

Meeting Date: May 1, 2025 Item Number: 25-07	From: Timothy Kong, Caltrans
Sponsored By: Amjad Obeid, Caltrans	Presented By: Timothy Kong, Caltrans
Description: Interim Approval 23 (IA-23), for the optional use of the Residential Driveway Temporary Signal along a two-lane, two-way road segment to control traffic entering from residential driveways under certain limited conditions, was issued by the Federal Highway Administration (FHWA) on January 8, 2025.	

Recommendation:

None

Agency Making Request/Sponsor:

Timothy Kong, Caltrans / Amjad Obeid, Caltrans

Background:

On January 8, 2025, Interim Approval 23 (IA-23), for the optional use of the Residential Driveway Temporary Signal along a two-lane, two-way road segment to control traffic entering from residential driveways under certain limited conditions, was issued by FHWA.

Construction or maintenance activities on two-lane, two-way roadways might involve the closure of one of the lanes, resulting in alternating one-direction traffic on the remaining open lane through the temporary traffic control zone. Typically, flaggers or temporary signals are used to control the movement into and through the temporary traffic control zone. In many areas, there are residential driveways located within the one-lane, one- direction portion of the temporary traffic control zone. These access points create the potential for traffic to enter the roadway going in the wrong direction. Oftentimes, these access points are not monitored, or flaggers are not deployed to direct the traffic entering the roadway in the proper direction. The Residential Driveway Temporary Signal is a temporary traffic control device developed to replace flaggers at residential driveways within the one lane, one-direction segment of the temporary traffic control zone. The Residential Driveway Temporary Signal consists of a single three-section signal face comprising of a steady circular red signal indication below which are mounted two adjacent flashing yellow arrow signal indications and signing to communicate when traffic can enter the road from the driveway and in which direction to proceed. See Attachment A, and FHWA website (https://mutcd.fhwa.dot.gov/res-interim_approvals.htm) for full details.



California Traffic Control Devices Committee (CTCDC) Agenda Item Report



Attachments:

Attachment A – FHWA IA-23 Memo

ATTACHMENT A



California Traffic Control Devices Committee (CTCDC) Agenda Item Report



Attachment A – FHWA IA-23 Memo

See Memo on Following Pages



Memorandum

Subject: **INFORMATION:** MUTCD – Interim
Approval for Optional Use of Residential
Driveway Temporary Signal (IA-23)

Date: JAN 8 2025

From: Martin C. Knopp 
Associate Administrator for Operations

In Reply Refer To:
HOTO-1

To: Federal Lands Highway Division Directors
Division Administrators

SUMMARY

The purpose of this memorandum is to issue an Interim Approval for the optional use of the Residential Driveway Temporary Signal along a two-lane, two-way road segment to control traffic entering from residential driveways under certain limited conditions. An Interim Approval allows interim use, pending official rulemaking, of a new traffic control device, a revision to the application or manner of use of an existing traffic control device, or a provision not specifically described in the *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD). This Interim Approval is issued under the provisions of the 11th Edition of the MUTCD (December 2023). References herein are made to that specific edition.

BACKGROUND

Construction or maintenance activities on two-lane, two-way roadways might involve the closure of one of the lanes, resulting in alternating one-direction traffic on the remaining open lane through the temporary traffic control zone. Typically, flaggers or temporary signals are used to control the movement into and through the temporary traffic control zone. In many areas, there are residential driveways located within the one-lane, one-direction portion of the temporary traffic control zone. These access points create the potential for traffic to enter the roadway going in the wrong direction. Oftentimes, these access points are not monitored, or flaggers are not deployed to direct the traffic entering the roadway in the proper direction. The Residential Driveway Temporary Signal is a temporary traffic control device developed to replace flaggers at residential driveways within the one lane, one-direction segment of the temporary traffic control zone. The Residential Driveway Temporary Signal consists of a single three-section signal face comprising of a steady circular red signal indication below which are mounted two adjacent flashing yellow arrow signal indications and signing to communicate when traffic can enter the road from the driveway and in which direction to proceed.

Research on the Residential Driveway Temporary Signal: Ten State departments of transportation (DOT) from Indiana, Kansas, Massachusetts, Michigan, Mississippi, Nebraska, New York, Ohio, Texas, and Virginia experimented with the Residential

Driveway Temporary Signal (where it was known as a Driveway Assistance Device) covering a 10-year period from 2013 to 2023. These experiments evaluated the effectiveness of the Residential Driveway Temporary Signal from an operational and safety perspective. In addition, the experiments evaluated the cost effectiveness of the devices and determined the best signal face layout and supporting sign requirements.

