

## CHAPTER 6H. TTC ZONE WARNING SIGNS

### Section 6H.01 Warning Sign Function, Design, and Application

Support:

- 01 TTC zone warning signs (see Figure 6H-1) notify road users of specific situations or conditions on or adjacent to a roadway that might not otherwise be apparent.

Standard:

- 02 TTC warning signs shall comply with the Standards for warning signs presented in Part 2 and in the FHWA's "Standard Highway Signs" publication (see Section 1A.05).
- 03 The sizes for TTC warning signs shall be as shown in Table 6H-1.
- 04 Except as provided in Paragraph 5 of this Section, TTC warning signs shall be diamond-shaped with a black legend and border on an orange (or fluorescent orange) background, except for the Grade Crossing Advance Warning (W10-1) sign, which shall have a black legend and border on a yellow (or fluorescent yellow) background.

Option:

- 05 Warning signs that are required or recommended in Parts 2 or 7 to have a fluorescent yellow-green background may have that color background in TTC zones.
- 06 Existing warning signs with a yellow background that are still applicable may remain in place.
- 07 Warning signs used for TTC incident management situations may have a black legend and border on a fluorescent pink background.
- 08 Mounting or space considerations may justify a change from the standard diamond shape to a rectangular shape.
- 09 In emergencies, available warning signs having yellow backgrounds may be used if signs with orange or fluorescent pink backgrounds are not at hand.

Guidance:

- 10 *Where roadway or road user conditions require greater emphasis, larger than standard size warning signs should be used, with the symbol or legend enlarged approximately in proportion to the outside dimensions.*
- 11 *Where any part of the roadway is obstructed or closed by work activities or incidents, advance warning signs should be installed to alert road users well in advance of these obstructions or restrictions.*
- 12 *Where road users include pedestrians, the provision of supplemental audible information or detectable barriers or barricades should be provided for people with vision disabilities.*

Support:

- 13 Detectable barriers or barricades communicate very clearly to pedestrians who have vision disabilities that they can no longer proceed in the direction that they are traveling.

Option:

- 14 Advance warning signs may be used singly or in combination.
- 15 Where distances are not displayed on warning signs as part of the message, a supplemental plaque with the distance legend may be mounted immediately below the sign on the same support.

Support:

- 16 Some of the California warning signs used in TTC zones are shown in Figure 6H-101(CA) and Table 6H-1(CA).

### Section 6H.02 Position of Advance Warning Signs

Guidance:

- 01 *Where highway conditions permit, warning signs should be placed in advance of the transition and activity areas at varying distances depending on roadway type, condition, and posted speed. Table 6B-1 contains information regarding the spacing of advance warning signs. Where a series of two or more advance warning signs is used, the closest sign to the transition and activity areas should be placed approximately 100 feet for low-speed urban streets to 1,000 feet or more for freeways and expressways.*
- 02 *Where multiple advance warning signs are needed on the approach to a transition and activity area, the ROAD WORK AHEAD (W20-1) sign should be the first advance warning sign encountered by road users.*

Support:

- 03 Various conditions, such as limited sight distance or obstructions that might require a driver to reduce speed or stop, might require additional advance warning signs.

Option:

- 04 As an alternative to a specific distance on advance warning signs, the word AHEAD may be used. Support:  
05 At TTC zones on lightly-traveled roads, all of the advance warning signs prescribed for major construction might not be needed.

Option:

- 06 Utility work, maintenance, or minor construction can occur within the TTC zone limits of a major construction project, and additional warning signs may be needed.

Guidance:

- 07 *Utility, maintenance, and minor construction signing and TTC should be coordinated with appropriate authorities so that road users are not confused or misled by the additional TTC devices.*

### Section 6H.03 ROAD (STREET) WORK Sign (W20-1)

Guidance:

- 01 *The ROAD (STREET) WORK (W20-1) sign (see Figure 6H-1), which serves as a general warning of obstructions or restrictions, should be located in advance of the work space or any detour, on the road where the work is taking place.*  
02 *Where traffic can enter a TTC zone from a crossroad or a major (high-volume) driveway, an advance warning sign should be used on the crossroad or major driveway.*

Option:

- 03 The legend STREET may be substituted for ROAD and the distance legend may be either XX FEET, XX MILES, or AHEAD.

- 04 The RAMP WORK AHEAD (C23(CA)) sign may be substituted for the W20-1 sign where applicable.

- 05 The ROAD (STREET) WORK Informational plaque (C23B(CA)) may be used with the ROAD (STREET) WORK (W20-1) sign.

