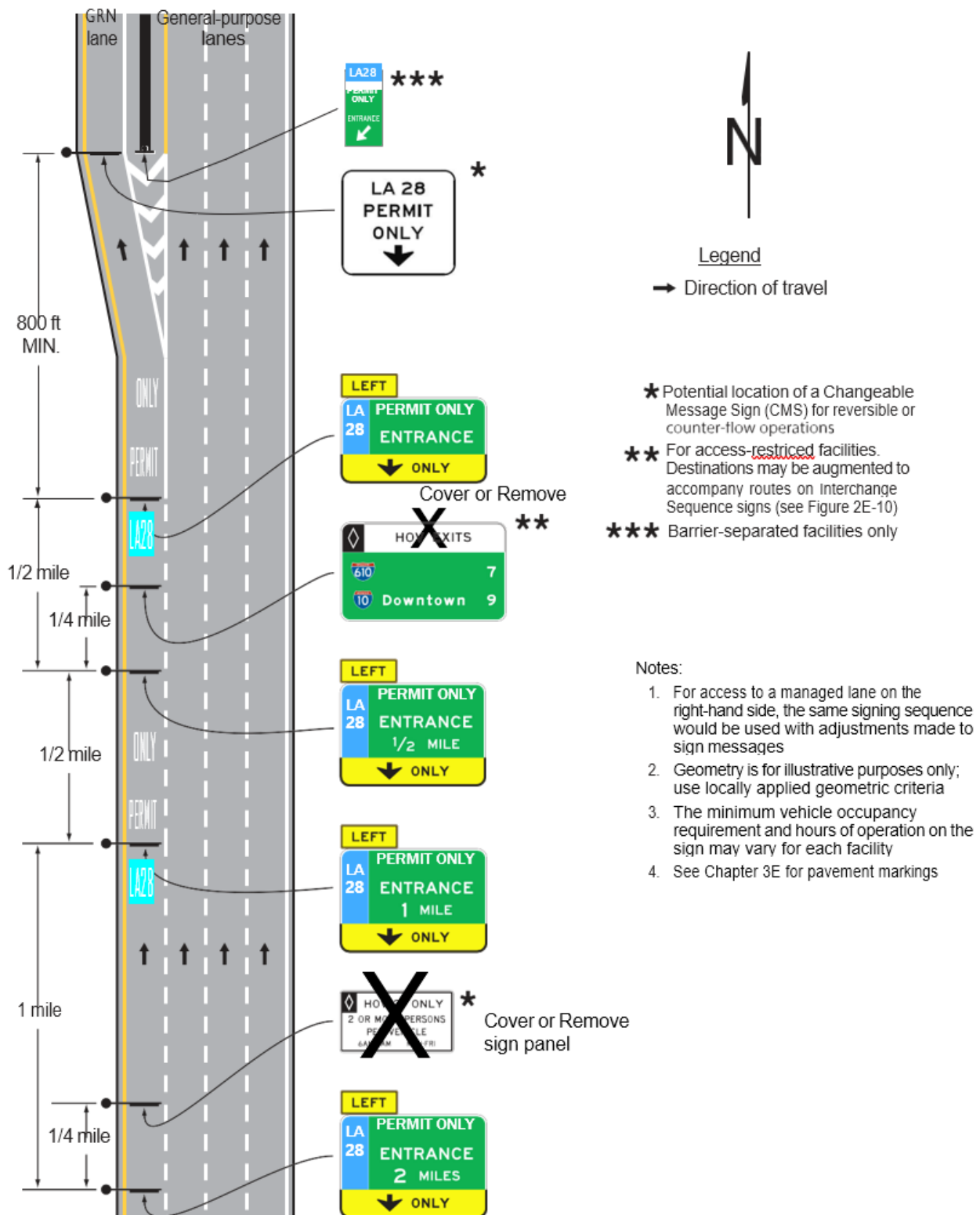


Figure 2G-9(LA28). Example of Advance Guide and Entrance Direction Signs for a General-Purpose Lane that Becomes a Games Route Network Lane (Former Preferential Lane)



- Notes:

1. For access to a managed lane on the right-hand side, the same signing sequence would be used with adjustments made to sign messages
2. Geometry is for illustrative purposes only; use locally applied geometric criteria
3. The minimum vehicle occupancy requirement and hours of operation on the sign may vary for each facility
4. See Chapter 3E for pavement markings

Figure 2G-10(LA28). Example of Signing for the Intermediate Entry to, Egress from, and End of Games Route Network Lanes (Former Access-Restricted HOV Lanes)

