

INDIANA
**Manual on Uniform
Traffic Control Devices**
for Streets and Highways

2011 Edition with Revision 2



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Table I-3. Revision Summary (Sheet 3 of 3)

Revision #	Part	Section/ Figure/ Table	Page No.	Revision
1	Part 6	Table 6F-1 (Sheet 3 of 3)	590	Name of the signs "XR2-6", "XR2-6a", and "XR2-6b" changed to "XW2-6", "XW2-6a", and "XW2-6b"
1	Part 6	Figure 6F-3 (Sheet 1 of 2)	594	G20-5aP "Work Zone" plaque deleted and XG20-5P "Worksite" plaque added
1	Part 6	Section 6F.12	596	Paragraph 1 changed plaque from "Work Zone" G20-5aP to "Worksite" XG20-5P. Paragraph 6 name of the signs "XR2-6", "XR2-6a", and "XR2-6b" changed to "XW2-6", "XW2-6a", and "XW2-6b"
1	Part 6	Figure 6F-4 (Sheet 3 of 3)	600	Image of W20-5 sign corrected
1	Part 7	Table 7B-1	755	Size for "Watch for School Bus" sign (S3-Y3) changed for Conventional Road from 30"x30" to 36" x 36", and for minimum from 36" x 36" to 30" x 30"
1	Part 9	Table 9B-1 (Sheet 1 of 2)	817	In the sign or Plaque column, the name of of the W1-1,2,3,4,5 changed from "Turn and Curve Warning" to "Horizontal Alignment"
1	Part 9	Table 9B-1 (Sheet 2 of 2)	818	In the sign or Plaque column, the numbers of the digits for the D10-1a, D10-2a, and D10-3a signs changed to 2, 3, and 4 respectively
1	Appendix	Table A2-4	A2-1	The "010" in the mph column changed to "10". The conversion for 65 mph to 110 km/h deleted and a conversion for 70 mph to 115 km/h added.
2	Part 2	Table 2B-1	49	Deleted Left on Arrow Only Sign (R10-Y5a) from Table.
2	Part 2	Section 2B.53	95	Deleted Left on Arrow Only Sign (R10-Y5a). It is incompatible with the red arrow signal indication.
2	Part 4	Section 4D.32	503	The prohibition against the use of portable traffic signals is eliminated. Standards regarding proper use of portable traffic signals added.
2	Part 6	Section 6F.84	625	The requirement that temporary traffic signals not be mounted on trailers is eliminated; portable signals not allowed for mobile and short duration work.

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Table 2B-1. Regulatory Sign and Plaque Sizes (Sheet 4 of 4)

