Ohio Supplement to the Manual on Uniform Traffic Control Devices - *11th Edition*

Effective: January 16, 2026
Revised: N/A

Department of Transportation

OHIO SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) 11TH EDITION

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ODOT Publications Gateway (resource containing ODOT standards):
https://www.transportation.ohio.gov/working/publications

Date: January 16, 2026

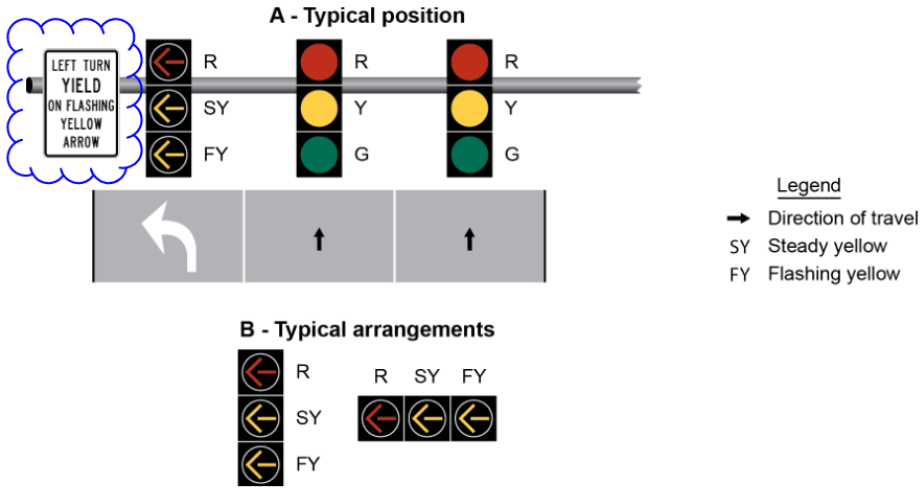
Introduction

- **The "Ohio Supplement and the Manual on Uniform Traffic Control Devices (MUTCD)" is the "Ohio Manual on Uniform Traffic Control Devices (OMUTCD)". The two terms are intended to be used interchangeably.**
- **The Ohio Supplement does not conflict or contravene the Federal MUTCD in accordance with 23 CFR 655.603.**
- **In accordance with Ohio Revised Code 4511.09 the "Ohio Supplement and the MUTCD" or "OMUTCD" shall govern use of Traffic Control Devices throughout the State [ORC 4511.09]**
- **A Section, Table or Figure of the MUTCD contained within the Ohio Supplement shall replace the corresponding Section, Table or Figure in the Federal MUTCD in its entirety.**
- **If a Section, Table, or Figure from the MUTCD is not contained within this Supplement, the section in the Federal MUTCD shall remain unchanged.**
- **Known Errors in Federal MUTCD are only shown in Ohio Supplement when the Known Error is directly related to the Ohio Specific Content in the Supplement. Users will need to also refer to Federal Known Errors.**

Within the Ohio Supplement:

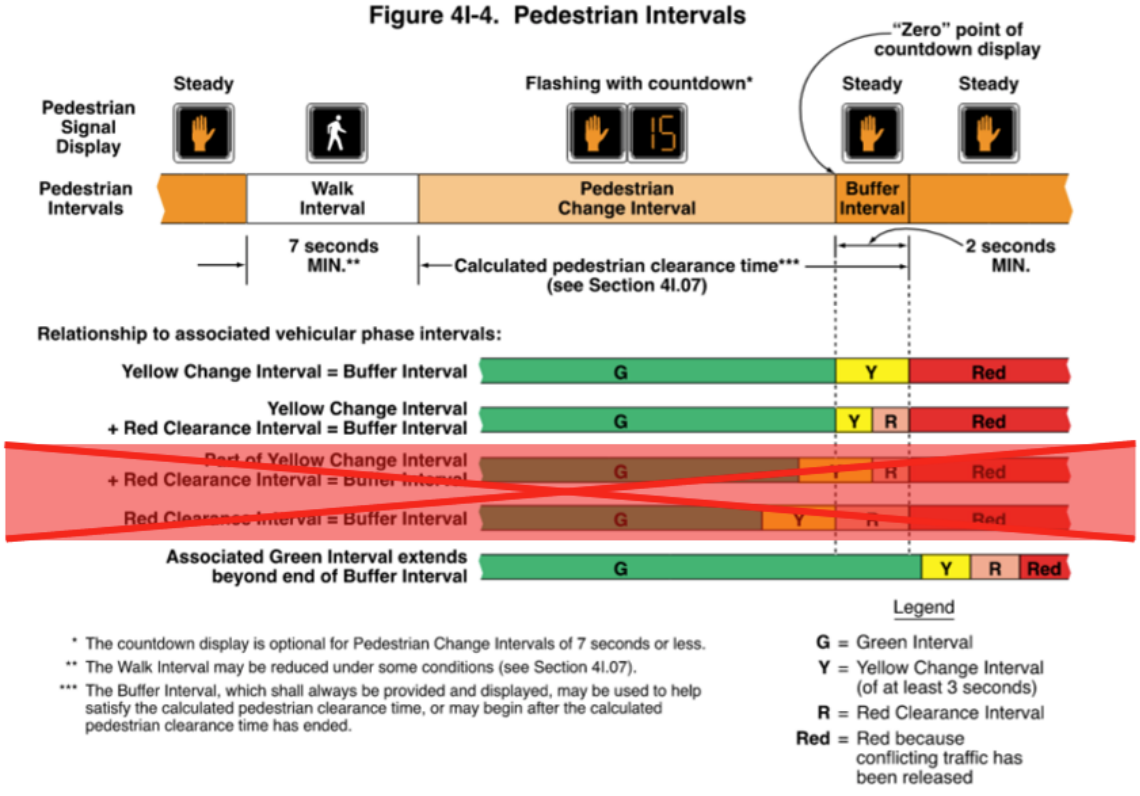
- **Black text denotes content unchanged from the Federal MUTCD 11th Edition.**
- **Text additions are formatted in Underline Blue text with vertical line in left margin.**
- **Text deletions are formatted in ~~strikeout red~~ text with vertical line in left margin.**
- **Tables and Figures of the MUTCD contained within the Ohio Supplement shall follow the same formatting convention for text updates. Black text denotes content unchanged from the Federal MUTCD 11th Edition. Text additions are formatted in underline blue and text deletions are formatted in ~~strikeout red~~. Graphic additions will be outlined with a blue clouding. Graphic deletions will be outlined with a transparent red box that also contains a red X. See below for examples of a graphic addition and graphic deletion.**

Figure 4D-7. Typical Position and Arrangements of Separate Signal Faces with Flashing Yellow Arrow for Permissive Only Mode Left Turns



Example of Graphic Addition

Figure 4I-4. Pedestrian Intervals



Example of Graphic Deletion

Sections, Figures, and Tables of the MUTCD 11th Edition modified by the Ohio Supplement.

Table of Contents:

Part 3 – Markings

Part 4 – Signals

Part 6 – Temporary Traffic Control

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Chapter 8B – Signs

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Part 9 – TRAFFIC CONTROL FOR BICYCLE FACILITIES

Chapter 9B – Regulatory Signs

Appendices

PART 1 – GENERAL

Introduction

- Additional paragraphs added to the Ohio Supplement document include a number and a letter. Each new paragraph is independent of the preceding numbered paragraph. As an example, paragraph 04a is independent of paragraph 04.
- Additional definitions added to the Ohio Supplement document include a number and a letter. Each new definition is independent of the preceding numbered definition. As an example, definition 62a is independent of definition 62.
- Ohio uses a State specific State Route sign/design. State Routes shall use the Ohio State Route sign/design. See the SDMM for more details.

CHAPTER 1A – General

Section 1A.02 Traffic Control Devices – General Description

Support:

01 As defined in Section 1C.02 of this Manual, traffic control devices include all flaggers, signs, signals, markings, channelizing devices, or other devices that use colors, shapes, symbols, words, sounds, and/or tactile information for the primary purpose of communicating a regulatory, warning, or guidance message to road users on a street, highway, pedestrian facility, bikeway, pathway, or site roadway open to public travel. [ORC 4511.01]

02 Infrastructure elements that restrict the road user's travel paths or vehicle speeds, such as islands, curbs, speed humps, and other raised roadway surfaces, are not traffic control devices. Transverse or longitudinal rumble strips are also not traffic control devices. Operational devices associated with the application of traffic control strategies such as fencing, roadway lighting, barriers, and attenuators are shown in this Manual for context, but their design, application, and usage are not specified since they are not traffic control devices.

03 Certain types of signs and other devices that do not have any traffic control purpose are sometimes placed within the highway right-of-way by or with the permission of the public agency or the official having jurisdiction over the street or highway. These signs and other devices are not considered to be traffic control devices and provisions regarding their design and use are not included in this Manual. Among these signs and other devices are the following:

A. Devices whose purpose is to assist highway maintenance personnel, such as markers to guide snowplow operators, devices that identify culvert and drop inlet locations, and devices that precisely identify highway locations for maintenance or mowing purposes;
B. Devices whose purpose is to assist fire or law enforcement personnel, such as markers that identify fire hydrant locations, signs that identify fire or water district boundaries, speed measurement pavement markings, small indicator lights to assist in enforcement of red light violations, and photo enforcement systems;
C. Devices whose purpose is to assist utility company personnel and highway contractors, such as markers that identify underground utility locations;
D. Signs posting local non-traffic ordinances; and
E. Signs giving civic organization meeting information.

Section 1A.05 Relation to Other Publications

Standard:

01 To the extent that they are incorporated by specific reference, the latest editions of the following publications shall be a part of this Manual: "Standard Highway Signs" publication (FHWA), ~~and~~ "Color Specifications for Retroreflective Sign and Pavement Marking Materials" (appendix to Subpart F of Part 655 of Title 23 of the Code of Federal Regulations), and the current "Sign Designs and Markings Manual" (SDMM), published by ODOT.

Support:

02 The "Standard Highway Signs" and "Sign Designs and Markings Manual" publications include~~s~~ standard alphabets and symbols and arrows for signs and pavement markings.