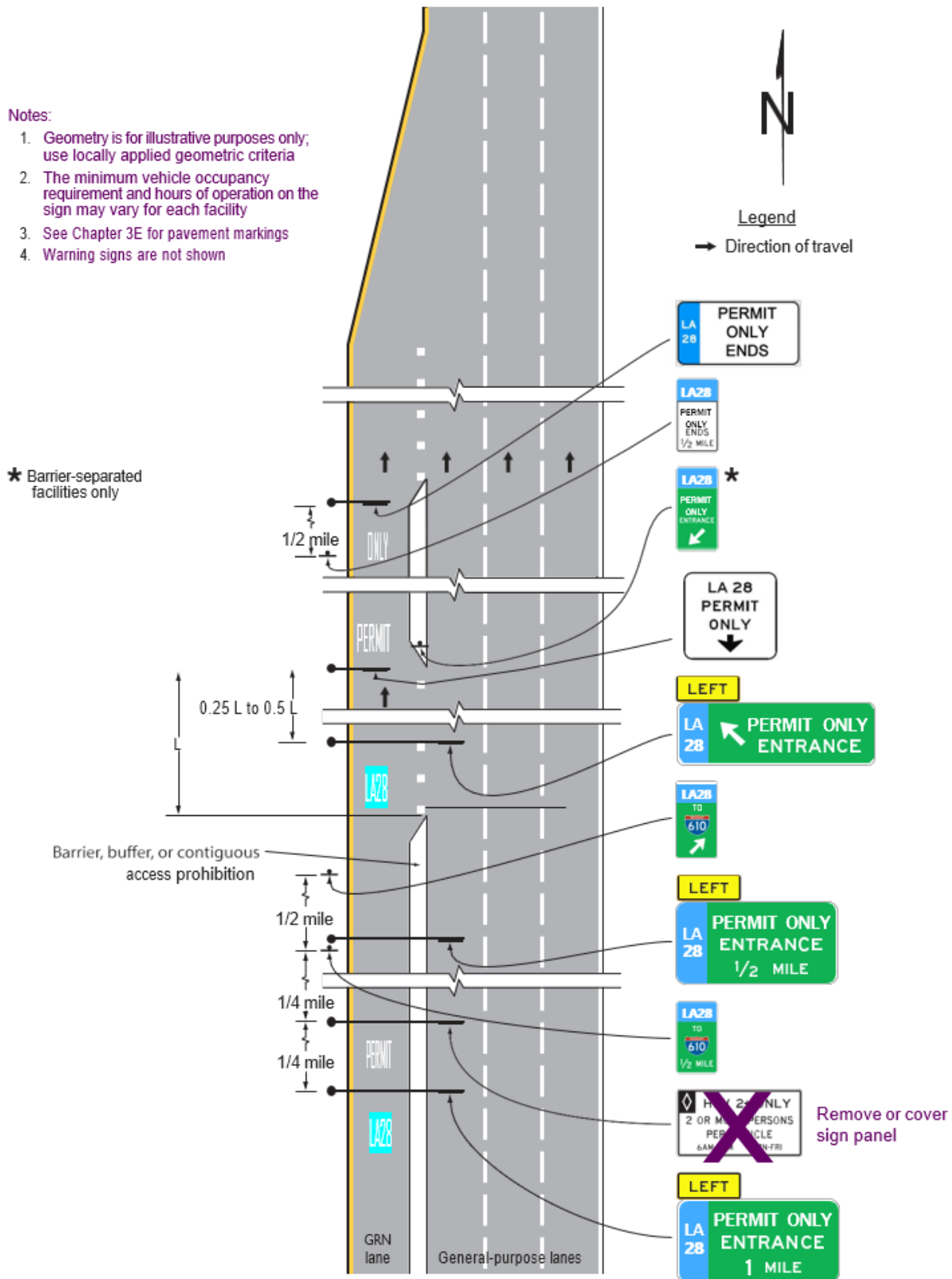


Figure 2G-11(LA28). Examples of LA28 Sign Panel usage on Barrier-Mounted Guide Signs for an Intermediate Egress from GRN Lanes