**Standard:**

- 06 **The message displayed on the ROAD (STREET) WORK Informational plaque (C23B(CA)) shall be worded in terms common to motorists, as shown in examples below. The height and width of the plate will vary according to the lettering size and message. The width of the plate shall not exceed the overall width of the W20-1 sign.**

Support:

- 07 Following are some example messages:

- A. BRIDGE REPLACEMENT
- B. BRIDGE WIDENING
- C. BRIDGE REPAIR
- D. CURVE IMPROVEMENT
- E. HIGHWAY REALIGNMENT
- F. HIGHWAY WIDENING
- G. HIGHWAY WIDENING AND PAVING
- H. HIGHWAY REHABILITATION
- I. STORM REPAIR
- J. PAVING
- K. SIGNING IMPROVEMENT
- L. PAVEMENT MAINTENANCE
- M. SAFETY IMPROVEMENT

Guidance:

- 08 *The SPECIAL EVENT AHEAD (SC5(CA)) sign should be used in lieu of the ROAD (STREET) WORK (W20-1) sign for special events, such as bike races, movie filming, etc., where the event is on the travel way or close enough or of such a nature as to have a potential effect on motorists, bicyclists and pedestrians.*

### Section 6H.04 DETOUR Sign (W20-2)

~~Guidance:~~

**Standard:**

- 01 **The DETOUR (W20-2) sign (see Figure 6H-1) ~~should~~ shall be used in advance of a road user detour over a different roadway or route. Refer to CVC 21363 for detour signs.**

Option:

- 01 The distance legend may be either XX FEET, XX MILES, or AHEAD.

**Section 6H.05 ROAD (STREET) CLOSED Sign (W20-3)**

Guidance:

- 01 The ROAD (STREET) CLOSED (W20-3) sign (see Figure 6H-1) should be used in advance of the point where a highway is closed to all road users, or to all but local road users.

Option:

- 02 The legend STREET may be substituted for ROAD and the distance legend may be either XX FEET, XX MILES, or AHEAD.

**Section 6H.06 ONE LANE ROAD Sign (W20-4)**

Standard:

- 01 The ONE LANE ROAD (W20-4) sign (see Figure 6H-1) shall be used only in advance of that point where motor vehicle traffic in both directions must use a common single lane (see Section 6E.01).

Option:

- 02 The distance legend may be either XX FEET, XX MILES, or AHEAD.

**Section 6H.07 Lane(s) Closed Signs (W20-5, W20-5a, and W9-3)**

Standard:

- 01 The Lane(s) Closed sign (see Figure 6H-1) shall be used in advance of that point where one or more through lanes of a multi-lane roadway are closed.

- 02 For a single lane closure, the Lane Closed (W20-5) sign (see Figure 6H-1) shall use the legend RIGHT (LEFT) LANE CLOSED. Where two or more adjacent lanes are closed, the W20-5a sign (see Figure 6H-1) shall use the legend XX RIGHT (LEFT) LANES CLOSED.

Option:

- 02a The Lane Closed or LANE(S) CLOSED (W20-5, W20-5a or C20(CA)) sign by itself, or in combination with LEFT (C20A(CA)) plaque and/or Numeral (C20B(CA)) plaque may be used.
- 02b The LANE CLOSED (C30(CA)) sign may be used within a closed lane of a multilane highway as follow-up information to the appropriate advance warning signs. The C30(CA) sign may be repeated at intervals, throughout long lane closures, as a reminder to motorists.
- 02c The words RAMP CLOSED may be used as an alternate message on the C30(CA) signs on surface streets to warn that the upcoming freeway/expressway on ramp is closed.
- 03 The distance legend may be either XX FEET, XX MILES, or AHEAD.

Guidance:

- 04 The Interior Lane Shift (W9-3) sign (see Figure 6H-1) should be used in advance of that point where work occupies an interior lane(s) and approaching motor vehicle traffic is directed to the right or left of the work zone in the lane(s) by using a shifting taper to route traffic around the closed interior lane(s).

Support:

- 05 For moving lane closures on State highways, see Caltrans' Standard Plan T-16. See Section 1A.05 for information regarding this publication.
- 06 Do not use the CENTER LANE CLOSED AHEAD (W9-3) sign for moving lane closures on State highways.

**Section 6H.08 Lane Ends Signs (W4-2 and W9-2a)**

Option:

Guidance:

- 01 The Lane Ends (W4-2) sign (see Figure 6H-1) ~~may~~ **should** be used to warn drivers of the reduction in the number of lanes for moving motor vehicle traffic in the direction of travel on a multi-lane roadway.

Guidance:

- 02 The MERGE HERE TAKE TURNS (W9-2a) sign (see Figure 6H-1) should be used to identify the merge point at which vehicles from alternate lanes take turns merging during Late Merge applications (see Section 6N.19).