02a Refer to the "Sign Designs and Markings Manual" (SDMM) for information in addition to that included in the "Standard Highway Signs" (SHS) publication referenced in the MUTCD.

03 The MUTCD is not a roadway design manual, and engineers seeking guidance on design should refer to appropriate roadway design guides recognized by the Federal Highway Administration as needed for the design application.

04 Other publications are referenced in this Manual as useful resources, but they are not regulatory in nature and are not independently legally enforceable.

05 Unless specifically mentioned in 1A.05, no other Ohio Specific publications are to be considered part of the Ohio Supplement to the MUTCD.

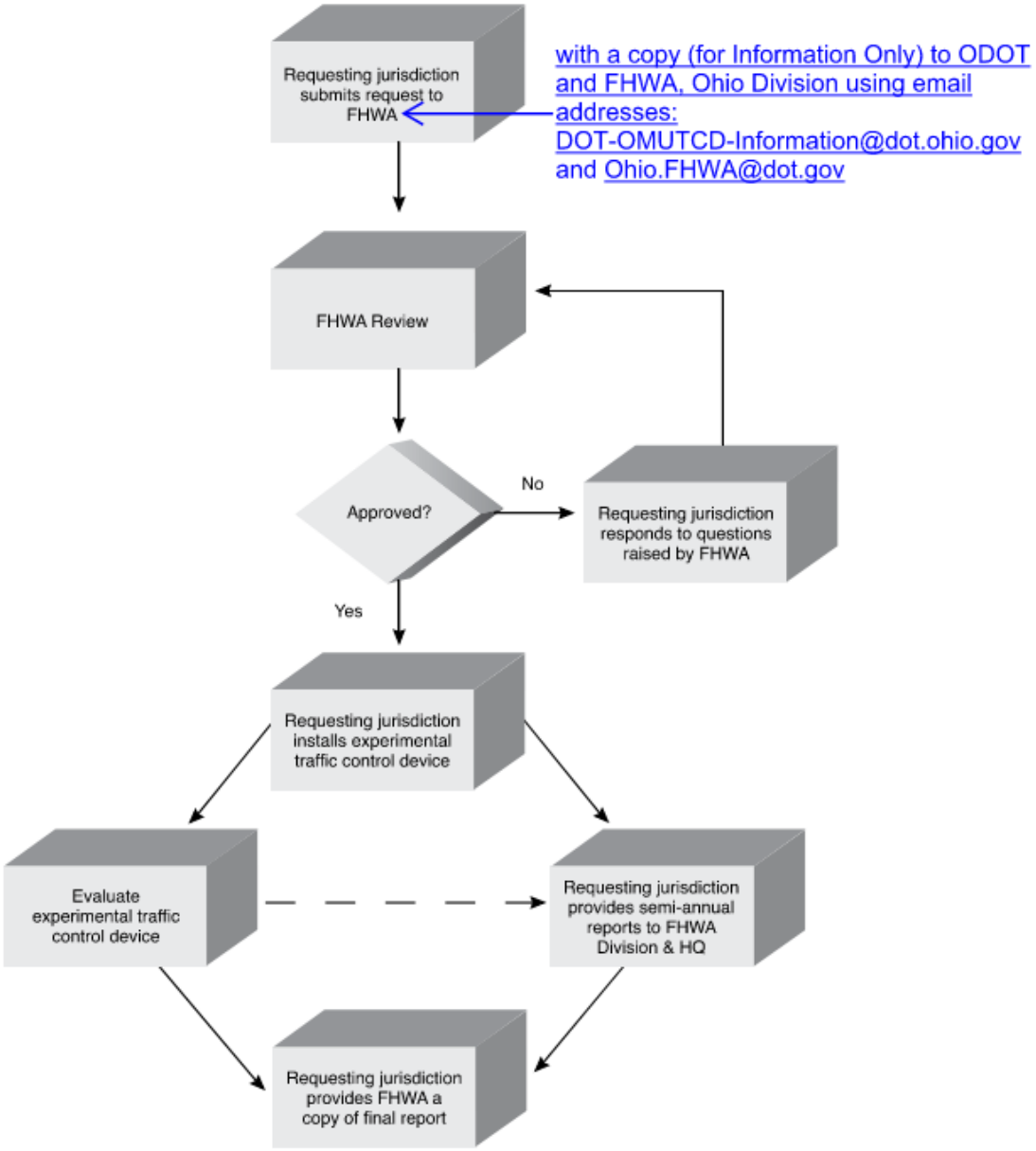
CHAPTER 1B – Legal Requirements for Traffic Control Devices

Table 1B-1. Target Compliance Dates Established by the FHWA

MUTCD Section(s)	Subject Area	Specific Provision	Compliance Date *
2B.64	Weight Limit Signs	Paragraph 14 - requirement for additional Weight Limit sign with the advisory distance or directional legend in advance of applicable section of highway or structure	5 years from the effective date of this edition of the MUTCD
2C.25	Low Clearance Signs (W12-2)	Paragraph 1 - Required posting of the Low Clearance Advance (W12-2) sign in advance of the structure	5 years from the effective date of this edition of the MUTCD
2C.25	Low Clearance Signs (W12-2a, W12-2b)	Paragraph 8 - Recommended posting of Low Clearance Overhead (W12-2a or 12-2b) signs on an arch or other structure under which the clearance varies greatly	5 years from the effective date of this edition of the MUTCD
3A.05	Maintaining Minimum Retroreflectivity	Implementation and continued use of a method that is designed to maintain retroreflectivity of longitudinal pavement markings (see Paragraph 1 of Section 3A.05)	September 6, 2026
8B.16	High-Profile Grade Crossings	Paragraphs 3 and 7 - Recommended installation of Low Ground Clearance and/or Vehicle Exclusion signs and detour signs for vehicles with low ground clearances that might hang up on high-profile grade crossings at locations with a known history	5 years from the effective date of this edition of the MUTCD
8D.09 through 8D.12	Highway Traffic Signals at or Near Grade Crossings	Assessment and determination of appropriate treatment to achieve compliance (preemption, movement prohibition, pre-signals, queue cutter signals)	10 years from the effective date of this edition of the MUTCD

* Effective Date is January 18, 2024

Figure 1B-1. Process for Requesting and Conducting Experimentations for New Traffic Control Devices



Section 1B.08 Requesting Official Interpretations, Experiments, Changes to the MUTCD, or Interim Approvals

Guidance:

01 A local jurisdiction, toll facility operator, or owner of a site roadway open to public travel that is requesting permission to experiment or permission to use a device or application under an existing interim approval should first check for any State laws, regulations, and/or directives covering the application of the MUTCD provisions that might apply.

Standard:

02 Except as provided in Paragraph 3 of this Section, requests for an interpretation, permission to experiment, a change to the MUTCD, granting of an interim approval, or permission to use an existing interim approval shall be submitted electronically to the Federal Highway Administration (FHWA), Office of Transportation Operations, MUTCD team, at the following e-mail address: MUTCDofficialrequest@dot.gov.

02a A copy of the request, for informational purposes, shall be sent to the Ohio Department of Transportation (ODOT), Office of Roadway Engineering, at the following e-mail address: DOT-OMUTCD-Information@dot.ohio.gov and the FHWA Ohio Division at Ohio.FHWA@dot.gov.

Option:

03 If electronic submittal is not possible, requests for an interpretation, permission to experiment, a change to the MUTCD, granting of an interim approval, or permission to use an existing interim approval may instead be mailed to the Office of Transportation Operations, HOTO-1, Federal Highway Administration, 1200 New Jersey Avenue, SE, Washington, DC 20590.

Support:

04 Communications regarding other MUTCD matters that are not related to official requests will receive quicker attention if they are submitted electronically to the MUTCD Team Leader or to the appropriate individual MUTCD technical lead team member. Their e-mail addresses are available through the links contained on the "MUTCD Team" page on the MUTCD Web site at http://mutcd.fhwa.dot.gov/team.htm.

05 For additional information concerning interpretations, experimentation, changes, or interim approvals, visit the MUTCD Web site at http://mutcd.fhwa.dot.gov.

CHAPTER 1C – Definitions, Acronyms, and Abbreviations Used in This Manual

Section 1C.02 Definitions of Words and Phrases Used in this Manual

Standard:

01 Unless otherwise defined in this Section, or in other Parts of this Manual, words or phrases shall have the meaning(s) as defined in the "Uniform Vehicle Code," "AASHTO Transportation Glossary (Highway Definitions)," or other appropriate publications.

02 Where a term that is defined in this Section or elsewhere in this Manual has a different definition in another resource or in common use, the definition herein shall govern for purposes of the applicability of the provisions of this Manual.

03 The following words and phrases, when used in this Manual, shall have the following meanings:

1. **Accessible Pedestrian Signal—a device that communicates information about pedestrian signal timing in a non-visual format such as audible tones and/or speech messages and vibrating surfaces.**
2. **Accessible Pedestrian Signal Detector—a device designated to assist the pedestrian who has vision or physical disabilities in activating the pedestrian phase.**
3. **Active Grade Crossing—a grade crossing equipped with automatic traffic control devices, such as flashing-light signals, gates, and/or traffic control signals, that are activated upon the detection of approaching rail traffic.**
4. **Actuated—a type of traffic control signal operation in which some or all signal phases are operated on the basis of actuation.**

5. **Actuation—initiation of, a change in, or an extension of a traffic signal phase or a sign legend through the operation of any type of detector.**
6. **Advance Preemption—the notification of approaching rail traffic that is forwarded to the highway traffic signal controller unit or assembly by the railroad or light rail transit equipment in advance of the activation of the railroad or light rail transit warning devices.**
7. **Advance Preemption Time—the period of time that is the difference between the required maximum highway traffic signal preemption time and the activation of the railroad or light rail transit warning devices.**
8. **Advisory Speed—a recommended speed for all vehicles operating on a section of highway and based on the highway design, operating characteristics, and conditions.**
9. **Agency—an organization with the responsibility for providing, maintaining, and/or operating a public or private road system.**
10. **Alley—a street or highway intended to provide access to the rear or side of lots or buildings in urban districts ~~areas~~ and not intended for the purpose of through vehicular traffic~~.~~, and includes any street or highway that has been declared an "alley" by the legislative authority of the municipal corporation in which such street or highway is located. [ORC 4511.01]**

Support:

10a. The term Urban District and Urban Area may be used interchangeably in the context of the definition of an Alley. See definition # 281a for definition of Urban District.