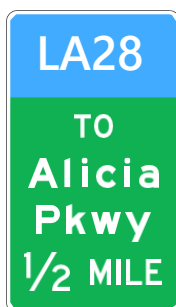
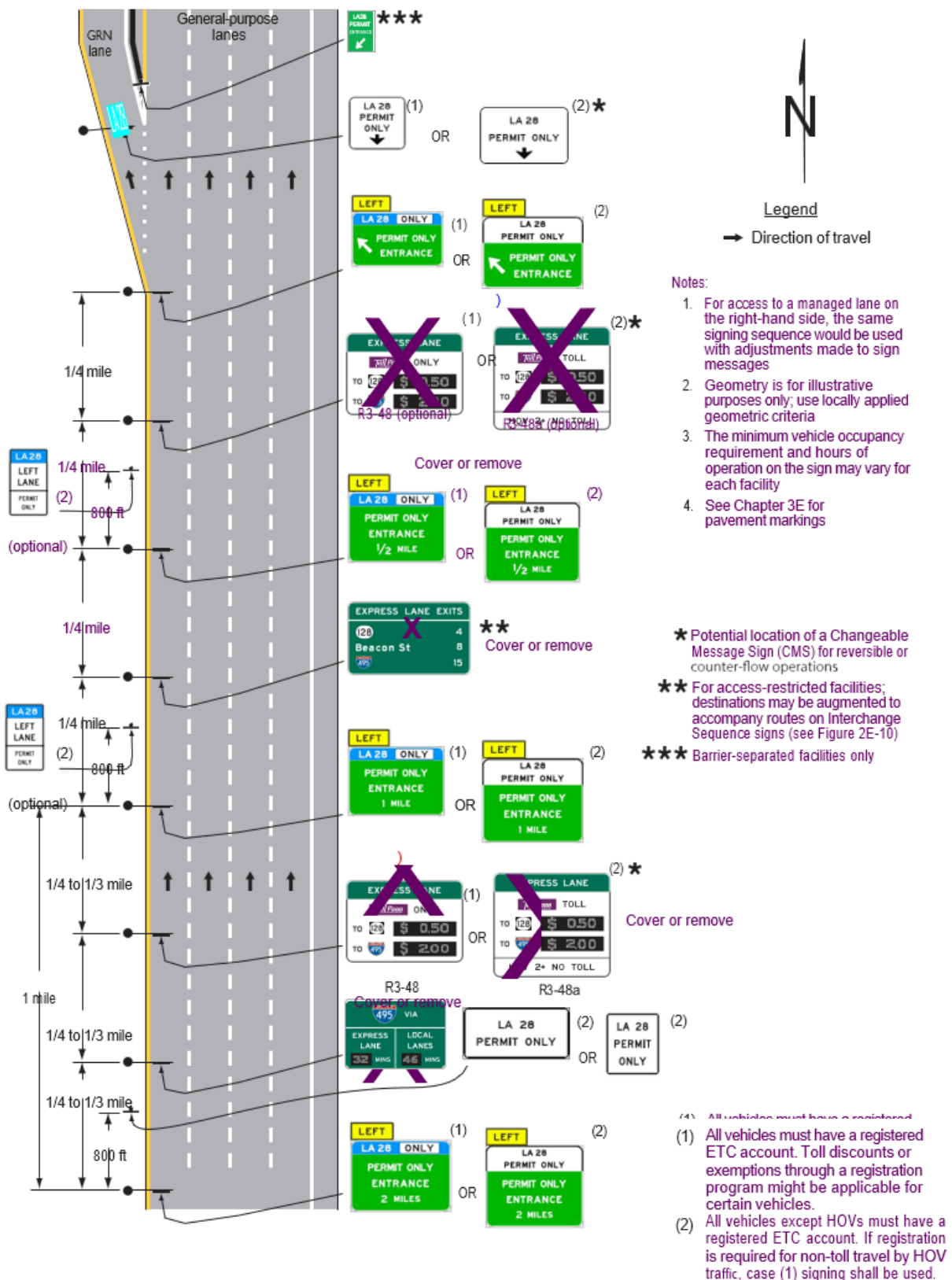
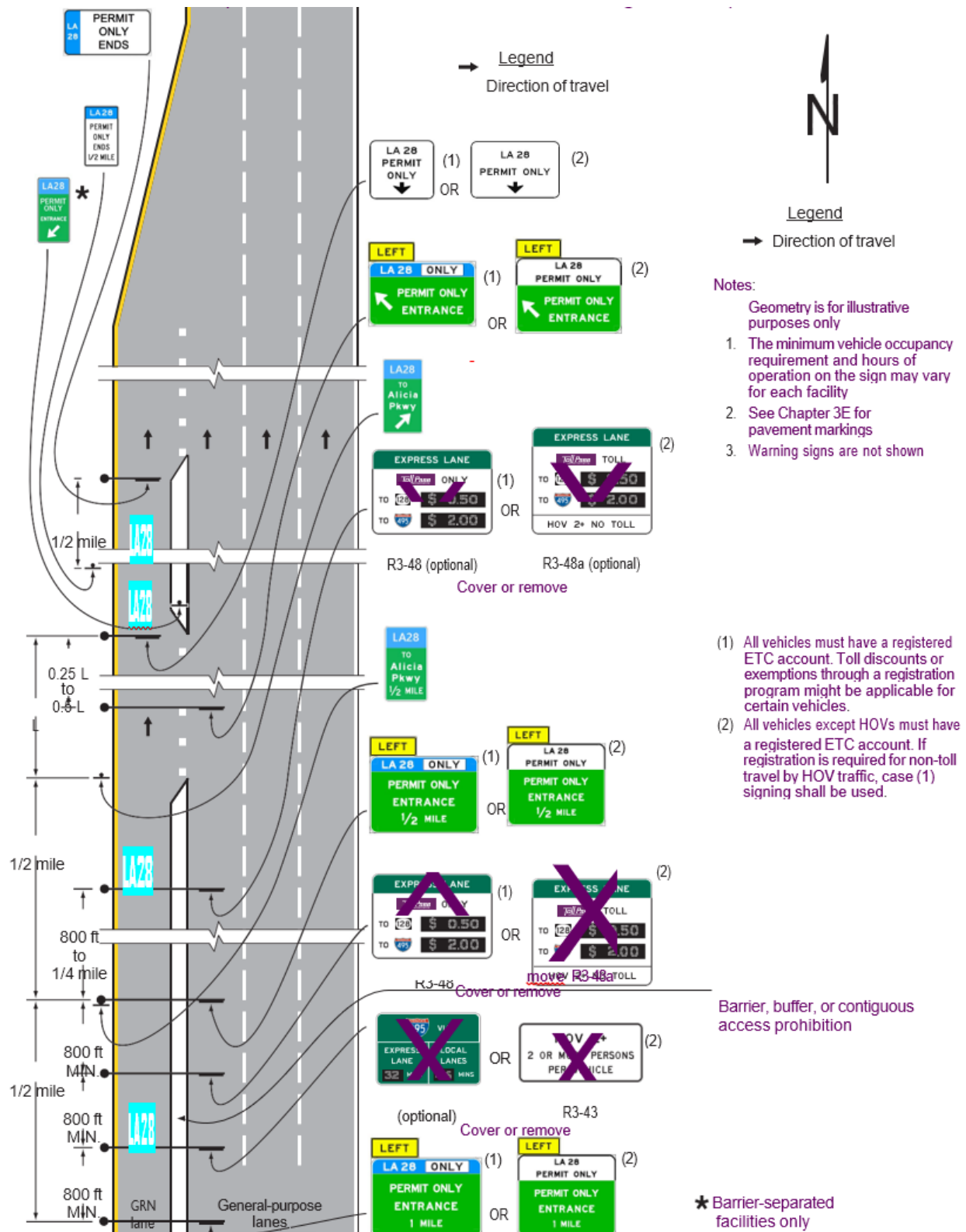