### **Section 6H.09 ON RAMP Plaque (W13-4P)**

*Guidance:*

- 01 *When work is being done on a ramp, but the ramp remains open, the ON RAMP (W13-4P) plaque (see Figure 6H-1) should be used to supplement the advance ROAD WORK sign.*

**Standard:**

- 02 **The ON RAMP (W13-4) plaque shall not be used in California due to the potential for conflict if it is used when the work is being done on an off ramp.**

### **Section 6H.10 RAMP NARROWS Sign (W5-4)**

*Guidance:*

- 01 *The RAMP NARROWS (W5-4) sign (see Figure 6H-1) should be used in advance of the point where work on a ramp reduces the normal width of the ramp along a part or all of the ramp.*

**Option:**

- 02 **The ROAD NARROWS (W5-1) sign or NARROW LANE(S) (C12(CA)) sign, as appropriate, may be used instead of the RAMP NARROWS (W5-4) sign. See Sections 2C.17 and 6H.102(CA).**

### **Section 6H.11 SLOW TRAFFIC AHEAD Sign (W23-1)**

**Option:**

- 01 The SLOW TRAFFIC AHEAD (W23-1) sign (see Figure 6H-1) may be used on a shadow vehicle, usually mounted on the rear of the most upstream shadow vehicle, along with other appropriate signs for mobile operations to warn of slow moving work vehicles. A ROAD (STREET) WORK (W20-1) sign may also be used with the SLOW TRAFFIC AHEAD sign.

### **Section 6H.12 EXIT OPEN and EXIT CLOSED Signs (E5-2 and E5-2a)**

**Option:**

- 01 An EXIT OPEN (E5-2) or EXIT CLOSED (E5-2a) sign (see Figure 6H-1) may be used to supplement other warning signs where work is being conducted in the vicinity of an exit ramp and where the exit maneuver for vehicular traffic using the ramp is different from the normal condition.

### **Section 6H.13 EXIT ONLY Sign (E5-3)**

**Option:**

- 01 An EXIT ONLY (E5-3) sign (see Figure 6H-1) may be used to supplement other warning signs where work is being conducted in the vicinity of an exit ramp and where the exit maneuver for vehicular traffic using the ramp is different from the normal condition.

### **Section 6H.14 NEW TRAFFIC PATTERN AHEAD Sign (W23-2)**

**Option:**

- 01 A NEW TRAFFIC PATTERN AHEAD (W23-2) sign (see Figure 6H-1) may be used on the approach to an intersection or along a section of roadway to provide advance warning of a change in traffic patterns, such as revised lane usage, roadway geometry, or signal phasing.

*Guidance:*

- 02 *To retain its effectiveness, the W23-2 sign should be displayed for up to 2 weeks, and then it should be covered or removed until it is needed again.*

### **Section 6H.15 Flagger Signs (W20-7 and W20-7a)**

*Guidance:*

- 01 *The Flagger (W20-7) sign (see Figure 6H-1) should be used in advance of any point where a flagger is stationed to control road users.*

**Option:**

- 02 A distance legend may be displayed on a supplemental plaque below the Flagger sign. The sign may be used with appropriate legends or in conjunction with other warning signs, such as the BE PREPARED TO STOP (W3-4) sign (see

Figure 6H-1).

- 03 The FLAGGER (W20-7a) word message sign with a distance legend may be substituted for the Flagger (W20-7) sign.

### **Section 6H.16 Two-Way Traffic Sign (W6-3)**

*Guidance:*

- 01 *When one roadway of a normally-divided highway is closed, with two-way vehicular traffic maintained on the other roadway, the Two-Way Traffic (W6-3) sign (see Figure 6H-1) should be used at the beginning of the two-way vehicular traffic section and at intervals to remind road users of opposing vehicular traffic.*
- 02 *The Two-Way Traffic (W6-3) sign should also be used at locations where motorists could perceive that they are on a one-way roadway when, in fact, they are on a two lane, two-way highway.*

*Support:*

- 03 Following are some typical situations:
- A. Construction sites where a two-lane highway is being converted to a freeway or an expressway.
  - B. Two-lane, two-way highways where ultimate freeway or expressway right-of-way has been purchased and grading for the full width has been completed.
  - C. Two-lane, two-way highways following long sections of multi-lane freeway or expressway.
  - D. Lane-shift as shown in Figure 6P-102(CA).

### **Section 6H.17 Narrow Two-Way Traffic Sign (W6-4)**

**Standard:**

- 01 The Narrow Two-Way Traffic (W6-4) sign (see Figure 6H-1) shall be an upright, retroreflective orange-colored sign placed on a flexible support and sized at least 12 inches wide by 18 inches high.

*Support:*

- 02 The Narrow Two-Way Traffic (W6-4) sign is intended for mounting only on a flexible support in a series along the center line to separate opposing vehicular traffic on a two-lane, two-way operation.