Standard:

11. **Annual Average Daily Traffic (AADT)—the total volume of traffic passing a point or segment of a highway facility in both directions for one year divided by the number of days in the year. Normally, periodic daily traffic volumes are adjusted for hours of the day counted, days of the week, and seasons of the year to arrive at annual average daily traffic.**
12. **Application—in regard to a traffic control device, the act of deciding to use a device, generally or at a particular location for a particular condition.**
13. **Approach—all lanes of traffic moving toward an intersection or a midblock location from one direction, including any adjacent parking lane(s).**
14. **Arterial Highway (Street)—~~a general term denoting~~ a street or highway primarily used by through traffic, usually on a continuous route or a street or highway designated as part of an arterial system. [ORC 4511.01]**
15. **Automated Vehicle—see Driving Automation System.**
16. **Automatic Lane—see Exact Change Lane within the definition of Toll Collection.**
17. **Average Daily Traffic (ADT)—the average 24 hour volume, being the total volume during a stated period divided by the number of days in that period. Normally, this would be periodic daily traffic volumes over several days, not adjusted for days of the week or seasons of the year.**
18. **Average Day—a day representing traffic volumes normally and repeatedly found at a location, typically a weekday when volumes are influenced by employment or a weekend day when volumes are influenced by entertainment or recreation.**
19. **Backplate—see Signal Backplate.**
20. **Barrier-Separated Lane—a preferential lane or other special purpose lane that is separated from the adjacent general-purpose lane(s) by a physical barrier.**
21. **Beacon—a highway traffic signal with one or more signal indications that operates in a flashing mode. Types of beacons include:**
    - **(a) Emergency-Vehicle Hybrid Beacon—a special type of beacon (see Hybrid Beacon).**
    - **(b) Intersection Control Beacon—a beacon used only at an intersection to control two or more directions of travel.**
    - **(c) Pedestrian Hybrid Beacon—a special type of beacon (see Hybrid Beacon).**

(d) Rectangular Rapid-Flashing Beacon (RRFB)—a pedestrian-activated and/or bicycle-activated device comprising two horizontally arranged, rapidly flashed, rectangular-shaped yellow indications that is used to provide supplemental emphasis for a pedestrian, school, or trail crossing warning sign at a marked crosswalk across an uncontrolled approach.

(e) Speed Limit Sign Beacon—a beacon used only to supplement a SPEED LIMIT sign.

(f) Stop Beacon—a beacon used only to supplement a STOP sign, a DO NOT ENTER sign, or a WRONG WAY sign.

(g) Warning Beacon—a beacon used only to supplement an appropriate warning or regulatory sign or marker.

22. **Bicycle—a pedal-powered vehicle upon which the human operator sits and includes electric bicycles. [ORC 4511.01]**
23. **Bicycle Box—a designated area on the approach to a signalized intersection, between an advance motorist stop line and the crosswalk or intersection, intended to provide bicyclists a visible place to wait in front of stopped motorists during the red signal phase.**
24. **Bicycle Facilities—a general term denoting improvements and provisions that accommodate or encourage bicycling, including parking and storage facilities, and shared roadways not specifically defined for bicycle use.**
25. **Bicycle Lane—a portion of a roadway that has been designated for preferential or exclusive use by bicyclists. A typical bicycle lane is delineated from the adjacent general-purpose lane(s) by longitudinal pavement markings and bicycle lane symbol or word markings and, if used, signs. Other types of bicycle lanes include:**
    (a) Buffer-Separated Bicycle Lane—a bicycle lane that is separated from the adjacent general-purpose lane(s) by a pattern of standard longitudinal pavement markings that is wider than a normal or wide lane line marking.
    (b) Counter-Flow Bicycle Lane—a one-directional bicycle lane that provides a lawful path of travel for bicycles in the opposite direction from general traffic on a roadway that allows general traffic to travel in only one direction. Counter-flow bicycle lanes are designated by the traffic control devices used for other bicycle lanes.
    (c) Separated Bicycle Lane—an exclusive facility for bicyclists that is located within or directly adjacent to the roadway and that is physically separated from motor vehicle traffic with a vertical element. Separated bicycle lanes are differentiated from other bicycle lanes by a vertical element.
26. **Bicycle Signal Face—a signal face that displays only bicycle symbol signal indications, that exclusively controls a bicycle movement from a designated bicycle lane or from a separate facility such as a shared-use path, and that displays signal indications that are applicable only to the bicycle movement.**
27. **Bicycle Symbol Signal Indication—a red, yellow, or green signal indication that displays a bicycle symbol rather than a circular or arrow indication.**
28. **Bikeway—a generic term for any road, street, path, or way that in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.**
29. **Blank-Out Sign—a sign that displays a single predetermined message only when activated. When not activated, the sign legend is not visible.**
30. **Buffer-Separated Lane—a preferential lane or other special purpose lane that is separated from the adjacent general-purpose lane(s) by a pattern of standard longitudinal pavement markings that is wider than a normal or wide lane line marking. The buffer area might**

include rumble strips, textured pavement, or channelizing devices such as tubular markers or traversable curbs, but does not include a physical barrier.

31. **Business Identification Sign Panel—a panel containing a word legend or logo used to identify a business on a Specific Service sign.**
32. **Busway—a traveled way that is used exclusively by buses.**
33. **Cantilevered Signal Structure—a structure, also referred to as a mast arm, that is rigidly attached to a vertical pole and is used to provide overhead support of highway traffic signal faces or grade crossing signal units.**
34. **Center Line Markings—the yellow pavement marking line(s) that delineates the separation of traffic lanes that have opposite directions of travel on a roadway. These markings need not be at the geometrical center of the pavement.**
35. **Changeable Message Sign—a sign that is capable of displaying more than one message (one of which might be a "blank" display), changeable manually, by remote control, or by automatic control. Electronic-display changeable message signs are referred to as Dynamic Message Signs in the National Intelligent Transportation Systems (ITS) Architecture and are referred to as Variable Message Signs in the National Electrical Manufacturers Association (NEMA) standards publication.**
36. **Channelizing Line—a solid wide or double white line marking used to form islands where traffic in the same direction of travel is permitted on both sides of the island.**
37. **Circular Intersection—an intersection that has an island, generally circular in design, located in the center of the intersection where traffic passes to the right of the island. Circular intersections include roundabouts, rotaries, and traffic circles.**
38. **Circulatory Roadway—the roadway within a circular intersection on which traffic travels in a counterclockwise direction around an island in the center of the circular intersection.**
39. **Clear Storage Distance—when used in Part 8, the distance available for vehicle storage measured between 6 feet from the rail nearest the intersection to the intersection stop line or the normal stopping point on the highway. At skewed grade crossings and intersections, the 6-foot distance shall be measured perpendicular to the nearest rail either along the center line or edge line of the highway, as appropriate, to obtain the shorter distance. Where exit gates are used, the distance available for vehicle storage is measured from the point where the rear of the vehicle would be clear of the exit gate arm. In cases where the exit gate arm is parallel to the track(s) and is not perpendicular to the highway, the distance is measured either along the center line or edge line of the highway, as appropriate, to obtain the shorter distance.**
40. **Clear Zone—the total roadside border area, starting at the edge of the traveled way, that is available for an errant driver to stop or regain control of a vehicle. This area might consist of a shoulder, a recoverable slope, and/or a non-recoverable, traversable slope with a clear run-out area at its toe.**
41. **Collector Highway—a term denoting a highway that in rural areas connects small towns and local highways to arterial highways, and in urban areas provides land access and traffic circulation within residential, commercial, and business areas and connects local highways to the arterial highways.**
42. **Conflict Monitor—a device used to detect and respond to improper or conflicting signal indications and improper operating voltages in a traffic controller assembly.**
43. **Constant Warning Time Detection—a means of detecting rail traffic that provides relatively uniform warning time for the approach of through rail traffic that is not accelerating or decelerating after being detected.**

44. **Contiguous Lane—a lane, preferential or otherwise, that is separated from the adjacent lane(s) only by a normal or wide lane line marking.**
45. **Controller Assembly—a complete electrical device mounted in a cabinet for controlling the operation of a highway traffic signal.**
46. **Controller Unit—that part of a controller assembly that is devoted to the selection and timing of the display of signal indications.**
47. **Conventional Road—a street or highway other than an expressway or freeway.**
48. **Counter-Flow Lane—a lane operating in a direction opposite to the normal flow of traffic designated for peak direction of travel during at least a portion of the day. Counter-flow lanes are usually separated from the off-peak direction lanes by tubular markers or other flexible channelizing devices, temporary lane separators, or movable or permanent barrier.**
49. **Crashworthy—the ability of a roadside safety hardware device or appurtenance to minimize risks to vehicle occupants by allowing a vehicle impacting the appurtenance to be slowed before stopping, redirected, or to continue without significant resistance. Section 1D.11 contains additional information about crashworthiness.**
50. **Crosswalk—(a) that part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or in the absence of curbs, from the edges of the traversable roadway, and in the absence of a sidewalk on one side of the roadway, the part of a roadway included within the extension of the lateral lines of the sidewalk at right angles to the center line; (b) any portion of a roadway at an intersection or elsewhere distinctly indicated as a pedestrian crossing by pavement marking lines on the surface, which might be supplemented by contrasting pavement texture, style, or color.**

50a. Ohio Revised Code definition of Crosswalk is: (a) that part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or in the absence of curbs, from the edges of the traversable roadway, and in the absence of a sidewalk on one side of the roadway, the part of a roadway included within the extension of the lateral lines of the sidewalk at right angles to the center line; (b) any portion of a roadway at an intersection or elsewhere distinctly indicated as a pedestrian crossing by lines or other markings on the surface, which might be supplemented by contrasting pavement texture, style, or color. (c) Notwithstanding divisions (a) and (b) of this section, there shall not be a crosswalk where local authorities have placed signs indicating no crossing. [ORC 4511.01]