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
SUNDAY (and times) (2 lines) (plaque)	R10-20aP	2B.53	24 x 18	24 x 18	—	—	—	—
Crosswalk, Stop on Red	R10-23	2B.53	24 x 30	24 x 30	—	—	—	—
Push Button To Turn On Warning Lights	R10-25	2B.52	9 x 12	9 x 12	—	—	—	—
Left Turn Yield on Flashing Red Arrow After Stop	R10-27	2B.53	30 x 36	30 x 36	—	—	—	—
XX Vehicles Per Green	R10-28	2B.56	24 x 30	24 x 30	—	—	—	—
XX Vehicles Per Green Each Lane	R10-29	2B.56	36 x 24	36 x 24	—	—	—	—
Right Turn on Red Must Yield to U-Turn	R10-30	2B.54	30 x 36	30 x 36	—	—	—	—
At Signal (plaque)	R10-31P	2B.53	24 x 9	24 x 9	—	—	—	—
Push Button for 2 Seconds for Extra Crossing Time	R10-32P	2B.52	9 x 12	9 x 12	—	—	—	—
Keep Off Median	R11-1	2B.57	24 x 30	24 x 30	—	—	—	—
Road Closed	R11-2	2B.58	48 x 30	48 x 30	—	—	—	—
Road Closed - Local Traffic Only	R11-3a,3b,4	2B.58	60 x 30	60 x 30	—	—	—	—
Weight Limit	R12-1,2	2B.59	24 x 30	24 x 30	36 x 48	—	—	36 x 48
Weight Limit	R12-3	2B.59	24 x 36	24 x 36	—	—	—	—
Weight Limit	R12-4	2B.59	36 x 24	36 x 24	—	—	—	—
Weight Limit	R12-5	2B.59	24 x 36	24 x 36	36 x 48	48 x 60	—	—
Weigh Station	R13-Y2	2B.60	72 x 54	72 x 54	96 x 72	120 x 90	—	—
Truck Route	R14-1	2B.61	24 x 18	24 x 18	—	—	—	—
Hazardous Material	R14-2,3	2B.62	24 x 24	24 x 24	30 x 30	36 x 36	—	42 x 42
National Network	R14-4,5	2B.63	30 x 30	30 x 30	36 x 36	36 x 36	—	42 x 42
Fender Bender Move Vehicles	R16-4	2B.65	36 x 24	36 x 24	48 x 36	60 x 48	—	48 x 36
Lights On When Using Wipers or Raining	R16-5,6	2B.64	24 x 30	24 x 30	36 x 48	48 x 60	—	36 x 48
Turn On Headlights Next XX Miles	R16-7	2B.64	48 x 15	48 x 15	72 x 24	96 x 30	—	72 x 24
Turn On, Check Headlights	R16-8,9	2B.64	30 x 15	30 x 15	48 x 24	60 x 30	—	48 x 24
Begin, End Daytime Headlight Section	R16-10,11	2B.64	48 x 15	48 x 15	72 x 24	96 x 30	—	72 x 24
Truck Speed Limit Sign	R2-Y2	2B.14	—	—	—	48 x 60	—	—
Trucks And Vehicles With Trailers Use Right Lane	R4-Y9	2B.31	—	—	—	120 x 48	—	—
Trucks And Vehicles With Trailers Use Right Two Lanes	R4-Y10	2B.31	—	—	—	120 x 48	—	—
No Pedestrians Bicycles Motorized Bicycles Non-Motorized Traffic	R5-Y10d	2B.39	—	—	—	72 x 36	—	—
No Stopping Standing Or Parking	R8-Y9	2B.46	—	30 x 36	—	48 x 60	—	—
Wait Delayed Signal	R10-Y14	2B.53	30 x 36	30 x 36	48 x 60	—	24 x 30	48 x 60

* See Table 9B-1 for minimum size required for signs on bicycle facilities

- Notes: 1. Larger signs may be used when appropriate
 2. Dimensions in inches are shown as width x height

07 **Where side roads intersect a multi-lane street or highway that has a speed limit of 45 mph or higher, the minimum size of the STOP signs facing the side road approaches, even if the side road only has one approach lane, shall be 36 x 36 inches.**

08 **Where side roads intersect a multi-lane street or highway that has a speed limit of 40 MPH or lower, the minimum size of the STOP signs facing the side road approaches shall be as shown in the Single Lane or Multi-lane columns of Table 2B-1 based on the number of approach lanes on the side street approach.**

Guidance:

09 *The minimum sizes for regulatory signs facing traffic on exit and entrance ramps should be as shown in the column of Table 2B-1 that corresponds to the mainline roadway classification (Expressway or Freeway). If a minimum size is not provided in the Freeway column, the minimum size in the Expressway column should be used. If a minimum size is not provided in the Freeway or Expressway Column, the size in the Oversized column should be used.*

Section 2B.04 Right-of-Way at Intersections

Support:

- 01 State or local laws written in accordance with the “Uniform Vehicle Code” (see Section 1A.11) establish the right-of-way rule at intersections having no regulatory traffic control signs such that the driver of a vehicle approaching an intersection must yield the right-of-way to any vehicle or pedestrian already in the intersection. When two vehicles approach an intersection from different streets or highways at approximately the same time, the right-of-way rule requires the driver of the vehicle on the left to yield the right-of-way to the vehicle on the right. The right-of-way can be modified at through streets or highways by placing YIELD (R1-2) signs (see Sections 2B.08 and 2B.09) or STOP (R1-1) signs (see Sections 2B.05 through 2B.07) on one or more approaches.