Figure 2G-21(LA28). Example of Signing for the Entrance to a Games Route Network (Former Access-Restricted Priced Managed Lane – ETC Account Required)



2G-24(LA28). Example of Signing for the Intermediate Entry to, Egress from, and End of Games Route Network Lanes (Former Access-Restricted Priced Managed Lanes)



CHAPTER 2L. CHANGEABLE MESSAGE SIGNS

Section 2L.01 Description of Changeable Message Signs

The following is added to this section:

Standard:

- 06 If used, provisions of Chapter 2G and Chapter 2L of CA MUTCD 2014R9 and this Supplement LA28 shall apply to changeable message signs used in GRN dedicated lane(s) for Olympic Games vehicles to travel between venues that is included in the established GRN. Such GRN lanes shall use changeable message signs or changeable message elements within static signs to display the appropriate regulatory sign messages only when they are in effect.

Support:

- 07 Refer to Sections 1A.15, 2G.01 and 2G.06, Figures 2G-8(LA28), 2G-9(LA28), 2G-21(LA28) and 2G-22(LA28), and Tables 1D-2 and 2A-2 of this CA MUTCD 2014R9 LA28 Supplement for more details on changeable message sign applications in GRN dedicated lane(s) for Olympic Games vehicles to travel between venues that is included in the established GRN.