51. **Crosswalk Lines—white pavement marking lines that identify a crosswalk.**
52. **Cycle Length—the time required for one complete sequence of signal indications.**
53. **Dark Mode—the lack of all signal indications at a signalized location. The dark mode is most commonly associated with power failures, ramp meters, hybrid beacons, beacons, and some movable bridge signals.**
54. **Dedicated Lane—A lane on a freeway or expressway that provides access to: (a) either an exit lane or the mainline, but not both, at a freeway or expressway exit, or (b) only one roadway at a freeway or expressway split.**
55. **Delineator—a retroreflective device mounted at the side of the roadway in a series to indicate the alignment of the roadway, especially at night or in adverse weather.**
56. **Design Vehicle—the longest vehicle permitted by statute of the road authority (State or other) on that roadway.**
57. **Designated Bicycle Route—a system of bikeways designated by the jurisdiction having authority with appropriate directional and informational route signs, with or without specific bicycle route numbers.**

58. Detectable—having a continuous edge within 6 inches of the surface so that pedestrians with vision disabilities can sense its presence and receive usable guidance information.
59. Detector—a device used for determining the presence or passage of motor vehicles, bicycles, or pedestrians.
60. Detection Plate—a smooth continuous plate used on pedestrian channelizing devices to facilitate the use of low-vision canes for pedestrians with vision disabilities. The bottom edge of the detection plate shall be no more than 2 inches above the walkway and the top edge of the detection plate shall be at least 8 inches above the walkway. The detection plate shall share the same vertical plane as the hand trailing edge of the pedestrian channelizing device.
61. Diagnostic Team—a group of knowledgeable representatives of the parties of interest in a grade crossing or group of grade crossings (see 23 CFR Part 646.204).
62. Downstream—a term that refers to a location that is encountered by traffic subsequent to an upstream location as it flows in an "upstream to downstream" direction. For example, "the downstream end of a lane line separating the turn lane from a through lane on the approach to an intersection" is the end of the lane line that is closest to the intersection.
62a. Driver or Operator --- every person who drives or is in actual physical control of a vehicle, trackless trolley, or streetcar. [ORC 4511.01]
63. Driveway—an access from a roadway to a building, site, or abutting property.
64. Driving Aisle—circulation area for motor vehicles within a parking area, typically between rows of parking spaces. Driving aisles provide one-way or two-way travel. Driving aisles are exempted from compliance with MUTCD provisions.
65. Driving Automation System—technology that automates some or all aspects of the driving task to assist or replace the human vehicle operator. Section 5A.03 contains descriptions of the automation levels.

66. Dropped Lane—see Lane Drop.
67. Dual-Arrow Signal Section—a type of signal section designed to include both a yellow arrow and a green arrow.
68. Dynamic Envelope—the clearance required for light rail transit traffic or a train and its cargo overhang due to any combination of loading, lateral motion, or suspension failure (see Figure 8C-3).
69. Dynamic Exit Gate Operating Mode—a mode of operation where the exit gate operation is based on the presence of vehicles within the minimum track clearance distance.
70. Dynamic Message Sign—see Changeable Message Sign.
71. Edge Line Markings—white or yellow pavement marking lines that delineate the right or left edge(s) of a traveled way.
72. Electronic Toll Collection (ETC) Account Only Lane—a non-attended toll lane that is restricted to use only by vehicles with a registered toll payment account.

73. Emergency-Vehicle Hybrid Beacon—see Hybrid Beacon.

74. Emergency-Vehicle Traffic Control Signal—see Highway Traffic Signal.
75. Engineer—see Professional Engineer.
76. Engineering Judgment—the evaluation of available pertinent information including, but not limited to, the safety and operational efficiency of all road users, and the application of appropriate principles, provisions, and practices as contained in this Manual and other sources, for the purpose of deciding upon the design (see Section 1D.03), use, installation, or operation of a traffic control device. Engineering judgment shall be exercised by a professional engineer (see definition in this Section) with appropriate traffic engineering expertise, or by an individual working under the supervision of such an engineer, through

the application of procedures and criteria established by the engineer. Documentation of engineering judgment is not required.

77. **Engineering Study—the analysis and evaluation of available pertinent information including, but not limited to, the safety and operational efficiency of all road users, and the application of appropriate principles, provisions, and practices as contained in this Manual and other sources, for the purpose of deciding upon the design (see Section 1D.03), use, installation, or operation of a traffic control device. An engineering study shall be performed by a professional engineer (see definition in this Section) with appropriate traffic engineering expertise, or by an individual working under the supervision of such an engineer, through the application of procedures and criteria established by the engineer. An engineering study shall be documented in writing.**
78. **Entrance Gate—an automatic gate that can be lowered across the lanes approaching a grade crossing to block road users from entering the grade crossing.**
79. **Exclusive Alignment—a light rail transit track(s) or a bus rapid transit busway that is grade-separated or protected by a fence or traffic barrier. No grade crossings exist along the track(s) or busway. Motor vehicles, bicycles, and pedestrians are prohibited within the right-of-way. Subways and elevated structures are included within this definition.**
80. **Exit Gate—an automatic gate that can be lowered across the lanes departing a grade crossing to block road users from entering the grade crossing by driving in the opposing traffic lanes.**
81. **Exit Gate Clearance Time—for Four-Quadrant Gate systems at grade crossings, the amount of time provided to delay the descent of the exit gate arm(s) after entrance gate arm(s) begin to descend.**
82. **Exit Gate Operating Mode—for Four-Quadrant Gate systems at grade crossings, the mode of control used to govern the operation of the exit gate arms.**
83. **Expressway—a divided arterial highway for through traffic with full or partial control of access with an excess of fifty percent of all crossroads separated in grade. [ORC 4511.01]**
84. **Fail-Safe—when used in Part 8, a railroad signal design philosophy applied to a system or device such that the result of a hardware failure or the effect of a software error shall either prohibit the system or device from assuming or maintaining an unsafe state or shall cause the system or device to assume a state that is known to be safe.**
85. **Flagger—a person who actively controls the flow of vehicular traffic into and/or through a temporary traffic control zone using hand-signaling devices or an Automated Flagger Assistance Device (AFAD).**
86. **Flasher—a device used to turn highway traffic signal indications on and off at a repetitive rate of approximately once per second.**
87. **Flashing—an operation in which a light source, such as a traffic signal indication or LEDs in a sign, is turned on and off repetitively.**
88. **Flashing-Light Signals—a warning device consisting of two red signal indications arranged horizontally that are activated to flash alternately when rail traffic is approaching or present at a grade crossing.**
89. **Flashing Mode—a mode of operation in which at least one traffic signal indication in each vehicular signal face of a highway traffic signal is turned on and off repetitively.**
90. **Four-Quadrant Gate System—an exit gate system that includes entrance and exit gates that control and block road users on all lanes entering and exiting the grade crossing.**
91. **Freeway—a divided multi-lane highway for through traffic with all crossroads separated in grade and with full control of access. [ORC 4511.01]**
92. **Full-Actuated—a type of traffic control signal operation in which all signal phases function on the basis of actuation.**
93. **Gate—an automatically-operated or manually-operated traffic control device that is used to physically obstruct road users such that they are discouraged from proceeding past a**

particular point on a roadway or pathway, or such that they are discouraged from entering a particular grade crossing, ramp, lane, roadway, or facility.

94. **General-Purpose Lane—a highway lane or set of lanes, other than a Managed Lane (see definition in this Section) or a Preferential Lane (see definition in this Section), that all or most of the traffic that is allowed on that highway is also allowed to use. Certain classes of vehicles, such as commercial vehicles or vehicles exceeding a certain weight or size, might be prohibited from using one or more of the general-purpose lanes. A general-purpose lane might also be restricted to certain uses, such as passing or turning or as an auxiliary lane.**
95. **Gore Area—see Physical Gore and Theoretical Gore.**
96. **Grade Crossing—the general area where a highway and a railroad and/or light rail transit route cross at the same level, within which are included the tracks, highway, and traffic control devices for traffic traversing that area.**
97. **Grade Crossing Warning System—the flashing-light signals, with or without automatic gates, together with the necessary control equipment used to inform road users of the approach or presence of rail traffic at a grade crossing.**
98. **Guide Sign—a sign that shows route designations, highway names, destinations, directions, distances, services, points of interest, or other geographical, recreational, or cultural information.**
99. **High-Occupancy Vehicle (HOV)—a motor vehicle carrying at least two (or more than two if the signs for a specific roadway indicate a higher minimum occupancy requirement) persons, including carpools, vanpools, and buses.**
100. **Highway—a general term for denoting a public way for purposes of travel by vehicles and vulnerable road users, including the entire area within the right-of-way.**
101. **Highway-Light Rail Transit Grade Crossing—the general area where a highway and a light rail transit route cross at the same level, within which are included the light rail transit tracks, highway, and traffic control devices for traffic traversing that area.**
102. **Highway-Rail Grade Crossing—the general area where a highway and a railroad cross at the same level, within which are included the railroad tracks, highway, and traffic control devices for highway traffic traversing that area.**
103. **Highway Traffic Signal—a power-operated traffic control device by which traffic is warned or directed to take some specific action. These devices do not include power-operated signs (except as provided in Chapters 4S and 4T), steadily-illuminated raised pavement markers, gates, flashing-light signals (see Section 8D.02), warning lights (see Section 6L.07), or steady-burning electric lamps. Highway traffic signals include:**
    - **(a) Flashing Beacon—see Beacon.**
    - **(b) In-Roadway Warning Lights—a special type of highway traffic signal installed in the roadway surface to warn road users that they are approaching a condition on or adjacent to the roadway that might not be readily apparent and might require the road users to reduce speed and/or come to a stop.**
    - **(c) Lane-Use Control Signal—a signal face or comparable display on a full-matrix Changeable Message Sign (see Chapters 2L and 4T) displaying indications to permit or prohibit the use of specific lanes of a roadway or a shoulder where driving is sometimes permitted, or to indicate the impending prohibition of such use.**
    - **(d) Traffic Control Signal (Traffic Signal)—a highway traffic signal placed at intersections, movable bridges, fire stations, midblock crosswalks, alternating one-way sections of a single lane road, private driveways, or other locations that require conflicting traffic to be directed to stop and permitted to proceed in an orderly manner. These devices do not include pedestrian hybrid beacons (see Chapter 4J) or emergency-vehicle hybrid beacons (see Chapter 4N). Traffic control signals include vehicular signal indications,**

pedestrian signal indications, and bicycle symbol signal indications. Special traffic control signals include:

(1) Emergency-Vehicle Traffic Control Signal—a traffic control signal that directs all conflicting traffic to stop in order to permit the driver of an authorized emergency vehicle to proceed into the roadway or intersection.