Guidance:

- 02 *Engineering judgment should be used to establish intersection control. The following factors should be considered:*
- A. *Vehicular, bicycle, and pedestrian traffic volumes on all approaches;*
 - B. *Number and angle of approaches;*
 - C. *Approach speeds;*
 - D. *Sight distance available on each approach; and*
 - E. *Reported crash experience.*
- 03 *YIELD or STOP signs should be used at an intersection if one or more of the following conditions exist:*
- A. *An intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law;*
 - B. *A street entering a designated through highway or street; and/or*
 - C. *An unsignalized intersection in a signalized area.*
- 04 *In addition, the use of YIELD or STOP signs should be considered at the intersection of two minor streets or local roads where the intersection has more than three approaches and where one or more of the following conditions exist:*
- A. *The combined vehicular, bicycle, and pedestrian volume entering the intersection from all approaches averages more than 2,000 units per day;*
 - B. *The ability to see conflicting traffic on an approach is not sufficient to allow a road user to stop or yield in compliance with the normal right-of-way rule if such stopping or yielding is necessary; and/or*
 - C. *Crash records indicate that five or more crashes that involve the failure to yield the right-of-way at the intersection under the normal right-of-way rule have been reported within a 3-year period, or that three or more such crashes have been reported within a 2-year period.*
- 05 *YIELD or STOP signs should not be used for speed control.*

Support:

- 06 Section 2B.07 contains provisions regarding the application of multi-way STOP control at an intersection.

Guidance:

- 07 *Once the decision has been made to control an intersection, the decision regarding the appropriate roadway to control should be based on engineering judgment. In most cases, the roadway carrying the lowest volume of traffic should be controlled.*
- 08 *A YIELD or STOP sign should not be installed on the higher volume roadway unless justified by an engineering study.*

Support:

- 09 The following are considerations that might influence the decision regarding the appropriate roadway upon which to install a YIELD or STOP sign where two roadways with relatively equal volumes and/or characteristics intersect:
- A. *Controlling the direction that conflicts the most with established pedestrian crossing activity or school walking routes;*
 - B. *Controlling the direction that has obscured vision, dips, or bumps that already require drivers to use lower operating speeds; and*
 - C. *Controlling the direction that has the best sight distance from a controlled position to observe conflicting traffic.*

Standard:

- 10 **Because the potential for conflicting commands could create driver confusion, YIELD or STOP signs shall not be used in conjunction with any traffic control signal operation, except in the following cases:**
- A. If the signal indication for an approach is a flashing red at all times;**
 - B. If a minor street or driveway is located within or adjacent to the area controlled by the traffic control signal, but does not require separate traffic signal control because an extremely low potential for conflict exists; or**

Section 2B.53 Traffic Signal Signs (R10-5 through R10-30)**Option:**

01 To supplement traffic signal control, Traffic Signal signs R10-5 through R10-30 may be used to regulate road users.

02 Traffic Signal signs (see Figure 2B-27) may be installed at certain locations to clarify signal control. Among the legends that may be used for this purpose are LEFT ON GREEN ARROW ONLY (R10-5), STOP HERE ON RED (R10-6 or R10-6a) for observance of stop lines, DO NOT BLOCK INTERSECTION (R10-7) for avoidance of traffic obstructions, USE LANE(S) WITH GREEN ARROW (R10-8) for obedience to lane-use control signals (see Chapter 4M), LEFT TURN YIELD ON GREEN (symbolic circular green) (R10-12), and LEFT TURN, WAIT DELAYED SIGNAL (R10-Y14), YIELD ON FLASHING RED ARROW AFTER STOP (R10-27).