Section 2L.02 Applications of Changeable Message Signs

The following is added to this section:

Option:

- 02a Any existing changeable message signs or portable changeable message signs may be used to display GRN messages, where engineering judgment determines the need to use GRN messages on GRN roadways to facilitate travel during LA28 games.

Support:

- 02b Proposed GRN messages used on the changeable message signs and portable changeable message signs, such as LA28 PERMIT ONLY, LA28 PERMIT ONLY AHEAD and LA28 PERMIT ONLY LEFT LANE are transportation-related messages.

Standard:

- 02c GRN messages used on changeable message signs shall be used only if the changeable message signs or the portable changeable message signs are located in or on approaches to GRN dedicated lane(s) for Olympic Games vehicles to travel between venues that is included in the established GRN.

Section 2L.05 Message Length and Units of Information

The following is added to this section:

Guidance:

- 10 When a CMS is used to display a GRN message, the message should be simple, direct, brief, legible, and clear (see Section 1A.01). GRN messages should be relevant to the road user on the roadway that is included in the established GRN, on which the message is displayed.

- 11 The GRN message should be appropriately shortened or otherwise modified to comply with the provisions of Section 2L.05 when it is displayed on a CMS.

- 12 The GRN message should be similar to the static GRN regulatory and guide sign legends that are included in this CA MUTCD 2014R9 LA28 Supplement in Chapter 2G.

Support:

- 13 Table 2L-101(LA28) provides examples of GRN messages that can be used in GRN dedicated lane(s) for Olympic Games vehicles to travel between venues that is included in the established GRN.

Table 2L-101(LA28). Example of GRN Messages for CMS and PCMS

Example	Phase	Message	Comments
1	1	LA28 PERMIT ONLY AHEAD	Advance warning message: TBD
	2	LA28 PERMIT ONLY LEFT LANE	
2	1	LA28 PERMIT ONLY	GRN Lane definition message: TBD
3	1	LA28 GAMES ROUTE NETWORK	GRN Lane definition message: TBD
4	1	LA28 PERMIT VIOLATION FINE \$###	GRN Lane operation message: TBD
5	1	LA28	GRN Lane Advance message: TBD

Note: Examples shown are for single-color CMS with pixel spacing greater than 20 mm and use all upper-case lettering. Multi-color, full- matrix CMS with pixel spacing of 20 mm or less should use upper- and lower-case lettering where appropriate and proper legend and background colors.

Table 2L-102(LA28). Examples of GRN Messages for Portable CMS*

Example	Phase	Message	Comments
1	1	LA28 PERMIT ONLY	Advance warning message: TBD
	2	LA28 LEFT LN AHEAD	
2	2		
3	1 2		
4	1 2		
5	1 2		
6	1 2		
7	1 2		
8	1 2		

* Examples shown are for a portable CMS where the display width is generally limited to 8 characters per line of legend.

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PART 3

MARKINGS

CHAPTER 3A. GENERAL

Section 3A.02 Standardization of Application

The following is added to this section:

Standard:

08 The provisions of Part 3 regarding markings in general, material, retroreflectivity (Chapter 3A), pavement word markings (Chapter 3B), preferential lane markings (Chapter 3D) and colored pavements (Chapter 3G) shall apply to all roadways included in the established GRN in locations specified by Caltrans experimentation request to FHWA.

09 When a Games Route Network (GRN) has been established with dedicated lanes for Olympic Games vehicles to travel between venues, the LA28 sign plaque, LA28 sign panel, including when combined with PERMIT ONLY message (see Chapters 2A, 2B, 2D, 2E and 2G) and LA28 and PERMIT ONLY word pavement markings (see Chapters 3A, 3B, 3D and 3G) for these lanes shall be used to advise road users of GRN permit requirements and restrictions.

Guidance:

10 The LA28 word marking (see Figure 3A-115(LA28)) should be used only where deemed necessary or desirable and justified by engineering judgment, as provided in Section 1A.09.

11 The LA28 word pavement marking should only be used where the light blue color, used as background pavement color, contrasts significantly with adjoining paved areas or it can be used in combination with the black color to enhance contrast with adjoining paved areas.

Option:

12 The LA28 word marking may be used on any roadway that is included in the established GRN, where engineering judgment determines the need to identify GR dedicated lanes on GRN roadways to facilitate travel during LA28 games.

13 To enhance the identification of GRN dedicated lanes, the PERMIT ONLY word marking in black legend on a white background maybe used at some locations in conjunction with the LA28 word marking, where engineering judgment determines it is needed.