(2) Movable Bridge Traffic Control Signal—a traffic control signal installed at a movable bridge to notify traffic to stop during periods when the roadway is closed to allow the bridge to open.

(3) Portable Traffic Control Signal—a temporary component of a traffic control signal on a mobile support with one or more signal faces that is designed so that it can be easily transported, deployed, or relocated as part of a temporary traffic control signal, or during construction and maintenance as a temporary part of a permanent traffic control signal installation.

(4) Pre-Signal—traffic control signal faces that are located upstream from a signalized intersection and are operated in conjunction with the traffic control signal faces at the downstream signalized intersection in a manner that is designed to keep the area between the stop line for the upstream traffic control signal faces and the stop line for the downstream signalized intersection clear of queued vehicles. When used in conjunction with a grade crossing, the pre-signal is operated for the purpose of preventing vehicles from queuing within the minimum track clearance distance. Supplemental near-side traffic control signal faces for the downstream signalized intersection are not considered to be pre-signals.

(5) Queue Cutter Signal—an independently-controlled traffic control signal (not operated in conjunction with the traffic control signal faces at a downstream signalized intersection) located at a grade crossing that controls traffic in one direction only on the roadway for the purpose of keeping the minimum track clearance distance clear of vehicles. The display of red signal indications is activated from a downstream queue detection system, by time of day, by approaching rail traffic, by an approaching bus on a busway, or by a combination of any of these methods.

(6) Ramp Control Signal—a traffic control signal installed to control the merging flow of traffic onto a freeway at an entrance ramp or at a freeway-to-freeway ramp connection.

(7) Temporary Traffic Control Signal—a traffic control signal that is installed for a limited time period using fixed or portable traffic control signal units.

104. HOV Lane—any preferential lane designated for exclusive use by high-occupancy vehicles for all or part of a day—including a designated lane on a freeway, other highway, street, or independent roadway on a separate right-of-way.

105. Hybrid Beacon—a special type of beacon that is intentionally placed in a dark mode (no indications displayed) between periods of operation and, when operated, displays both steady and flashing traffic control signal indications. Hybrid beacons include:

(a) Emergency-Vehicle Hybrid Beacon—used to warn and control traffic at an unsignalized location to assist authorized emergency vehicles in entering or crossing a street or highway.

(b) Pedestrian Hybrid Beacon—used to warn and control traffic at an unsignalized location to assist pedestrians in crossing a street or highway at a marked crosswalk.

106. Identification Marker—a shape, color, and/or pictograph that is used as a visual identifier for a destination guide signing system of a community wayfinding system or a shared-use path system for an area.

107. Inherently Low Emission Vehicle (ILEV)—any kind of vehicle that, because of inherent properties of the fuel system design, will not have significant evaporative emissions, even if its evaporative emission control system has failed.

108. In-Roadway Warning Lights—see Highway Traffic Signal.

109. Interchange—a system of interconnecting roadways providing for traffic movement between two or more highways that do not intersect at grade.

110. Interchange Lane Drop—see Lane Drop.

111. Preemption Interconnection—the electrical connection between the railroad or light rail transit active warning system and the highway traffic signal controller assembly for the purpose of preemption.

112. Intermediate Interchange—an interchange with an urban or rural route that is not a major or minor interchange as defined in this Section.

113. Intersection—intersection is defined as follows:

(a) The area embraced within the prolongation or connection of the lateral curb lines, or if none, the lateral boundary lines of the roadways of two highways that join one another at, or approximately at, right angles, or the area within which vehicles traveling on different highways that join at any other angle might come into conflict.

(b) The junction of an alley, driveway, or site roadway with a public roadway or highway shall not constitute an intersection, unless the public roadway or highway at said junction is controlled by a traffic control device.

(c) If a highway includes two roadways separated by a median, then every crossing of each roadway of such divided highway by an intersecting highway shall be a separate intersection if the opposing left-turn paths cross and there is sufficient interior storage for the design vehicle (see Figure 2A-5).

(d) At a location controlled by a traffic control signal, regardless of the distance between the separate intersections as defined in (c) above:

(1) If a stop line, yield line, or crosswalk has not been designated on the roadway (within the median) between the separate intersections, the two intersections and the roadway (median) between them shall be considered as one intersection;

(2) Where a stop line, yield line, or crosswalk is designated on the roadway on the intersection approach, the area within the crosswalk and/or beyond the designated stop line or yield line shall be part of the intersection; and

(3) Where a crosswalk is designated on a roadway on the departure from the intersection, the intersection shall include the area extending to the far side of such crosswalk.

114. Intersection Control Beacon—see Beacon.

115. Interval—the part of a signal cycle during which signal indications do not change.

116. **Island—a defined area between traffic lanes for control of vehicular movements, for toll collection, or for pedestrian or bicyclist refuge. It includes all end protection and approach treatments. Within an intersection area, a median or an outer separation is considered to be an island.**
117. **Jughandle Turn—a left-turn or U-turn that, in conjunction with special geometry, is made by initially making a right-turn or diverging to the right. With other special geometry, a right-turn or U-turn makes a jughandle turn by initially making a left-turn or diverging to the left.**
118. **Lane Drop—a through lane that becomes a mandatory turn lane on a conventional roadway, or a through lane that becomes a mandatory exit lane on a freeway or expressway. The end of an acceleration lane and reductions in the number of through lanes that do not involve a mandatory turn or exit are not considered lane drops.**
119. **Lane Line Markings—white pavement marking lines that delineate the separation of traffic lanes that have the same direction of travel on a roadway.**
120. **Lane Reduction—elimination of a through lane by a gradual narrowing of the travel pavement (taper) through physical construction or pavement markings at which traffic in the lane being eliminated must merge into the adjacent through lane and continue in the same direction of travel. A lane reduction can occur outside the influence of an intersection or interchange, or within an interchange a short distance downstream of the gore of an exit ramp. Through lanes that become a mandatory turn or exit are considered lane drops rather than lane reductions.**
121. **Lane-Use Control Signal—see Highway Traffic Signal.**
122. **Legend—see Sign Legend.**
123. **Lens—see Signal Lens.**
124. **Light Rail Transit Traffic (Light Rail Transit Equipment)—every device in, upon, or by which any person or property can be transported on light rail transit tracks, including single-unit light rail transit cars (such as streetcars and trolleys) and assemblies of multiple light rail transit cars coupled together.**
125. **Loading Zone—a specially marked, signed or designated area for the loading or unloading of vehicles (passenger or freight).**
126. **Locomotive Horn—an air horn, steam whistle, or similar audible warning device (see 49 CFR Part 229.129) mounted on a locomotive or control cab car. The terms "locomotive horn," "train whistle," "locomotive whistle," and "train horn" are used interchangeably in the railroad industry.**
127. **Logo—a distinctive emblem or trademark that identifies a commercial or non-commercial business, program, or organization.**
128. **Longitudinal Markings—pavement markings that are generally placed parallel and adjacent to the flow of traffic such as lane lines, center lines, edge lines, channelizing lines, and others.**
129. **Louver—see Signal Louver.**
130. **Low-Volume Rural Road—A category of paved or unpaved conventional or special-purpose roadways having an AADT of less than 400 vehicles and lying outside of built-up or urbanized areas of cities, towns, and communities.**
131. **Major Interchange—an interchange with another freeway or expressway, or an interchange with a high-volume multi-lane highway, principal urban arterial, or major rural route where the interchanging traffic is heavy or includes many road users unfamiliar with the area.**
132. **Major Street—the street normally carrying the higher volume of vehicular traffic.**
133. **Malfunction Management Unit—see Conflict Monitor.**

134. **Managed Lane—a highway lane or set of lanes, or a highway facility, for which variable operational strategies such as direction of travel, tolling, pricing, and/or vehicle type or occupancy requirements are implemented and managed in real-time in response to changing conditions. Managed lanes are typically buffer-separated or barrier-separated lanes parallel to the general-purpose lanes of a highway in which access is restricted to designated locations. There are also some highways on which all lanes are managed.**
135. **Manual Lane—see Attended Lane within the definition of Toll Collection.**
136. **Maximum Highway Traffic Signal Preemption Time—the maximum amount of time needed following initiation of the preemption sequence for the highway traffic signals to complete the timing of the right-of-way transfer time, queue clearance time, and separation time.**
137. **Median—the portion of a highway separating opposing directions of the traveled way or the area between two roadways of a divided highway measured from edge of traveled way to edge of traveled way. The median excludes turn lanes. The median width might be different between intersections, interchanges, and at opposite approaches of the same intersection.**
138. **Minimum Track Clearance Distance—the length along a highway over the track(s) where a vehicle could be struck by rail traffic. The minimum track clearance distance is measured from a point upstream from the track(s) on the approach to the grade crossing to a point downstream from the track(s) on the departure from the grade crossing. The length along the highway between the two points is the minimum track clearance distance.**
139. **Minor Interchange—an interchange where traffic is local and very light, such as interchanges with land service access roads. Where the sum of the exit volumes is estimated to be lower than 100 vehicles per day in the design year, the interchange is classified as local.**
140. **Minor Street—the street normally carrying the lower volume of vehicular traffic.**
141. **Mixed-Use Alignment—a light rail transit track(s), a busway, or a bus only lane(s) where the light rail transit (LRT) or bus rapid transit (BRT) vehicles operate in mixed traffic with all types of road users. This includes streets, transit malls, and pedestrian malls where the right-of-way is shared. In a mixed-use alignment, the light rail transit or the bus rapid transit traffic does not have the right-of-way over other road users at grade crossings and intersections. If the LRT traffic or buses are controlled by traffic control signals or LRT signal faces at an intersection with a roadway, the alignment is considered to be mixed-use even if some of the approaches to the intersection are used exclusively by LRT traffic or buses.**
142. **Movable Bridge Resistance Gate—a type of traffic gate, which is located downstream of the movable bridge warning gate, that provides a physical deterrent to vehicle and/or pedestrian traffic when placed in the appropriate position.**
143. **Movable Bridge Signal—see Highway Traffic Signal.**
144. **Movable Bridge Warning Gate—a type of traffic gate designed to warn, but not primarily to block, vehicle and/or pedestrian traffic when placed in the appropriate position.**
145. **Multi-Lane—more than one lane moving in the same direction. A multi-lane street, highway, or roadway has a basic cross-section comprised of two or more through lanes in one or both directions. A multi-lane approach has two or more lanes moving toward the intersection, including turning lanes.**
146. **Neutral Area—the paved area between the channelizing lines separating an entrance or exit ramp or a channelized turn lane or channelized entering lane from the adjacent through lane(s).**
147. **Object Marker—a device used to mark obstructions within or adjacent to the roadway.**