**Standard:**

- 03 Narrow Two-Way Traffic signs shall not be placed within pedestrian crossings.

### **Section 6H.18 Workers Signs (W21-1 and W21-1a)**

*Option:*

- 01 A Workers (W21-1) sign (see Figure 6H-1) may be used to alert road users of workers in or near the roadway.

*Guidance:*

- 02 *In the absence of other warning devices, a Workers sign should be used when workers are in the roadway.*

*Option:*

- 03 The WORKERS (W21-1a) word message sign may be used as an alternate to the Workers (W21-1) symbol sign.

### **Section 6H.19 FRESH OIL (TAR) Sign (W21-2)**

*Guidance:*

- 01 *The FRESH OIL (TAR) (W21-2) sign (see Figure 6H-1) should be used to warn road users of the surface treatment.*

### **Section 6H.20 ROAD MACHINERY AHEAD Sign (W21-3)**

*Option:*

- 01 The ROAD MACHINERY AHEAD (W21-3) sign (see Figure 6H-1) may be used to warn of machinery operating in or adjacent to the roadway.

### **Section 6H.21 Motorized Traffic Signs (W8-6 and W11-10)**

*Option:*

- 01 Motorized Traffic (W8-6 and W11-10 or C44(CA)) signs may be used to alert road users to locations where unexpected travel on the roadway or entries into or departures from the roadway by construction vehicles might occur. The TRUCK CROSSING (W8-6) or TRUCKS ENTERING EXITING (C44(CA)) word message sign may be used as an alternate to the Truck (W11-10) symbol sign (see Figure 6H-1) where there is an established construction vehicle



crossing, **entrance, or exit** of the roadway.

Support:

- 02 These locations might be relatively confined or might occur randomly over a segment of roadway.

## **Section 6H.22 Shoulder Work Signs (W21-5, W21-5a, and W21-5b)**

Support:

- 01 Shoulder Work signs (see Figure 6H-1) warn of maintenance, reconstruction, or utility operations on the highway shoulder where the roadway is unobstructed.

**Standard:**

- 02 **The Shoulder Work sign shall have the legend SHOULDER WORK (W21-5), RIGHT (LEFT) SHOULDER CLOSED (W21-5a), or RIGHT (LEFT) SHOULDER CLOSED XX FT or AHEAD (W21- 5b), or SHOULDER WORK AHEAD (C24(CA)), or SHOULDER CLOSED (C30A(CA)).**

Option:

- 03 The Shoulder Work sign may be used in advance of the point on a non-limited access highway where there is shoulder work. It may be used singly or in combination with a ROAD WORK NEXT XX MILES or ROAD WORK AHEAD sign.

*Guidance:*

- 04 *On freeways and expressways, the RIGHT (LEFT) SHOULDER CLOSED XX FT or AHEAD (W21- 5b) sign followed by RIGHT (LEFT) SHOULDER CLOSED (W21-5a) sign should be used in advance of the point where the shoulder work occurs and should be preceded by a ROAD WORK AHEAD sign.*

Option:

- 05 The SHOULDER WORK AHEAD (C24(CA)) sign may be used in advance of the point where shoulder work or utility operations involve the shoulder but the roadway is unobstructed.
- 06 The SHOULDER CLOSED (C30A(CA)) sign may be used within a shoulder area that has been closed due to work near the traveled way. The C30A(CA) sign is supplemental to appropriate advance warning signs.

## **Section 6H.23 SURVEY CREW Sign (W21-6)**

*Guidance:*

- 01 *The SURVEY CREW (W21-6) sign (see Figure 6H-1) should be used to warn of surveying crews working in or adjacent to the roadway.*

## **Section 6H.24 UTILITY WORK Sign (W21-7)**

Option:

- 01 The UTILITY WORK (W21-7) sign (see Figure 6H-1) may be used as an alternate to the ROAD (STREET) WORK (W20-1) sign for utility operations on or adjacent to a highway.

Support:

- 02 Typical examples of where the UTILITY WORK sign is used appear in Figures 6P-4, 6P-6, 6P-10, 6P-15, 6P-18, 6P-21, 6P-22, 6P-26, and 6P-33.

Option:

- 03 The distance legend may be either XX FEET, XX MILES, or AHEAD.

## **Section 6H.25 Signs for Blasting Areas**

Support:

- 01 Radio-Frequency (RF) energy can cause the premature firing of electric detonators (blasting caps) used in TTC zones.