Federal Highway Administration (FHWA) Evaluation of Results: The Office of Transportation Operations has reviewed the available data on the experimental Residential Driveway Temporary Signal and considers it to be successful for the applications that were tested. Positive operational effects were documented in the experiments after the installation of the Residential Driveway Temporary Signal. The overall result of the experiments showed that the Residential Driveway Temporary Signal is a useful and safe device for directing traffic from residential driveways in one-lane, one-direction temporary traffic control zone applications.

1. **Safety:** Experiments with the DOTs in Michigan, New York, Ohio, and Texas observed a high compliance rate with the Residential Temporary Driveway Signal. All experiments reported no crashes with implementation of the devices. In addition, the Residential Driveway Temporary Signal reduced flagger exposure to traffic especially during low-light conditions.
2. **Operational Improvements:** The DOT experiments in Indiana and Ohio identified improved throughput utilizing the Residential Driveway Temporary Signal with temporary traffic control signals.
 - a. The Indiana DOT experiment showed that the Residential Driveway Temporary Signal significantly increased the amount of green time available to the major approaches to the one-lane road, resulting in less vehicular delay, and estimated that the devices increased green time by 15 percent to 20 percent during both the morning and afternoon peak hours.
 - b. The Ohio DOT concluded that the Residential Driveway Temporary Signal resulted in statistically shorter delays at driveways and shorter queue lengths along the mainline roadway at the end of the temporary traffic control zone.
3. **Cost Benefit:** Experiments with the DOTs in Kansas, Massachusetts, New York, and Ohio showed a significant cost savings when using the Residential Driveway Temporary Signal with temporary signals as compared to using flaggers.
4. **Device Design:** The Michigan DOT, Texas DOT, and the Texas Transportation Institute (TTI) conducted extensive evaluations of the signal face layout and corresponding signing.
 - a. Multiple experiments showed the three-section signal face in an inverted “T” configuration to be the most effective.
 - b. Experiments in both States verified the need for a “No Turn on Red” sign.

- c. The Texas DOT/TTI, 2013, driver comprehension study¹ results recommend the “No Turn on Red” sign with a regulatory plaque displaying the legend TURN ONLY IN DIRECTION OF ARROW.
- d. Smart Work Zone Deployment Initiative final report², 2022, determined that flashing yellow arrows contributed to an improved response rate over flashing red arrows in terms of proper driving action.

Conditions of Interim Approval: The FHWA will grant permission for the optional use of Residential Driveway Temporary Signal under this Interim Approval to any jurisdiction that submits a written request to the Office of Transportation Operations. A State may request Interim Approval for all jurisdictions in that State. Jurisdictions using Residential Driveway Temporary Signal under this Interim Approval must agree to comply with the technical conditions detailed herein, including maintaining an inventory of all locations where Residential Driveway Temporary Signals are installed, and to comply with Item D in Paragraph 10 of Section 1B.07 of the MUTCD 11th Edition, which requires:

- “An agreement to restore the site(s) of the Interim Approval to a condition that complies with the provisions in this Manual within three months following the issuance of a Final Rule on this traffic control device; and terminate use of the device or application installed under the interim approval at any time that it determines significant safety concerns are directly or indirectly attributable to the device or application. The FHWA’s Office of Transportation Operations has the right to terminate the Interim Approval at any time if there is an indication of safety concerns.”
1. Allowable Uses: The use of the Residential Driveway Temporary Signal is limited to residential driveways within the one-lane, one-direction portion of a temporary traffic control zone resulting from closing one lane on a two-lane, two-way roadway.
 2. General Conditions: The use of Residential Driveway Temporary Signal is optional. However, if an agency opts to use Residential Driveway Temporary Signal under this Interim Approval, the following design and installation requirements shall apply, and shall take precedence over any conflicting provisions of the MUTCD.
 3. Design of Residential Driveway Temporary Signals:
 - a. The Residential Driveway Temporary Signal shall consist of a three-section signal face in an inverted “T” configuration comprising a 12-inch steady

¹ Finley, Melisa D., Steven P. Venglar, Michael P. Pratt, and Joan G. Hudson. Traffic Control Device Analysis, Testing, and Evaluation Program: FF2022 Activities, FHWA/TX-23/0-7096-R2. Texas A&M Transportation Institute the Texas A&M University System College Station, Texas. August 2023.