148. **Occupancy Requirement—any restriction that regulates the use of a facility or one or more lanes of a facility for any period of the day based on a specified minimum number of persons in a vehicle.**
149. **Occupant—a person driving or riding in a car, truck, bus, or other vehicle.**
150. **On-Street Parking—parking within or along, and accessed directly from, a public roadway or a site roadway open to public travel.**
151. **Open-Road ETC Lane—a non-attended lane that is designed to allow toll payments to be electronically collected from vehicles traveling at normal highway speeds. Open-Road ETC lanes are typically physically separated from the toll plaza, often following the alignment of the mainline lanes, with toll plaza lanes for cash toll payments being on a different alignment after diverging from the mainline lanes or a subset thereof.**
152. **Open-Road Tolling Point—the location along an Open-Road ETC lane at which roadside or overhead detection and receiving equipment are placed and vehicles are electronically assessed a toll.**

152a. Operator---See Driver

153. **Opposing Traffic—vehicles that are traveling in the opposite direction. At an intersection, vehicles entering from an approach that is approximately straight ahead would be considered to be opposing traffic, but vehicles entering from approaches on the left or right would be considered to be conflicting traffic rather than opposing traffic.**
154. **Option Lane—A lane on a freeway, expressway, or conventional road multi-lane exit or multi-lane split that widens on the approach to allow access, without changing lanes, to:**
    (a) Both an exit lane and the mainline at a freeway or expressway exit; or
    (b) Both diverging roadways at a freeway, expressway, or conventional road split.
155. **Overhead Sign—a sign that is placed such that a portion or the entirety of the sign or its support is directly above the roadway or shoulder such that vehicles travel below it. Typical installations include signs placed on cantilever arms that extend over the roadway or shoulder, signs placed on sign support structures that span the entire width of the pavement, signs placed on mast arms or span wires either independently or that also support traffic control signals, and signs placed on highway bridges that cross over the roadway.**
156. **Parking Area—a parking lot or parking garage that is separated from a roadway. Parallel, perpendicular, or angle parking spaces along a roadway are not considered a parking area.**
157. **Parking Space—an area marked or designated for storage of a vehicle while the driver is not present.**
158. **Preemption Clearance Interval—the part of a traffic signal sequence displayed as a result of a preemption request when vehicles are provided the opportunity to clear the railroad or light rail transit tracks, or a movable bridge, prior to the arrival of the train or boat for which the traffic signal is being preempted.**
159. **Preemption Time Variability—the result that occurs when the traffic signal controller enters the Preemption Clearance Interval with less than the maximum design Right-of-Way Transfer Time or the speed of a train approaching the grade crossing varies.**
160. **Passive Grade Crossing—a grade crossing where none of the automatic traffic control devices associated with an Active Grade Crossing Warning System are present and at which the traffic control devices consist entirely of signs and/or markings.**
161. **Pathway—a general term denoting a public way for purposes of travel by authorized users outside the traveled way and physically separated from the roadway by an open space or barrier and either within the highway right-of-way or within an independent alignment. Pathways include shared-use paths, but do not include sidewalks.**

162. Pathway Grade Crossing—the general area where a pathway and railroad and/or light rail transit tracks cross at the same level, within which are included the tracks, pathway, and traffic control devices for pathway traffic traversing that area.

163. Paved—having a roadway surface that has both a structural (weight bearing) and a sealing purpose for the roadway, such as a bituminous surface treatment, mixed bituminous concrete, or Portland cement concrete.

164. Pedestrian—a person on foot, in a wheelchair whether motorized or non-motorized, and on other devices determined by local law to be equivalent, which might include skates or a skateboard. [ORC 4511.01]

165. Pedestrian Change Interval—an interval during which the flashing UPRAISED HAND (symbolizing DONT WALK) signal indication is displayed.

166. Pedestrian Clearance Time—the time provided for a pedestrian crossing in a crosswalk, after leaving the curb or edge of pavement, to travel to the far side of the traveled way or to a median.

167. Pedestrian Facility—a general term denoting a location where improvements and provisions have been made to accommodate or encourage pedestrian activity.

168. Pedestrian Hybrid Beacon—see Hybrid Beacon.

169. Pedestrian Signal Head—a signal head, which contains the symbols WALKING PERSON (symbolizing WALK) and UPRAISED HAND (symbolizing DONT WALK), that is installed to direct pedestrians at a traffic control signal.

170. Permissive Mode—a mode of traffic control signal operation in which left or right turns are permitted to be made after yielding to pedestrians, if any, and/or opposing traffic, if any. When a CIRCULAR GREEN signal indication is displayed, both left and right turns are permitted unless otherwise prohibited by another traffic control device. When a flashing YELLOW ARROW or flashing RED ARROW signal indication is displayed, the turn indicated by the arrow is permitted.

171. Physical Gore—a longitudinal point where a physical barrier or the lack of a paved surface inhibits road users from crossing from a ramp or channelized turn lane or channelized entering lane to the adjacent through lane(s) or vice versa.

172. Pictograph—a pictorial representation used to identify a governmental jurisdiction, an area of jurisdiction, a governmental or other public transportation agency or provider, a military base or branch of service, a governmental-approved university or college, a governmental-approved institution, or a toll payment system.

173. Plaque—a traffic control device intended to communicate specific information to road users through a word, symbol, or arrow legend that is placed immediately adjacent to a sign to supplement the message on the sign. The difference between a plaque and a sign is that a plaque cannot be used alone. The designation for a plaque includes a "P" suffix.

174. Platoon—a group of vehicles or pedestrians traveling together as a group, either voluntarily or involuntarily, because of traffic signal controls, geometrics, or other factors.

175. Portable Traffic Control Signal—see Highway Traffic Signal.

176. Post-Exit Ramp Lane Reduction—see Lane Reduction.

177. Post-Mounted Sign—a sign that is placed to the side of the roadway such that no portion of the sign or its support is directly above the roadway or shoulder.

178. Posted Speed Limit—a speed limit determined by law or regulation and displayed on Speed Limit signs.

179. Preemption—the transfer of normal operation of a traffic control signal or a hybrid beacon to a special control mode of operation.

180. **Preferential Lane—a highway lane or set of lanes, or a highway facility, reserved for the exclusive use of one or more specific types of vehicles or of vehicles with a specific minimum number of occupants.**

181. **Pre-Signal—see Highway Traffic Signal.**

182. **Pretimed Operation—a type of traffic control signal operation in which none of the signal phases function on the basis of actuation.**
183. **Primary Signal Face—one of the required or recommended minimum number of signal faces for a given approach or separate turning movement, but not including near-side signal faces required as a result of the far-side signal faces exceeding the maximum distance from the stop line.**

184. **Principal Legend—place names, street names, and route numbers displayed on guide signs.**
185. **Priority Control—a means by which the assignment of right-of-way is obtained or modified.**
186. **Private Road—see Site Roadways Open to Public Travel.**
187. **Professional Engineer (P.E.)—An individual who has fulfilled education and experience requirements and passed examinations that, under State licensure laws, permit the individual to offer engineering services within areas of expertise directly to the public.**
188. **Protected Mode—a mode of traffic control signal operation in which left or right turns are permitted to be made only when a left or right GREEN ARROW signal indication is displayed.**
189. **Public Road—any road, street, or similar facility under the jurisdiction of and maintained by a public agency and open to public travel.**
190. **Push Button—a button to activate a device or signal timing for pedestrians, bicyclists, or other road users.**
191. **Push Button Information Message—a recorded message that can be actuated by pressing a push button when the walk interval is not timing and that provides the name of the street that the crosswalk associated with that particular push button crosses and can also provide other information about the intersection signalization or geometry.**
192. **Push Button Locator Tone—a repeating sound that informs approaching pedestrians that a push button exists to actuate pedestrian timing or receive additional information and that enables pedestrians with vision disabilities to locate the push button.**
193. **Queue Clearance Time—when used in Part 8, the time required for the design vehicle of maximum length stopped just inside the minimum track clearance distance to start up and move through and clear the entire minimum track clearance distance.**
194. **Queue Cutter Signal—see Highway Traffic Signal.**
195. **Quiet Zone—a segment of a rail line, within which is situated one or a number of consecutive public highway-rail grade crossings at which locomotive horns are not routinely sounded per 49 CFR Part 222.**

196. **Rail Traffic—every device in, upon, or by which any person or property can be transported on rails or tracks and to which all other traffic must yield the right-of-way by law at grade crossings, including trains, one or more locomotives coupled (with or without cars), other railroad equipment, and light rail transit operating in exclusive or semi-exclusive alignments. Light rail transit operating in a mixed-use alignment, to which other traffic is not required to yield the right-of-way by law, is a vehicle and is not considered to be rail traffic.**
197. **Raised Pavement Marker—a device mounted on or in a road surface that has a height generally not exceeding approximately 1 inch above the road surface for a permanent marker, or not exceeding approximately 2 inches above the road surface for a temporary**

flexible marker, and that is intended to be used as a positioning guide and/or to supplement or substitute for pavement markings. Raised pavement markers might also be recessed into or flush with the pavement surface.