**Standard:**

- 02 **Road users shall be warned where blasting operations occur. A sequence of signs shall be prominently displayed to warn all road users of blasting operations and to direct operators of mobile radio equipment, including cellular telephones, to turn off transmitters in a blasting area. These signs shall be covered or removed when there are no explosives in the area or the area is otherwise secured.**
- 03 **The BLASTING ZONE AHEAD (W22-1) sign (see Figure 6H-1) shall be used in advance of any TTC zone where explosives are being used. The TURN OFF 2-WAY RADIO AND CELL PHONE (R22-2) and END BLASTING ZONE (W22-3) signs shall be used in sequence with this sign.**

04 The **TURN OFF 2-WAY RADIO AND CELL PHONE (R22-2)** sign (see Section 6G.11 and Figure 6G-1) shall follow the **BLASTING ZONE AHEAD (W22-1)** sign and shall be placed at least 1,000 feet before the beginning of the blasting zone.

05 The **END BLASTING ZONE (W22-3)** sign (see Figure 6H-1) shall be placed a minimum of 1,000 feet past the blasting zone.

Option:

06 The **END BLASTING ZONE** sign may be placed either with or preceding the **END ROAD WORK** sign.

#### **Section 6H.26 Shoulder Signs and Plaque (W8-4, W8-9, W8-17, and W8-17P)**

Option:

01 The **SOFT SHOULDER (W8-4)** sign (see Figure 6H-1) may be used to warn of a soft shoulder condition.

02 The **LOW SHOULDER (W8-9)** sign (see Figure 6H-1) may be used to warn of a shoulder condition where there is an elevation difference of 3 inches or less between the shoulder and the travel lane.

Guidance:

03 *The **Shoulder Drop Off (W8-17)** sign (see Figure 6H-1) should be used when an unprotected shoulder drop-off, adjacent to the travel lane, exceeds 3 inches in depth for a continuous length along the roadway, based on engineering judgment.*

Option:

04 A **SHOULDER DROP-OFF (W8-17P)** supplemental plaque (see Figure 6H-1) may be mounted below the **W8-17** sign.

05 The **NO SHOULDER (C31A(CA))** sign may be used where no earth, gravel or paved shoulders are available for vehicles to pull off the roadway.

06 The black on orange background **LOW SHOULDER (W8-9)** sign may be used on State highways to warn of a shoulder condition where there is an elevation difference of less than 3 inch between the shoulder and the travel lane.

#### **Section 6H.27 UNEVEN LANES Sign (W8-11)**

Guidance:

01 *The **UNEVEN LANES (W8-11)** sign (see Figure 6H-1) should be used during operations that create a difference in elevation between adjacent lanes that are open to travel.*

02 *The **UNEVEN PAVEMENT (C46(CA))** sign (see Figure 6H-101(CA)) should be used during operations that create a difference in elevation in the pavement that is not along a lane line.*

Support:

03 Uneven pavement conditions include elevation difference adjacent to lanes but not at the lane line; between a vehicle lane and a bicycle lane or an unmarked shoulder; and a step in any direction in the pavement. A step is defined as a ridge in the pavement, such as that which might exist between the pavement and a concrete gutter or manhole cover; or that might exist between two pavement blankets when the top level does not extend to the edge of the roadway.

Option:

04 In situations where there is a need to warn bicyclists or other road users of the uneven pavement condition the **UNEVEN PAVEMENT (C46P(CA))** plaque (see Figure 6H-101(CA)) may be used.

Standard:

05 A **C46P(CA)** plaque shall not be used alone. If a **C46P(CA)** plaque is used, it shall be mounted below either a **Vehicular Traffic Warning** sign (see Section 2C.54) or a **Non-Vehicular Warning** sign (see Section 2C.55). The background color of the **C46P(CA)** plaque shall match the background color of the warning sign with which it is displayed.

Option:

06 When warning is intended to be directed primarily to motorcyclists, use of the **UNEVEN LANES (W8-11)** sign or **UNEVEN PAVEMENT (C46(CA))** sign with motorcycle plaque (**W8-15P**) may be considered.

Support:

07 See Table 6H-101(CA) for pavement surface tolerances for each road user group.

#### **Section 6H.28 STEEL PLATE AHEAD Sign (W8-24)**

Option:

- 01 A STEEL PLATE AHEAD (W8-24) sign (see Figure 6H-1) may be used to warn road users that the presence of a temporary steel plate(s) might make the road surface uneven and might create slippery conditions during wet weather.

### **Section 6H.29 NO CENTER LINE Sign (W8-12)**

#### *Guidance:*

- 01 The NO CENTER LINE (W8-12) sign (see Figure 6H-1) should be used when the work obliterates the center line pavement markings *and when temporary pavement centerline markings are not provided*.. This sign should be placed at the beginning of the TTC zone and repeated at 2-mile intervals in long TTC zones.

#### *Support:*

- 02 Section 6J.02 contains information regarding temporary markings.