Guidance:

03 *If used, the LEFT ON GREEN ARROW ONLY (R10-5) sign, the LEFT TURN YIELD ON GREEN (symbolic circular green) (R10-12) sign, or the LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP (R10-27) sign should be located adjacent to the left-turn signal face.*

Option:

04 If needed for additional emphasis, an additional LEFT TURN YIELD ON GREEN (symbolic circular green) (R10-12) sign with an AT SIGNAL (R10-31P) supplemental plaque (see Figure 2B-27) may be installed in advance of the intersection.

05 In situations where traffic control signals are coordinated for progressive timing, the Traffic Signal Speed (I1-1) sign may be used (see Section 2H.03).

Standard:

06 **The CROSSWALK STOP ON RED (symbolic circular red) (R10-23) sign (see Figure 2B-27) shall only be used in conjunction with pedestrian hybrid beacons (see Section 4F.02).**

07 **The EMERGENCY SIGNAL (R10-13) sign (see Figure 2B-27) shall be used in conjunction with emergency-vehicle traffic control signals (see Section 4G.02).**

08 **The EMERGENCY SIGNAL—STOP ON FLASHING RED (R10-14 or R10-14a) sign (see Figure 2B-27) shall be used in conjunction with emergency-vehicle hybrid beacons (see Section 4G.04).**

Option:

09 In order to remind drivers who are making turns to yield to pedestrians, a Turning Vehicles Yield to Pedestrians (R10-15) sign (see Figure 2B-27) may be used.

10 A U-TURN YIELD TO RIGHT TURN (R10-16) sign (see Figure 2B-27) may be installed near the left-turn signal face if U-turns are allowed on a protected left-turn movement on an approach from which a right-turn GREEN ARROW signal indication is simultaneously being displayed to drivers making a right turn from the conflicting approach to their left.

Section 2B.54 No Turn on Red Signs (R10-11 Series, R10-17a, and R10-30)**Standard:**

01 **Where a right turn on red (or a left turn on red from a one-way street to a one-way street) is to be prohibited, a symbolic NO TURN ON RED (symbolic circular red) (R10-11) sign (see Figure 2B-27) or a NO TURN ON RED (R10-11a, R10-11b) word message sign (see Figure 2B-27) shall be used.**