198. **Ramp Control Signal—see Highway Traffic Signal.**
199. **Red Clearance Interval—an interval that follows a yellow change interval and precedes the next conflicting green interval.**
200. **Regulatory Sign—a sign that gives notice to road users of traffic laws or regulations.**
201. **Retroreflectivity—a property of a surface that allows a large portion of the light coming from a point source to be returned directly back to a point near its origin.**

201a. Right-of-Way—means either of the following, as the context requires:

(1) The right of a vehicle, streetcar, trackless trolley, or pedestrian to proceed uninterruptedly in a lawful manner in the direction in which it or the individual is moving in preference to another vehicle, streetcar, trackless trolley, or pedestrian approaching from a different direction into its or the individual's path;

(2) A general term denoting land, property, or the interest therein, usually in the configuration of a strip, acquired for or devoted to transportation purposes. When used in this context, right-of-way includes the roadway, shoulders or berm, ditch, and slopes extending to the right-of-way limits under the control of the state or local authority. [ORC 4511.01]

202. **Road—see Roadway.**
203. **Road User—a vehicle operator, bicyclist, or pedestrian, including persons with disabilities, within the highway or on a site roadway open to public travel.**
204. **Roadway—that portion of a highway improved, designed, or ordinarily used for vehicular travel and parking lanes, but exclusive of the sidewalk, berm, or shoulder even though such sidewalk, berm, or shoulder is used by persons riding bicycles or other human-powered vehicles. In the event a highway includes two or more separate roadways, the term roadway as used in this Manual shall refer to any such roadway separately, but not to all such roadways collectively.**
205. **Roadway Network—a geographical arrangement of intersecting roadways.**
206. **Roundabout—a circular intersection with yield control at entry, which permits a vehicle on the circulatory roadway to proceed, and with deflection of the approaching vehicle counter-clockwise around a central island.**
207. **Rumble Strip—a series of intermittent, narrow, transverse areas of rough-textured, slightly raised, or depressed road surface that extend across the travel lane to alert vehicle operators to unusual traffic conditions or are located along the shoulder, along the roadway center line, or within islands formed by pavement markings to alert road users that they are leaving the travel lanes.**
208. **Rural Highway—a type of roadway normally characterized by lower volumes, higher speeds, fewer turning conflicts, and less conflict with pedestrians.**
209. **Scanning Graphic—a graphic designed for scanning by machine, and includes bar codes, quick-response (QR) codes or other matrix bar code formats, or similar graphics.**
210. **School—a public or private educational institution recognized by the State education authority for one or more grades K through 12 or as otherwise defined by the State.**

210a.Ohio Revised Code 4511.21 describes a School as any of the following:

(i) Any school chartered under section 3301.16 of the [Ohio] Revised Code;

(ii) Any nonchartered school that during the preceding year filed with the department of education and workforce in compliance with rule 3301-35-08 of the Ohio Administrative Code, a copy of the school's report for the parents of the school's pupils certifying that the school meets Ohio minimum standards for nonchartered, nontax-supported schools and

presents evidence of this filing to the jurisdiction from which it is requesting the establishment of a school zone;
(iii) Any special elementary school that in writing requests the county engineer of the county in which the special elementary school is located to create a school zone at the location of that school. Upon receipt of such a written request, the county engineer shall create a school zone at that location by erecting the appropriate signs.
(iv) Any preschool education program operated by an educational service center that is located on a street or highway with a speed limit of forty-five miles per hour or more, when the educational service center in writing requests that the county engineer of the county in which the program is located create a school zone at the location of that program. Upon receipt of such a written request, the county engineer shall create a school zone at that location by erecting the appropriate signs.
[ORC 4511.21]

211. **School Zone—a designated roadway segment approaching, adjacent to, and beyond school buildings or grounds, or along which school related activities occur.**

211a. Ohio Revised Code 4511.21 describes a School Zone as that portion of a street or highway passing a school fronting upon the street or highway that is encompassed by projecting the school property lines to the fronting street or highway, and also includes that portion of a state highway. Upon request from local authorities for streets and highways under their jurisdiction and that portion of a state highway under the jurisdiction of the director of transportation or a request from a county engineer in the case of a school zone for a special elementary school, the director may extend the traditional school zone boundaries. The distances in divisions (B)(1)(c)(i), (ii), and (iii) of this section shall not exceed three hundred feet per approach per direction and are bounded by whichever of the following distances or combinations thereof the director approves as most appropriate:
(i) The distance encompassed by projecting the school building lines normal to the fronting highway and extending a distance of three hundred feet on each approach direction;
(ii) The distance encompassed by projecting the school property lines intersecting the fronting highway and extending a distance of three hundred feet on each approach direction
(iii) The distance encompassed by the special marking of the pavement for a principal school pupil crosswalk plus a distance of three hundred feet on each approach direction of the highway.

Nothing in this section shall be construed to invalidate the director's initial action on August 9, 1976, establishing all school zones at the traditional school zone boundaries defined by projecting school property lines, except when those boundaries are extended as provided in divisions (B)(1)(a) and (c) of this section (of ORC). [ORC 4511.21]

212. **Semi-Actuated—a type of traffic control signal operation in which at least one, but not all, signal phases function on the basis of actuation.**
213. **Semi-Exclusive Alignment—a light rail transit track(s) or a bus rapid transit busway that is in a separate right-of-way or that is along a street or railroad right-of-way where motor vehicles, bicycles, and pedestrians have limited access and cross only at designated locations, such as at grade crossings where road users must yield the right-of-way to the light rail transit or the bus rapid transit traffic.**
214. **Separate Turn Signal Face—a signal face that exclusively controls a turn movement and that displays signal indications that are applicable only to the turn movement.**
215. **Separation Time—the component of maximum highway traffic signal preemption time during which the minimum track clearance distance is clear of vehicular traffic prior to the arrival of rail traffic.**

216. Serviceable—a condition in which a traffic control device appears (day and night) and operates as intended, beyond which it requires replacement due to damage or wear. Whether a device is serviceable will depend on the type of device under consideration. In general, if the device is capable of being serviced with minimal effort or replacement parts so that it continues to appear and operate as intended, and the device is otherwise substantially intact, then it can be considered to be in serviceable condition. If the device is damaged or not operational beyond reasonable repair, then it is likely no longer serviceable.

217. Shared Roadway—a roadway that is officially designated and marked as a bicycle route, but which is open to motor vehicle travel and upon which no bicycle lane is designated.

218. Shared Turn Signal Face—a signal face, for controlling both a turn movement and the adjacent through movement, that always displays the same color of circular signal indication that the adjacent through signal face or faces display.

219. Shared-Use Path—a bikeway outside the traveled way and physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent alignment. Shared-use paths are also used by pedestrians (including skaters, users of manual and motorized wheelchairs, and joggers) and other authorized motorized and non-motorized users.

219a. Ohio Revised Code definition of Shared-Use Path is: a bikeway outside the traveled way and physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent alignment. A shared-use path also may be used by pedestrians, including skaters, joggers, users of manual and motorized wheelchairs, and other authorized motorized and non-motorized users. A shared-use path does not include any trail that is intended to be used primarily for mountain biking, hiking, equestrian use, or other similar uses, or any other single track or natural surface trail that has historically been reserved for nonmotorized use. [ORC 4511.01]

220. Shoulder—a longitudinal area contiguous with the traveled way that is used for accommodation of stopped vehicles for emergency use and for lateral support of base and surface courses, and that is graded for emergency stopping. A shoulder might be paved or unpaved. A paved shoulder might be opened to part-time travel by some or all vehicles and might also be available for use by pedestrians and/or bicycles in the absence of other pedestrian or bicycle facilities.

221. Sidewalk—that portion of a street between the curb lines, or the lateral lines of a roadway, and the adjacent property lines or on easements of private property that is paved or improved, ~~and~~ intended for the use ~~by~~ of pedestrians. [ORC 4511.01]

222. Sidewalk Extension—a pedestrian facility at an intersection or midblock crosswalk which extends the sidewalk by physically and visually narrowing the roadway.

223. Sidewalk Grade Crossing—the portion of a highway-rail grade crossing or of a highway-light rail transit grade crossing where a sidewalk and railroad tracks or a sidewalk and light rail transit tracks cross at the same level, within which are included the tracks, sidewalk, and traffic control devices for sidewalk users traversing that area.

224. Sign—with regard to controlling traffic, any traffic control device that is intended to communicate specific information to road users through a word, symbol, and/or arrow legend. Signs do not include highway traffic signals, pavement markings, delineators, or channelization devices. Signs whose purpose is unrelated to traffic control are addressed in Section 1A.02.

225. Sign Assembly—a group of signs, located on the same support(s), that supplement one another in conveying information to road users.

226. Sign Illumination—either internal or external lighting that shows similar color by day or night. Street or highway lighting shall not be considered as meeting this definition.