#### **Standard:**

- 03 The NO CENTER STRIPE (W8-12) sign shall not be used on State highways. Whenever construction or maintenance work causes obliteration of center stripe, temporary or permanent center stripe shall be in place prior to opening the State highway to public traffic.

### **Section 6H.30 Reverse Curve Signs (W1-4 Series)**

#### *Guidance:*

- 01 In order to give road users advance notice of a lane shift, a Reverse Curve (W1-4, W1-4b, or W1-4c) sign (see Figure 6H-1) should be used when a lane (or lanes) is being shifted to the left or right. If the design speed of the curves is 30 mph or less, a Reverse Turn (W1-3) sign should be used.

#### **Standard:**

- 02 If a Reverse Curve (or Turn) sign is used, the direction of the reverse curve (or turn) shall be appropriately illustrated. Except as provided in Paragraph 3 of this Section, the number of lanes illustrated on the sign shall be the same as the number of through lanes available to road users.

#### *Option:*

- 03 Where two or more lanes are being shifted, a W1-4 (or W1-3) sign with an ALL LANES (W24-1cP) plaque (see Figure 6H-1) may be used instead of a sign that illustrates the number of lanes.
- 04 Where more than three lanes are being shifted, the Reverse Curve (or Turn) sign may be rectangular.

### **Section 6H.31 Double Reverse Curve Signs (W24-1 Series)**

#### *Option:*

- 01 The Double Reverse Curve (W24-1, W24-1a, or W24-1b) sign (see Figure 6H-1) may be used where the tangent distance between two reverse curves is less than 600 feet, thus making it difficult for a second Reverse Curve (W1-4 series) sign to be placed between the curves. If the design speed of the curves is 30 mph or less, Double Reverse Turn signs may be used.

#### **Standard:**

- 02 If a Double Reverse Curve (or Turn) sign is used, the direction of the double reverse curve (or turn) shall be appropriately illustrated. Except as provided in Paragraph 3 of this Section, the number of lanes illustrated on the sign shall be the same as the number of through lanes available to road users.

#### *Option:*

- 03 Where two or more lanes are being shifted, a W24-1 (or Double Reverse Turn sign showing one lane) sign with an ALL LANES (W24-1cP) plaque (see Figure 6H-1) may be used instead of a sign that illustrates the number of lanes.
- 04 Where more than three lanes are being shifted, the Double Reverse Curve (or Turn) sign may be rectangular.

### **Section 6H.32 Advisory Speed Plaque (W13-1P)**

#### *Option:*

- 01 In combination with a warning sign, an Advisory Speed (W13-1P) plaque (see Figure 6H-1) may be used to indicate a recommended speed through the TTC zone.

#### **Standard:**

- 02 The Advisory Speed plaque shall not be used in conjunction with any sign other than a warning sign, nor shall it be used alone. When used with orange TTC zone signs, this plaque shall have a black legend and border on an orange background. The plaque shall be at least 24 x 24 inches in size when used with a sign that is 36 x 36



**inches or larger. Except in emergencies, an Advisory Speed plaque shall not be mounted until the recommended speed is determined by the highway agency.**

Support:

- 03 Warning signs with advisory speed plaques (see Section 2C.59) inform drivers of the recommended operating speed based on temporary conditions within a TTC zone. Examples include narrow lanes, temporary diversion (reverse curves), lane shifts, sight distance restrictions, rough road surface, bumps, low/no shoulder, workers on foot, work vehicles or equipment close to the open travel lane, or other conditions that indicate the need for reduced speed.
- 04 AASHTO and ITE design documents contain established engineering practices for the determination of the recommended advisory speeds for horizontal curves or locations with limited sight distance.

### **Section 6H.33 Supplementary Distance Plaque (W7-3aP)**

Option:

- 01 In combination with a warning sign, a Supplementary Distance (W7-3aP) plaque (see Figure 6H-1) with the legend NEXT XX MILES may be used to indicate the length of highway over which a work activity is being conducted, or over which a condition exists in the TTC zone.
- 02 In long TTC zones, Supplementary Distance plaques with the legend NEXT XX MILES may be placed in combination with warning signs at regular intervals within the zone to indicate the remaining length of highway over which the TTC work activity or condition exists.