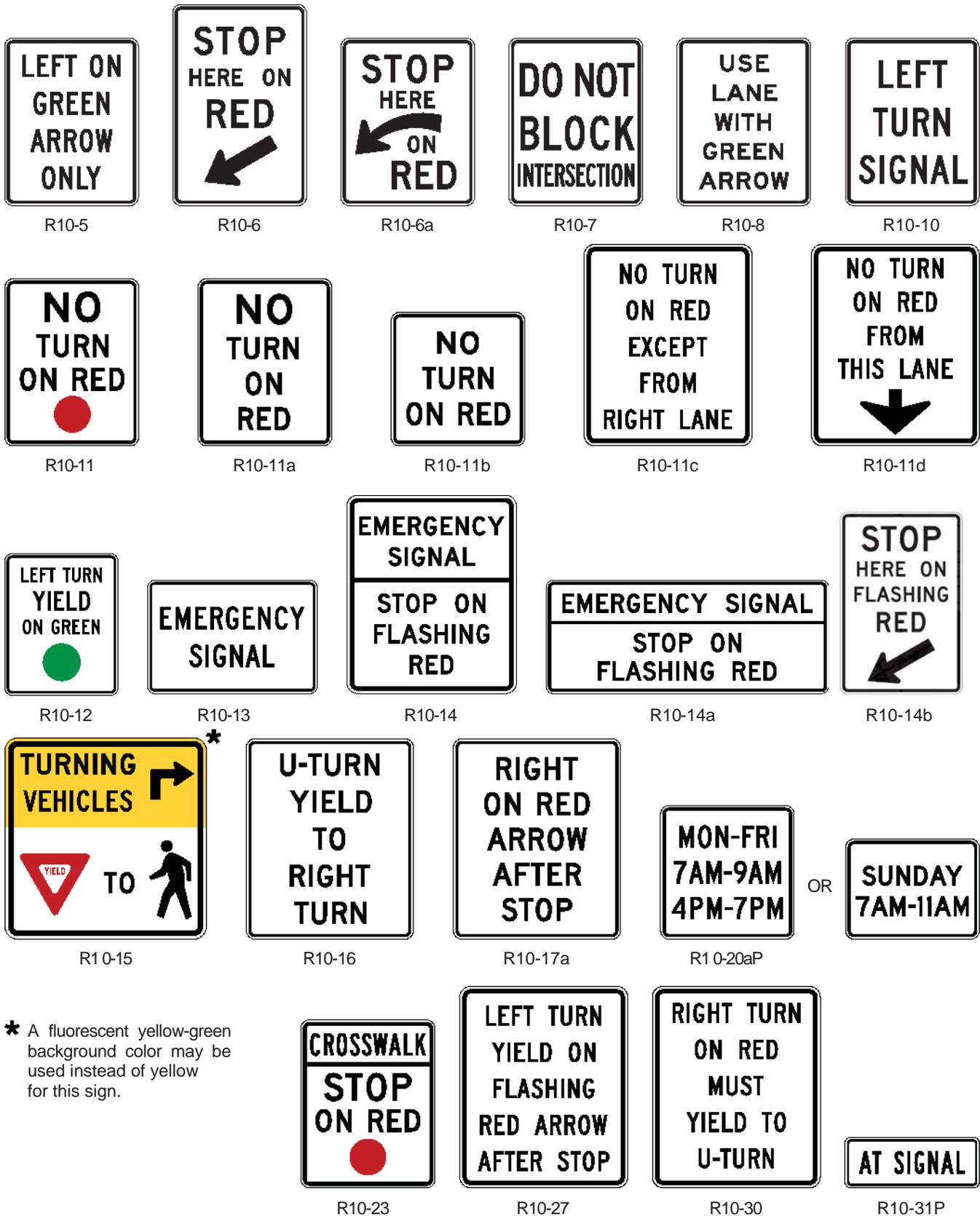
Guidance:

02 *If used, the No Turn on Red sign should be installed near the appropriate signal head.*

03 *A No Turn on Red sign should be considered when an engineering study finds that one or more of the following conditions exists:*

- A. *Inadequate sight distance to vehicles approaching from the left (or right, if applicable);*
- B. *Geometrics or operational characteristics of the intersection that might result in unexpected conflicts;*
- C. *An exclusive pedestrian phase;*
- D. *An unacceptable number of pedestrian conflicts with right-turn-on-red maneuvers, especially involving children, older pedestrians, or persons with disabilities;*
- E. *More than three right-turn-on-red accidents reported in a 12-month period for the particular approach;*
or
- F. *The skew angle of the intersecting roadways creates difficulty for drivers to see traffic approaching from their left.*

Figure 2B-27. Traffic Signal Signs and Plaques



* A fluorescent yellow-green background color may be used instead of yellow for this sign.