² Gates, T., J. Hankin, M. Chakraborty, M.S. Mahmud, P. Savolainen, T. Holpuch, and M. Motz. *Effective Signing Strategies and Signal Displays for Work Zone Driveway Assistance Devices (DADs)*. Part of TPF-5(438). Michigan State University, East Lansing, MI, January 2022.

circular red signal indication on top and two adjacent 8-inch or 12-inch flashing yellow arrow indications below (see Attachment 1). The device shall include a NO TURN ON RED sign (R10-11b) with a regulatory plaque displaying the legend TURN ONLY IN DIRECTION OF ARROW (see Attachment 1). The Residential Driveway Temporary Signal shall be used only for residential driveways and should be positioned on the near side of the residential driveway.

- b. The driveway approach may be provided with only one signal face.
 - c. A steady yellow change interval shall follow the flashing yellow arrow interval for the Residential Driveway Temporary Signal.
 - d. The Residential Driveway Temporary Signal shall be coordinated with the Temporary Traffic Control Signal controlling the main roadway traffic. The system shall be programmed such that driveway vehicles can turn before, within, and after the main roadway traffic platoon. The all-red interval of the Temporary Traffic Control Signal shall be adjusted appropriately to account for the addition of driveway vehicles to the platoon.
 - e. The Residential Driveway Temporary Signal shall flash red when the associated temporary traffic control signal is operating in flashing mode.
 - f. The Residential Driveway Temporary Signal shall be covered, or turned to face away from traffic, when not in use.
4. Other: Except as otherwise provided herein, all other provisions of the MUTCD that are applicable to temporary traffic control devices shall apply to Residential Driveway Temporary Signal.

Please direct any questions concerning this Interim Approval to Eric Ferron at eric.ferron@dot.gov.

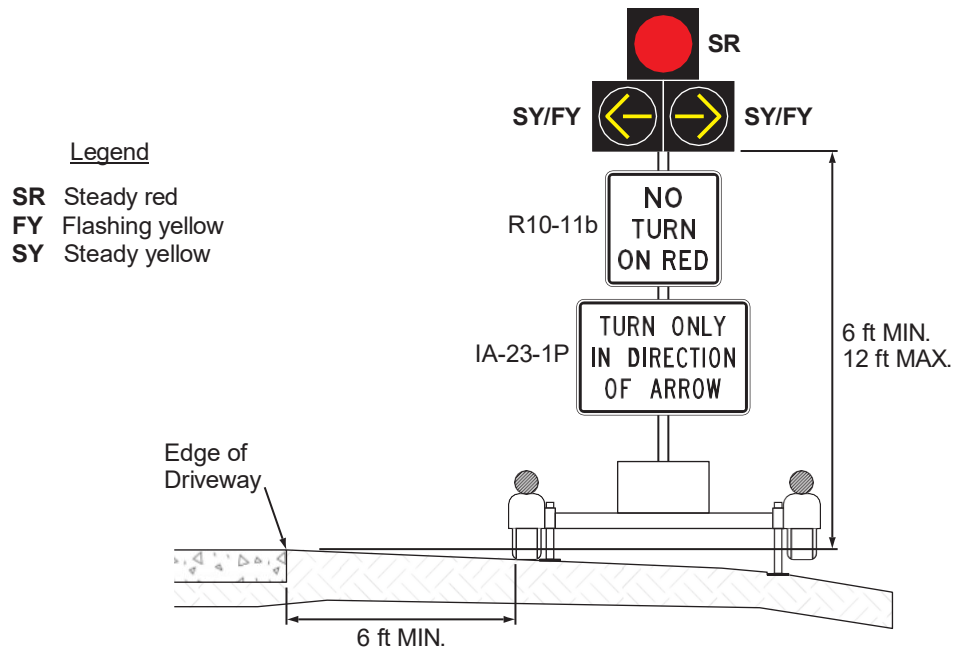
Attachments:

- Residential Driveway Temporary Signal Configuration
- Regulatory Plaque
- Residential Driveway Temporary Signal Phasing Sequence