**Standard:**

- 03 **The Supplementary Distance plaque with the legend NEXT XX MILES shall not be used in conjunction with any sign other than a warning sign, nor shall it be used alone. When used with orange TTC zone signs, this plaque shall have a black legend and border on an orange background. The plaque shall be at least 30 x 24 inches in size when used with a sign that is 36 x 36 inches or larger.**

*Guidance:*

- 04 *When used in TTC zones, the Supplementary Distance plaque with the legend NEXT XX MILES should be placed below the initial warning sign designating that, within the approaching zone, a temporary work activity or condition exists.*

### **Section 6H.34 Motorcycle Plaque (W8-15P)**

Option:

- 01 A Motorcycle (W8-15P) plaque (see Figure 6H-1) may be mounted below a LOOSE GRAVEL (W8- 7) sign, [an UNEVEN LANES \(W8-11\) sign](#), [an UNEVEN PAVEMENT \(C46\(CA\)\) sign](#), a GROOVED PAVEMENT (W8-15) sign, a METAL BRIDGE DECK (W8-16) sign, or a STEEL PLATE AHEAD (W8-24) sign if the warning is intended to be directed primarily to motorcyclists.

### **Section 6H.35 ROAD WORK NEXT XX MILES Sign (G20-1)**

*Guidance:*

- 01 *The ROAD WORK NEXT XX MILES (G20-1) sign (see Figure 6H-1) should be installed in advance of TTC zones that are more than 2 miles in length.*

Option:

- 02 The ROAD WORK NEXT XX MILES sign may be mounted on a Type 3 Barricade. The sign may also be used for TTC zones of shorter length.

**Standard:**

- 03 **The distance displayed on the ROAD WORK NEXT XX MILES sign shall be stated to the nearest whole mile.**

*Option:*

- 04 [The word STATE HIGHWAY may be substituted for ROAD, where applicable.](#)
- 05 [The word CONSTRUCTION may be substituted for WORK, where applicable.](#)

### **Section 6H.36 END ROAD WORK Sign (G20-2)**

*Guidance:*

- 01 *When used, the END ROAD WORK (G20-2) sign (see Figure 6H-1) should be placed near the downstream end of*

*the termination area, as determined by engineering judgment.*

Option:

02 The END ROAD WORK sign may be installed on the back of a warning sign facing the opposite direction of road users or on the back of a Type 3 Barricade.

03 The END ROAD WORK (G20-2) sign may be omitted if the end of the work zone is obvious to motorists or falls within a larger project's limits.

Support:

04 Conditions could be such that posting of END ROAD WORK (G20-2) signs is not helpful. For example, they can be omitted if other TTC zones begin within 1 mile of the end of the workspace in rural areas, or about 0.25 miles within urban areas. For normal daytime maintenance operations, the G20-2 sign is optional.

## **Section 6H.37 PILOT CAR FOLLOW ME Sign (G20-4)**

**Standard:**

01 The PILOT CAR FOLLOW ME (G20-4) sign (see Figure 6H-1) shall be mounted in a conspicuous position on the top or on the rear of a vehicle used for guiding one-way vehicular traffic through or around a TTC zone (see Section 6E.04).

## **Section 6H.38 Other Warning Signs**

Option:

01 Advance warning signs may be used by themselves or with other advance warning signs.

02 Besides the warning signs specifically related to TTC zones, several other warning signs in Part 2 may apply in TTC zones.

03 Word message warning signs other than those classified and specified in this Manual and the “Standard Highway Signs” publication (see Section 1A.05) may be developed and used based on engineering judgment to warn of special conditions in TTC zones.

**Standard:**

04 Except as provided in Sections 6F.01 and 6H.01, other warning signs that are used in TTC zones shall have black legends and borders on an orange background.

*Guidance:*

05 Other warning signs should comply with the general requirements of color, shape, and alphabet size and series. The sign message should be brief, legible, and clear.

## **Section 6H.101(CA) LOOSE GRAVEL Sign (W8-7)**

*Guidance:*

01 The LOOSE GRAVEL (W8-7) sign should be used on chip seal jobs or other areas to warn motorists that there is loose gravel on the roadway.

**Standard:**

02 When used, the W8-7 sign shall be placed at the beginning of work and at maximum 2000 feet intervals.

Option:

03 When warning is intended to be directed primarily to motorcyclists, use of the W8-7 sign with motorcycle plaque (W8-15P) may be considered.

04 The Advisory Speed (W13-1P) plaque may be used in combination with the W8-7 sign to indicate the need to decrease speed at a particular location. See Section 6B.01.

*Guidance:*

05 The advisory speed should be reasonable or prudent, considering weather, visibility, traffic, surface condition and width of the roadway.

**Standard:**

06 On highways with speed limits of 40 mph or higher for seal coat projects, the W13-1P (35 mph or lower) plaque shall be used to supplement the W8-7 sign during placement and/or brooming of screenings.

## **Section 6H.102(CA) NARROW LANE(S) Sign (C12(CA))**

Option:

01 The NARROW LANE(S) (C12(CA)) sign may be used, when appropriate, to warn the approaching motorist of a narrow lane condition.