Standard:

- 02 **Advance signing shall be used when employing a temporary traffic control signal.**
- 03 **A temporary traffic control signal shall:**
- A. **Meet the physical display and operational requirements of a conventional traffic control signal.**
 - B. **Be removed when no longer needed.**
 - C. **Be placed in the flashing mode when not being used if it will be operated in the steady mode within 5 working days; otherwise, it shall be removed.**
 - D. **Be placed in the flashing mode during periods when it is not desirable to operate the signal, or the signal heads shall be covered, or taken down to indicate that the signal is not in operation.**

Guidance:

- 04 *A temporary traffic control signal should be used only if engineering study indicates that installing the signal will improve the overall safety and/or operation of the location.*

Option

- 05 *The engineering study may consist of a temporary traffic control (TTC) plan that has been approved by an Engineer. See Section 6C.01 for information on TTC plans.*
- 06 *The use of temporary traffic control signals by a work crew on a regular basis in their work area should be subject to the approval of the jurisdiction having authority over the roadway.*
- 07 *A temporary traffic control signal should not operate longer than 30 days unless associated with a longer-term temporary traffic control zone project.*
- 08 *For use of temporary traffic control signals in temporary traffic control zones, reference should be made to Section 6F.84 and Typical Application 6H-12.*

Standard:

- 09 **A portable traffic control signal shall be defined as a temporary traffic control signal that is designed so that it can be easily transported and reused at different locations. A portable traffic control signal shall be used only for one of the following purposes:**
- A. **To maintain one-lane, two-way traffic in a temporary traffic control zone that is of a long term stationary, intermediate term stationary, or short term stationary work duration (see Section 6G.02).**
 - B. **To temporarily function for a permanent signal where**
 - 1. **Power has been lost.**
 - 2. **A structural support or the controller has been damaged so that the permanent faces or signal is not functional.**
 - C. **To provide access to a site that will have a permanent signal in the near future, provided that the permanent signal has been approved by the agency or official having jurisdiction.**
- 10 **When a portable signal is functioning for a permanent signal and is operational to avoid conflicts between the permanent and the portable signal face either:**
- 1. **the permanent signal faces shall be covered or**
 - 2. **the permanent controller shall be deactivated, or**
 - 3. **the permanent controller shall operate the portable signals faces.**
- 11 **The portable traffic signal shall be deactivated and removed immediately upon the permanent signal becoming operational.**
- 12 **Only portable traffic control signal models that have been tested and approved by the Indiana Department of Transportation shall be used upon the roadway.**

Section 4D.33 Lateral Offset of Signal Supports and Cabinets*Guidance:*

- 01 *The following items should be considered when placing signal supports and cabinets:*
- A. *Reference should be made to the American Association of State Highway and Transportation Officials (AASHTO) “Roadside Design Guide” (see Section 1A.11) and to the “Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)” (see Section 1A.11).*
 - B. *Signal supports should be placed as far as practical from the edge of the traveled way without adversely affecting the visibility of the signal indications.*
 - C. *Where supports cannot be located based on the recommended AASHTO clearances, consideration should be given to the use of appropriate safety devices.*
 - D. *No part of a concrete base for a signal support should extend more than 4 inches above the ground level at any point. This limitation does not apply to the concrete base for a rigid support.*

- E. *In order to minimize hindrance to the passage of persons with physical disabilities, a signal support or controller cabinet should not obstruct the sidewalk, or access from the sidewalk to the crosswalk.*
- F. *Controller cabinets should be located as far as practical from the edge of the roadway.*
- G. *On medians, the minimum clearances provided in Items A through E for signal supports should be obtained if practical.*

Section 4D.34 Use of Signs at Signalized Locations

Support:

- 01 Traffic signal signs are sometimes used at highway traffic signal locations to instruct or guide pedestrians, bicyclists, or motorists. Among the signs typically used at or on the approaches to signalized locations are movement prohibition signs (see Section 2B.18), lane control signs (see Sections 2B.19 to 2B.22), pedestrian crossing signs (see Section 2B.51), pedestrian actuation signs (see Section 2B.52), traffic signal signs (see Sections 2B.53 and 2C.48), Signal Ahead warning signs (see Section 2C.36), Street Name signs (see Section 2D.43), and Advance Street Name signs (see Section 2D.44).