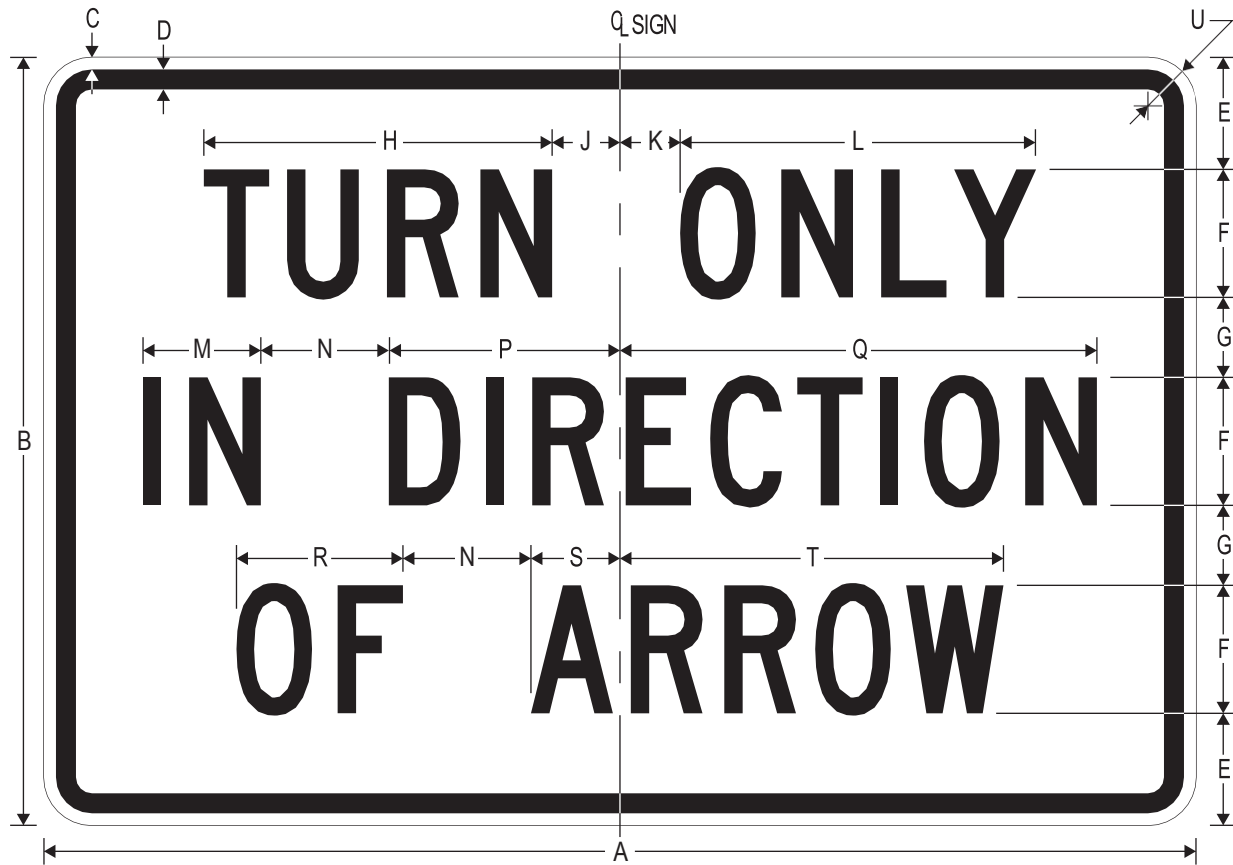
cc:

Associate Administrators
 Chief Counsel
 Chief Financial Officer
 Directors of Field Services
 Director of Technical Services

Attachment IA-23-1 Residential Driveway Temporary Signal



**Attachment IA-23-2.1
Regulatory Plaque**



IA-23-1P

TURN ONLY IN DIRECTION OF ARROW (PLAQUE)

A	B	C	D	E	F	G	H	J	K
36	24	0.375	0.625	3.5	4 C	2.5	10.844	2.120	1.880

L	M	N	P	Q	R	S	T	U
11.124	3.681	4	7.223	14.904	5.202	2.782	11.984	1.5

COLORS: LEGEND, BORDER — BLACK
BACKGROUND — WHITE (RETROREFLECTIVE)

Attachment IA-23-2.2 Dimension Descriptions

IA-23-1P:

- A is the horizontal dimension of the plaque.
- B is the vertical dimension of the plaque.
- C is the inset from the edge of the plaque to the border.
- D is the border width.
- E is the distance from the top of the first line to the top of the sign and from the bottom of the last line to the bottom of the sign.
- F is the letter height and FHWA standard font for each line.
- G is the space between the lines.
- H is the width of the first word on the first line.
- J is the distance from the vertical center of the sign to the right edge of the first word on the first line.
- K is the distance from the vertical center of the sign the left edge of the second word on the first line.
- L is the width of the second word on the first line.
- M is the width of the first word on the second line.
- N is the space between the words on the second and third lines.
- P is the distance from the vertical center of the sign to the left edge of the second word on the second line.
- Q is the distance from the vertical center of the sign to the right edge of the second word on the second line.
- R is the width of the first word on the third line.
- S is the distance from the vertical center of the sign to the left edge of the second word on the third line.
- T is the distance from the vertical center of the sign to the right edge of the second word on the third line.
- U is the corner radius.

Attachment IA-23-3 Phasing Sequence