Guidance:

02 When used, the C12(CA) sign should be used in conjunction with an Advisory Speed (W13-1P) plaque. See Section 6B.01.

### **Section 6H.103(CA) OPEN TRENCH Sign (C27(CA))**

**Standard:**

01 The OPEN TRENCH (C27(CA)) sign shall be used in advance of open trenches in/or adjacent to roadway.

02 The edge of the traveled way shall be defined by edge line delineation consisting of appropriate markers or striping. Edge line delineation shall be white when located on the right of traffic and yellow when located on the left of traffic.

Guidance:

03 Trenches in excess of 0.15 feet in depth but not exceeding 0.25 feet in depth that are less than 8 feet from the edge of traveled way should be identified by LOW SHOULDER (W8-9) signs set in the trench adjacent to the edge of pavement at intervals not to exceed every 2,000 feet.

Option:

04 Portable delineators may be placed at intervals not to exceed 100 feet in lieu of edge line delineation.

**Standard:**

05 Trenches in excess of 0.25 feet but less than 2.5 feet in depth that are less than 8 feet from the edge of traveled way shall be identified by alternating C27(CA) and NO SHOULDER (C31A(CA)) signs set in the trench at intervals not to exceed 2,000 feet.

Guidance:

06 Channelizers (CA) or portable delineators should be placed 2 feet to 6 feet outside of the edge line at 100 foot intervals for the conditions described above.

07 Trenches in excess of 0.25 feet in depth but not exceeding 2.5 feet in depth that are 8 feet to 15 feet from the edge of traveled way should be identified by C27(CA) signs set in the trench at intervals not to exceed every 2,000 feet. Portable delineators should be placed at 200 foot intervals within 2 feet from the edge of the trench and at 100 foot intervals for edge conditions exceeding 0.5 feet in depth.

08 Trenches in excess of 0.5 feet in depth but not exceeding 2.5 feet in depth that are more than 15 feet from the edge of traveled way at locations where a recovery area was available prior to construction should be identified by placing delineators at 200 foot intervals within 2 feet from the edge of the trench and by placing C27(CA) signs in the trench at intervals not to exceed 2,000 feet.

**Standard:**

09 Signing for trenches in excess of 2.5 feet in depth shall be based upon engineering judgment or studies (as noted in Section 1D.03) to ensure proper visibility of barricades and signing.

Support:

10 Refer to Tables 6K-101(CA) and 6B-1.

### **Section 6H.104(CA) Object Markers**

**Standard:**

01 When used in work zones, the Type N-3(CA) or OM1-3 object markers shall have an orange or fluorescent orange retroreflective background.

02 When used in work zones, the Type P(CA), R(CA), OM-3L, OM-3R and OM-3C object marker shall have alternating retroreflective orange and white stripes.

Support:

03 Figure 6H-102(CA) shows examples of object markers in TTC zones.

04 See Chapter 2C for more details.

### **Section 6H.105(CA) Slow For The Cone Zone (SC19(CA) and SC20(CA)) Signs**

Option:

01 The Slow For The Cone Zone (SC19(CA)) and SLOW FOR THE CONE ZONE (SC20(CA)) signs (see Figures 6P-32, 6P-33 & 6P-36A(CA)) may be used to remind motorists to slow down when entering a temporary traffic control (TTC) zone to improve worker and road user safety.

02 If used, SC19(CA) and/or SC20(CA) signs may be used within the advance warning area, transition area, or activity area of a TTC zone.

03 A pictograph may be used on the SC19(CA) sign to identify a governmental jurisdiction, an area of jurisdiction, a governmental agency, a military base or branch of service, a governmental-approved university or college, or a governmental-approved institution.

**Standard:**

04 If a pictograph is used on the SC19(CA) sign, the maximum dimension (height or width) of a pictograph shall not exceed two times the letter height of the largest legend used on the sign.

**Section 6H.106(CA) FRESH CONCRETE Sign (C43(CA))**

**Option:**

01 The FRESH CONCRETE (C43(CA)) sign (see Figure 6H-101(CA)) may be used to warn road users of the surface treatment.

**Standard:**

02 **When used, the FRESH CONCRETE (C43(CA)) sign shall be placed at the beginning of the pavement work area.**

**Guidance:**

03 *The FRESH CONCRETE (C43(CA)) sign should remain in place during the entire curing period.*

**Section 6H.107(CA) CAUTION FREQUENT STOPPING AND BACKING STAY BACK 100 FEET Sign (SC21(CA))**

**Option:**

01 For mobile operations, CAUTION FREQUENT STOPPING AND BACKING STAY BACK 100 FEET (SC21(CA)) sign (see Figure 6H-101(CA)) may be mounted on a work vehicle to warn road users and workers of the frequent stopping and backing maneuvers made by the vehicle.