Guidance:

14 if used, the LA28 word marking and the PERMIT ONLY word markings (see Figure 3A-115(LA28)) should be in place before the games begin and maintained during the games for the time period June 1, 2028 to September 1, 2028.

Standard:

15 Where used on roadways in GRN, the LA28 word marking and the PERMIT ONLY word marking shall be removed after September 1, 2028 or the end of the games and the roadway restored to the condition of previous markings.

Section 3A.03 Maintaining Minimum Pavement Marking Retroreflectivity

The following is added to this section:

Support:

08 The provisions of this Section requiring a method designed to maintain minimum pavement marking Retroreflectivity, do not apply to word pavement markings, which includes LA28 and PERMIT ONLY word pavement markings. (See CA MUTCD 2014R9 Section 3A.03, paragraph #06)

Section 3A.04 Materials

The following is added to this section:

Support:

06 The chromaticity coordinates that define the ranges of acceptable colors, including the color white, for traffic control devices are found in the Appendix to Subpart F of 23 CFR 655. The chromaticity coordinates for light blue color, to define the ranges of acceptable light blue color, to be used as a traffic control device color, is not included in the Appendix to Subpart F of 23 CFR 655, nor any other related references that include other standard colors. FHWA will provide these chromaticity coordinates for light blue color, defining the range of acceptable light blue color as the background color for LA28 word pavement marking, that will used in this Caltrans experimentation request on GRN roadways during LA28 Olympic Games.

Standard:

07 The material used for the white color legend and light blue color background for both, the LA28 and PERMIT ONLY, word pavement markings shall be retroreflective, as these pavement markings are traffic control devices under this

Caltrans experimentation request specific application.*Guidance:*

- 08 The materials used for LA28 and PERMIT ONLY word pavement markings should provide the specified light blue and white color through their temporary use period from June 1, 2028 to September 1, 2028.
- 09 Consideration should be given to selecting pavement marking materials that will minimize tripping or loss of traction for road users, including pedestrians, bicyclists, and motorcyclists.

Support:

- 10 Installation of light blue background color to one lane or an area or portion of a multi-lane traveled way can create differentials in skid resistance values between the areas of colored pavement and non-colored pavement that might be unexpected by the road user.

Section 3A.05 Colors**Standard:**

- 01 Markings shall be yellow, white, red, blue, green, light blue (for GRN lanes) or purple. The colors for markings shall conform to the standard highway colors.
- 02a When used, the LA28 word pavement markings shall be white color on a light blue background and PERMIT ONLY word pavement marking shall be white color.
- 08c Black color shall not be used as the legend color for the LA28 word message, when it is used on the pavement as a pavement marking, as the material used for black color is opaque and non-retroreflective.

Option:

- 09a Black markings may be used in combination with the white or light blue color to enhance the contrast with a light-colored pavement.

CHAPTER 3B. PAVEMENT AND CURB MARKINGS

Section 3B.20 Pavement Word, Symbol, and Arrow Markings

The following is added to this section:

Support:

- 40 The LA28 and PERMIT ONLY word markings are used to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games. These LA28 and PERMIT ONLY word pavement markings can be helpful to road users in some locations by supplementing signs and providing additional emphasis, because the markings do not require diversion of the road user's attention from the roadway surface.

Option:

- 41 The LA28 word pavement markings may be used as determined by engineering judgment to supplement signs and/or to provide emphasis for regulatory and guide signs that have been modified by using the LA28 sign plaque or sign panel. The LA28 word pavement marking may be used alone, as a single line of information.
- 42 The PERMIT ONLY word pavement marking may be used in conjunction with the LA28 word pavement markings, as determined by engineering judgment to supplement signs and/or to provide additional emphasis for regulatory and guide signs that have been modified by using the LA28 sign plaque or sign panel.

Standard:

- 43 **The PERMIT ONLY word pavement markings shall not be used alone, it shall always be used in conjunction with the LA28 word pavement markings.**
- 44 **If used, the LA28 word pavement marking shall be in a single line.**
- 45 **If PERMIT ONLY word pavement marking is used in conjunction with the LA28 word pavement marking, it shall consist of three lines of information. Each word of the information, LA28, PERMIT and ONLY, shall constitute as a single separate line. This three lines of information shall read as LA28 PERMIT ONLY in the direction of travel, with the first word LA28, nearest to the road user (see Figure 3B-109(LA28)).**
- 46 Detailed drawings of the LA28 and PERMIT ONLY pavement word markings and alphabet details are shown in Figure 3B-109(LA28) and the "Standard Highway Signs and Markings" book. CA MUTCD 2014R9 Section 1A.11 contains information regarding how to obtain this publication.