Guidance:

- 02 *Regulatory, warning, and guide signs should be used at traffic control signal locations as provided in Part 2 and as specifically provided elsewhere in Part 4.*
- 03 *Traffic signal signs should be located adjacent to the signal face to which they apply.*

Support:

- 04 Section 2B.19 contains information regarding the use of overhead lane control signs on signalized approaches where lane drops, multiple-lane turns involving shared through-and-turn lanes, or other lane-use regulations that would be unexpected by unfamiliar road users are present.

Standard:

- 05 **If used, illuminated traffic signal signs shall be designed and mounted in such a manner as to avoid glare and reflections that seriously detract from the signal indications. Traffic control signal faces shall be given dominant position and brightness to maximize their priority in the overall display.**
- 06 **The minimum vertical clearance and horizontal offset of the total assembly of traffic signal signs (see Section 2B.53) shall comply with the provisions of Sections 4D.15 and 4D.16.**
- 07 **STOP signs shall not be used in conjunction with any traffic control signal operation, except in either of the following cases:**
- A. **If the signal indication for an approach is a flashing red at all times, or**
 - B. **If a minor street or driveway is located within or adjacent to the area controlled by the traffic control signal, but does not require separate traffic signal control because an extremely low potential for conflict exists.**

Section 4D.35 Use of Pavement Markings at Signalized Locations

Support:

- 01 Pavement markings (see Part 3) that clearly communicate the operational plan of an intersection to road users play an important role in the effective operation of traffic control signals. By designating the number of lanes, the use of each lane, the length of additional lanes on the approach to an intersection, and the proper stopping points, the engineer can design the signal phasing and timing to best match the goals of the operational plan.

Guidance:

- 02 *Pavement markings should be used at traffic control signal locations as provided in Part 3. If the road surface will not retain pavement markings, signs should be installed to provide the needed road user information.*

Standard:

07 **Except for the sequential flashing warning lights that are described in Paragraphs 8 and 9, flashing warning lights shall not be used for delineation, as a series of flashers fails to identify the desired vehicle path.**

Option:

08 A series of sequential flashing warning lights may be placed on channelizing devices that form a merging taper in order to increase driver detection and recognition of the merging taper.

Standard:

09 **If a series of sequential flashing warning lights is used, the successive flashing of the lights shall occur from the upstream end of the merging taper to the downstream end of the merging taper in order to identify the desired vehicle path. Each flashing warning light in the sequence shall be flashed at a rate of not less than 55 or more than 75 times per minute.**

10 **Type A Low-Intensity Flashing warning lights, Type C Steady-Burn warning lights, and Type D 360-degree Steady-Burn warning lights shall be maintained so as to be capable of being visible on a clear night from a distance of 3,000 feet. Type B High-Intensity Flashing warning lights shall be maintained so as to be capable of being visible on a sunny day when viewed without the sun directly on or behind the device from a distance of 1,000 feet.**

11 **Warning lights shall have a minimum mounting height of 30 inches to the bottom of the lens.**

Support:

12 Type A Low-Intensity Flashing warning lights are used to warn road users during nighttime hours that they are approaching or proceeding in a potentially hazardous area.

Option:

13 Type A warning lights may be mounted on channelizing devices.

Support:

14 Type B High-Intensity Flashing warning lights are used to warn road users during both daylight and nighttime hours that they are approaching a potentially hazardous area.

Option:

15 Type B warning lights are designed to operate 24 hours per day and may be mounted on advance warning signs or on independent supports.

16 Type C Steady-Burn warning lights and Type D 360-degree Steady-Burn warning lights may be used during nighttime hours to delineate the edge of the traveled way.

Guidance:

17 *When used to delineate a curve, Type C and Type D 360-degree warning lights should only be used on devices on the outside of the curve, and not on the inside of the curve.*

Section 6F.84 Temporary Traffic Control Signals**Standard:**

01 **Temporary traffic control signals (see Section 4D.32) used to control road user movements through TTC zones and in other TTC situations shall comply with the applicable provisions of Part 4.**

Support:

02 Temporary traffic control signals are typically used in TTC zones such as temporary haul road crossings; temporary one-way operations along a one-lane, two-way highway; temporary one-way operations on bridges, reversible lanes, and intersections.