Standard:

- 47 **If used, the LA28 word marking shall be white legend on a light blue background.**
- 48 **If used, the PERMIT ONLY word marking shall be white legend.**
- 49 **If used, the PERMIT ONLY word marking shall not be used alone, it shall be used in conjunction with the LA28 word marking.**
- 50 **The LA28 and PERMIT ONLY pavement marking letters and numerals shall be installed in accordance with the design details in the Pavement Markings chapter of the "Standard Highway Signs and Markings" book (see CA MUTCD 2014R9 Section 1A.11).**

Option:

- 51 The LA28 and PERMIT ONLY word pavement markings may be proportionally scaled to fit within the width of the facility upon which they are applied.

Guidance:

- 52 *If used, each of the LA28, PERMIT and ONLY word pavement marking used on freeway and arterial streets segments in the GRN, should be spaced 50 feet apart, as shown in Figure 3B-109(CA) Part B.*
- 53 *If used, each of the LA28, PERMIT and ONLY word pavement marking used on continuous lane segments in the GRN, should be spaced 250 feet apart, as shown in Figure 3B-109(CA) Part C.*
- 54 *When used, the LA28 and PERMIT ONLY word pavement markings letter heights should be as shown in Figure 3B-109(LA28).*

Figure 3B-109(LA28). LA28 and PERMIT ONLY word pavement markings



LA28 Markings



LA28 Markings



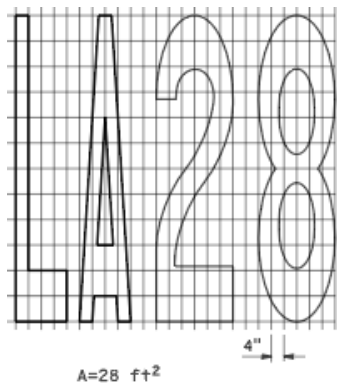
PERMIT ONLY Markings



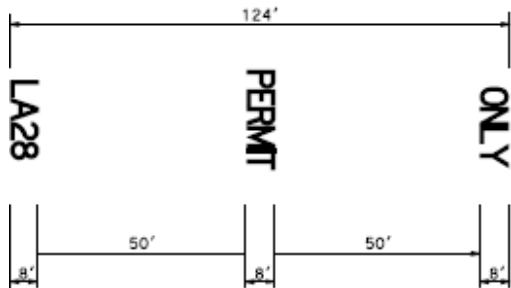
PERMIT ONLY Markings

Figure 3B-110(LA28). Examples of GRN Markings

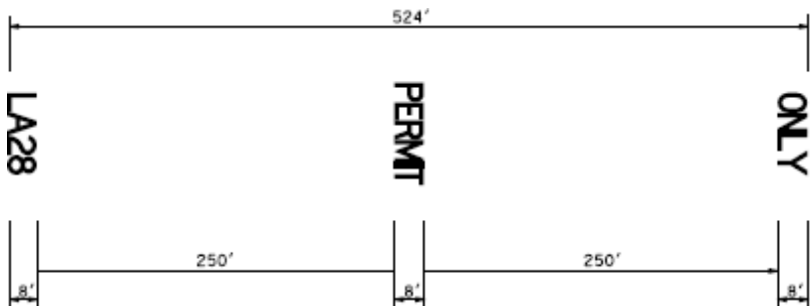
A – LA28 Pavement Marking



B – LA28 Permit Only at Games Route Network Lane Opening (Freeway) and Arterial streets



C – LA28 Permit Only at Continuous Games Route Network Lane



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CHAPTER 3D. MARKINGS FOR PREFERENTIAL LANES

Section 3D.01 Preferential Lane Word and Symbol Markings

The following is added to this section:

Support:

- 15 Specific preferential lanes will be used to designate Olympic Games vehicles to travel between venues on roadways that are included in the established GRN during LA28 in locations specified by the supplement. Specific preferential lanes that are used as dedicated lane(s) for Olympic Games vehicles to travel between venues and included in the established GRN, are referred to as “GRN lane(s)” in this CA MUTCD 2014R9 LA28 Supplement.

Standard:

- 16 The provisions of Chapter 3D for preferential lane word and symbol markings shall apply to all roadways included in the established GRN in locations specified by Caltrans experimentation request to FHWA.
- 17 When certain types of vehicles (such as without LA28 permit) are prohibited from using a GRN lane or when a GRN lane is restricted to use by only certain types of vehicles (such as with a LA28 permit) as an operational strategy, the LA28 word pavement marking alone, or in conjunction with the PERMIT ONLY word pavement marking shall be used to identify dedicated lanes on GRN roadways to facilitate travel during LA28 games.

Option:

- 18 The LA28 and PERMIT ONLY word pavement markings may be omitted at toll plazas where physical conditions preclude the use of the markings.

Guidance:

- 19 The location for the LA28, and if used, PERMIT ONLY word pavement markings should be based on engineering judgment that considers the prevailing speed, block lengths, distance from intersections, and other factors that affect clear communication to the road user.
- 20 If used, the spacing interval shown in Figure 3B-109(CA0 should be used based on the roadway classification.
- 21 The LA28, and if used, PERMIT ONLY word pavement markings should be placed on roadways in the established GRN at strategic locations such as major decision points, departures from the GRN lane, and along access to and from adjacent general-purpose lanes.

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CHAPTER 3F. DELINEATORS

Section 3F.03 Delineator Application

The following is added to this section:

Support:

- 22 The provisions of Chapter 3G for delineators shall apply to all roadways included in the established GRN in locations specified by Caltrans experimentation request to FHWA.

Option:

- 23 Delineators may be used on GRN roadways at locations where the alignment might be confusing or unexpected, to identify and separate dedicated lanes from general purpose lanes, to facilitate travel during LA28 games.

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CHAPTER 3G. COLORED PAVEMENTS

Section 3G.01 General

The following is added to this section:

Standard:

- 03 If colored pavement is used within the traveled way, on flush or raised islands, or on shoulders to regulate, warn, or guide traffic or if retroreflective colored pavement is used, the colored pavement is considered to be a traffic control device and shall be limited to the following colors and applications:

C. Light blue colored pavement background shall be used for the LA28 white legend word pavement making, to enhance the conspicuity of the LA28 word pavement marking.

Support:

- 07 The LA28 word pavement marking is used in conjunction with other traffic control devices to identify GRN dedicated lanes for Olympic Games vehicles travel during LA28 games (See Figure 3B-109(CA)).

Guidance:

- 08 The LA28 and PERMIT ONLY word pavement markings should only be used where the light blue color used as background color, contrasts significantly with adjoining paved areas.

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PART 4

HIGHWAY TRAFFIC SIGNALS

CHAPTER 4B. TRAFFIC CONTROL SIGNALS - GENERAL

Section 4B.01 General

The following is added to this section:

Standard:

- 03 The provisions of Part 4 regarding highway traffic signals in general, features, faces, indications, phases, location and types, shall apply to all roadways included in the established GRN in locations specified by Caltrans experimentation request to FHWA.

Support:

- 04 Any change to signal timing, signal phasing, signal coordination for coordinated mode in a progressive system for advanced signal synchronization, would be in accordance with Part 4 provisions. However, some aspects of these operational strategies deployed to coordinate and synchronize traffic signals for operational improvements, aren't traffic control device policies and although related to the traffic control devices, they constitute engineering practices and are not covered by CA MUTCD.

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PART 6

TEMPORARY TRAFFIC CONTROL

CHAPTER 6F. TEMPORARY TRAFFIC CONTROL ZONE DEVICES

Section 6F.01 Types of Devices

The following is added to this section:

Standard:

- 14 If used, the provisions for temporary traffic control devices in Part 6, shall apply to all temporary traffic control devices used on roadways included in the established GRN in locations specified by Caltrans experimentation request to FHWA.

Section 6F.60 Portable Changeable Message Signs

The following is added to this section:

Standard:

- 38 If used, provisions of preferential and managed lane signs in Chapter 2G, changeable message signs in Chapter 2L and temporary traffic control in Part 6 of CA MUTCD 2014R9 and this LA28 Supplement shall apply to portable changeable message signs used in GRN dedicated lane(s) for Olympic Games vehicles to travel between venues that is included in the established GRN.

Support:

- 39 The information in this Section describes situations where the provisions for portable changeable message signs differ from those given in Chapter 2L.

Option:

- 40 Portable changeable message signs may be used to display GRN messages, where engineering judgment determines the need to use GRN messages on GRN roadways to facilitate travel during LA28 games.

Standard:

- 41 GRN messages used on portable changeable message signs shall be used only if the portable changeable message signs are located in or on approaches to GRN dedicated lane(s) for Olympic Games vehicles to travel between venues that is included in the established GRN.
- 42 Portable changeable message signs used on GRN roadways shall comply with the applicable design and application principles established in Chapter 2A.

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