Standard:

03 **A temporary traffic control signal that is used to control traffic through a one-lane, two-way section of roadway shall comply with the provisions of Section 4H.02.**

Guidance:

04 *Where pedestrian traffic is detoured to a temporary traffic control signal, engineering judgment should be used to determine if pedestrian signals or accessible pedestrian signals (see Section 4E.09) are needed for crossing along an alternate route.*

05 *When temporary traffic control signals are used, conflict monitors typical of traditional traffic control signal operations should be used.*

Option:

06 Temporary traffic control signals may be portable or temporarily mounted on fixed supports.

Standard:

07 **Portable traffic control signals shall not be used for work zones that are mobile or of a short duration.**

Guidance:

08 *Temporary traffic control signals should only be used in situations where temporary traffic control signals are preferable to other means of traffic control, such as changing the work staging or work zone size to eliminate one-way vehicular traffic movements, using flaggers to control one-way or crossing movements, using STOP or YIELD signs, and using warning devices alone.*

Support:

09 Factors related to the design and application of temporary traffic control signals include the following:

- A. Safety and road user needs;
- B. Work staging and operations;
- C. The feasibility of using other TTC strategies (for example, flaggers, providing space for two lanes, or detouring road users, including bicyclists and pedestrians);
- D. Sight distance restrictions;
- E. Human factors considerations (for example, lack of driver familiarity with temporary traffic control signals);
- F. Road-user volumes including roadway and intersection capacity;
- G. Affected side streets and driveways;
- H. Vehicle speeds;
- I. The placement of other TTC devices;
- J. Parking;
- K. Turning restrictions;
- L. Pedestrians;
- M. The nature of adjacent land uses (such as residential or commercial);
- N. Legal authority;
- O. Signal phasing and timing requirements;
- P. Full-time or part-time operation;
- Q. Actuated, fixed-time, or manual operation;
- R. Power failures or other emergencies;
- S. Inspection and maintenance needs;
- T. Need for detailed placement, timing, and operation records; and
- U. Operation by contractors or by others.

10 Although temporary traffic control signals can be mounted on trailers or lightweight portable supports, fixed supports offer superior resistance to displacement or damage by severe weather, vehicle impact, and vandalism.

Guidance:

11 *Other TTC devices should be used to supplement temporary traffic control signals, including warning and regulatory signs, pavement markings, and channelizing devices.*

12 *Temporary traffic control signals not in use should be covered or removed.*

13 *If a temporary traffic control signal is located within 1/2 mile of an adjacent traffic control signal, consideration should be given to interconnected operation.*

Standard:

14 **Temporary traffic control signals shall not be located within 200 feet of a grade crossing unless the temporary traffic control signal is provided with preemption in accordance with Section 4D.27, or unless a uniformed officer or flagger is provided at the crossing to prevent vehicles from stopping within the crossing.**

Section 6F.85 Temporary Traffic Barriers

Support:

01 Temporary traffic barriers, including shifting portable or movable barriers, are devices designed to help prevent penetration by vehicles while minimizing injuries to vehicle occupants, and to protect workers, bicyclists, and pedestrians.

02 The four primary functions of temporary traffic barriers are:

- A. To keep vehicular traffic from entering work areas, such as excavations or material storage sites;
- B. To separate workers, bicyclists, and pedestrians from motor vehicle traffic;
- C. To separate opposing directions of vehicular traffic; and
- D. To separate vehicular traffic, bicyclists, and pedestrians from the work area such as false work for bridges and other exposed objects.

Option:

03 Temporary traffic barriers may be used to separate two-way vehicular traffic.