227. Sign Legend—all word messages, logos, pictographs, and symbol and arrow designs that are intended to convey specific meanings. The border, if any, on a sign is not considered to be a part of the legend.
228. Sign Panel—a separate panel or piece of material containing a word, logo, pictograph, symbol, and/or arrow legend that is affixed to the face of a sign.
229. Signal—See Highway Traffic Signal.
230. Signal Backplate—a thin strip of material that extends outward from and parallel to a signal face on all sides of a signal housing to provide a background for improved visibility of the signal indications.
231. Signal Coordination—the establishment of timed relationships between adjacent traffic control signals.
232. Signal Dimming—a reduction of the light output from a signal indication, hybrid beacon, or rectangular rapid-flashing beacon indication, typically for nighttime conditions, to a value that is below the minimum specified intensity for daytime conditions. If a variety of intensity levels are used during daytime conditions and all of the various levels (including the lowest of the intensities) are above the minimum specified intensity for daytime conditions, this would not be considered to be signal dimming.
233. Signal Face—an assembly of one or more signal sections that is provided for controlling one or more traffic movements on a single approach.
234. Signal Head—an assembly of one or more signal faces that is provided for controlling traffic movements on one or more approaches.
235. Signal Housing—that part of a signal section that protects the light source and other required components.
236. Signal Indication—the illumination of a signal lens or equivalent device.
237. Signal Lens—that part of the signal section that redirects the light coming directly from the light source and its reflector, if any.
238. Signal Louver—a device that can be mounted inside a signal visor to restrict visibility of a signal indication from the side or to limit the visibility of the signal indication to a certain lane or lanes, or to a certain distance from the stop line.
239. Signal Phase—the right-of-way, yellow change, and red clearance intervals in a cycle that are assigned to an independent traffic movement or combination of movements.
240. Signal Section—the assembly of a signal housing, signal lens, if any, and light source with necessary components to be used for displaying one signal indication.
241. Signal Sequence (Sequence of Indications)—the order of appearance of signal indications during successive intervals of a signal cycle.
242. Signal System—two or more traffic control signals operating in signal coordination.
243. Signal Timing—the amount of time allocated for the display of a signal indication.
244. Signal Visor—that part of a signal section that directs the signal indication specifically to approaching traffic and reduces the effect of direct external light entering the signal lens.
245. Signing—individual signs or a group of signs, not necessarily on the same support(s), that supplement one another in conveying information to road users.
246. Simultaneous Preemption—notification of approaching rail traffic is forwarded to the highway traffic signal controller unit or assembly and railroad or light rail transit active warning devices at the same time.

247. Site Roadways Open to Public Travel—Roadways and bikeways on sites of shopping centers, office parks, airports, schools, universities, sports arenas, recreational parks, and other similar business, governmental, and/or recreation facilities that are publicly or privately owned but where the public is allowed to travel without full-time access restrictions. Two types of roadways are not included in this definition: (1) roadways where access is restricted at all times by gates and/or guards to residents, employees, or other

specifically-authorized persons; and (2) private highway-rail grade crossings. Site roadways open to public travel do not include parking areas (see definition in this Section), including the driving aisles (see definition in this Section) within those parking areas.

247a Ohio Revised Code definition of Site Roadways Open to Public Travel is: Roadways and bikeways on sites of shopping centers, office parks, airports, schools, universities, sports arenas, recreational parks, and other similar business, governmental, and/or recreation facilities that are publicly or privately owned but where the public is allowed to travel without full-time access restrictions. "Site roadways open to public travel" does not include roadways where access is restricted at all times by gates and/or guards to residents, employees, or other specifically authorized persons, parking areas, driving aisles within a parking area, or private highway-rail grade crossings. [ORC 4511.01]

248. Special-Purpose Road—a low-volume, low-speed road that serves recreational areas or resource development activities.

249. Speed—speed is defined based on the following classifications:

- **(a) Average Speed—the summation of the instantaneous or spot-measured speeds at a specific location of vehicles divided by the number of vehicles observed.**
- **(b) Design Speed—a selected speed used to determine the various geometric design features of a roadway.**
- **(c) 85th-Percentile Speed—the speed at or below which 85 percent of the motor vehicles travel.**
- **(d) Operating Speed—a speed at which a typical vehicle or the overall traffic operates. Operating speed might be defined with speed values such as the average, pace, or 85th-percentile speeds.**
- **(e) Pace—the 10 mph speed range representing the speeds of the largest percentage of vehicles in the traffic stream.**

250. Speed Limit—the maximum (or minimum) speed applicable to a section of highway as established by law or regulation.

251. Speed Zone—a section of highway with a speed limit that is established by law or regulation, but which might be different from a legislatively-specified statutory speed limit.

252. Splitter Island—a median island used to separate opposing directions of traffic entering and exiting a roundabout.

252a. State Highway—a highway under the jurisdiction of the (Ohio) department of transportation, outside the limits of municipal corporations, provided that the authority conferred upon the (Ohio) director of transportation in section 5511.01 of the Revised Code to erect state highway route markers and signs directing traffic shall not be modified by sections 4511.01 to 4511.79, and 4511.99 of the Revised Code. [ORC 4511.01]

252b. State Route—every highway which is designated with an official state route number and so marked. [ORC 4511.01]

253. Station Crossing—a pathway grade crossing that is associated with a station platform.

254. Statutory Speed Limit—a speed limit established by legislative action (such as Federal or State law) that typically is applicable for a particular class of highways with specified design, functional, jurisdictional, and/or location characteristics and that is not necessarily displayed on Speed Limit signs.

255. Steady (Steady Mode)—the continuous display of a signal indication for the duration of an interval, signal phase, or consecutive signal phases.

256. Stop Line—a solid white pavement marking line extending across approach lanes to indicate the point at which a stop is intended or required to be made.

257. Street—see Highway.

258. Supplemental Signal Face—a signal face that is not a primary signal face but which is provided for a given approach or separate turning movement to enhance visibility or conspicuity.

259. Swing Gate—a self-closing fence-type gate designated to swing open away from the track area and return to the closed position upon release.

260. Symbol—the approved design of a pictorial or graphical representation of a specific traffic control message for signs, pavement markings, traffic control signals, or other traffic control devices, as shown in the MUTCD.

261. Temporary Traffic Control Signal—see Highway Traffic Signal.

262. Temporary Traffic Control Zone—an area of a highway, pedestrian or bicycle facility where road user conditions are changed because of a work zone or incident by the use of temporary traffic control devices, flaggers, uniformed law enforcement officers, or other authorized personnel.

263. Theoretical Gore—a longitudinal point at the upstream end of a neutral area at an exit ramp or channelized turn lane where the channelizing lines that separate the ramp or channelized turn lane from the adjacent through lane(s) begin to diverge, or a longitudinal point at the downstream end of a neutral area at an entrance ramp or channelized entering lane where the channelizing lines that separate the ramp or channelized entering lane from the adjacent through lane(s) intersect each other.

264. Through Train—a train movement that continues without stopping or reversing direction throughout the entire length of the rail traffic detection circuit length approaching a highway-rail grade crossing.

265. Timed Exit Gate Operating Mode—a mode of operation where the exit gate descent at a grade crossing is based on a predetermined time interval.

266. Toll Booth—a shelter where a toll attendant is stationed to collect tolls or issue toll tickets. A toll booth is located adjacent to a toll lane and is typically set on a toll island.

267. Toll Collection—manual or electronic methods and elements used to collect a fee for use of a toll facility. Toll collection methods include:

- **(a) Electronic Toll Collection (ETC)—a cashless system for automated collection of tolls from moving or stopped vehicles through wireless technologies such as radio-frequency communication or optical scanning. ETC systems are classified as one of the following:**
  - **(1) systems that require users to have registered toll accounts, with the use of equipment inside or on the exterior of vehicles, such as a transponder or barcode decal, that communicates with or is detected by roadside or overhead receiving equipment, or with the use of license plate optical scanning, to automatically deduct the toll from the registered user account,**
  - **(2) systems that do not require users to have registered toll accounts because vehicle license plates are optically scanned and invoices for the toll amount are typically sent through postal mail to the address of the vehicle owner, or**
  - **(3) systems that allow electronic toll collection for both registered and non-registered toll accounts.**
- **(b) Open-Road Tolling (ORT)—a system designed to allow electronic toll collection (ETC) from vehicles traveling at posted speeds. Open-road tolling might be used on toll roads or toll facilities in conjunction with toll plazas. Open-road tolling is also typically used on managed lanes and on toll facilities that only accept payment by ETC.**
- **(c) Manual Toll Collection—a system of toll collection from stopped vehicles through acceptance of cash, toll tickets, tokens, or credit cards, and may involve issuance of receipts. Toll collection may be by a machine or toll booth attendant.**

(1) **Toll-Ticket System—a toll system in which the user of a toll road must stop to receive a ticket from a machine or toll booth attendant upon entering the toll facility. The ticket denotes the user's point of entry and, upon exiting the toll system, the user surrenders the ticket and is charged a toll based on the distance traveled between the points of entry and exit.**

(2) **Attended Lane (Manual Lane)—a toll lane adjacent to a toll booth occupied by a human toll collector who makes change, issues receipts, and performs other toll-related functions. Attended lanes at toll plazas typically require vehicles to stop to pay the toll.**

(3) **Exact Change Lane (Automatic Lane)—a non-attended toll lane that has a receptacle into which road users deposit coins totaling the exact amount of the toll. Exact Change lanes at toll plazas typically require vehicles to stop to pay the toll.**

268. **Toll Island—a raised island on which a toll booth or other toll collection and related equipment are located.**
269. **Toll Lane—an individual lane located within a toll plaza in which a toll payment is collected or, for toll-ticket systems, a toll ticket is issued.**
270. **Toll Plaza—the location at which tolls are collected consisting of a grouping of toll booths, toll islands, toll lanes, and, typically, a canopy. Toll plazas might be located on highway mainlines or on interchange ramps. A mainline toll plaza is sometimes referred to as a barrier toll plaza because it interrupts the traffic flow.**
271. **Toll Road (Facility)—a road or facility that is open to traffic only by payment of a user toll or fee.**
272. **Traffic—pedestrians, ~~bicyclists,~~ ridden or herded animals, vehicles, streetcars, trackless trolleys, and other devices ~~conveyances~~ either singularly or together while using for purposes of travel any highway or site roadway open to public travel. [ORC 4511.01]**
273. **Traffic Control Device—all flaggers, all signs, signals, markings, channelization devices, or other devices that use colors, shapes, symbols, words, sounds, and/or tactile information for the primary purpose of communicating a regulatory, warning, or guidance message to road users on a street, highway, pedestrian facility, bikeway, pathway, or site roadway open to public travel. Section 1A.02 contains information regarding items that are not traffic control devices. [ORC 4511.01]**
274. **Traffic Control Signal (Traffic Signal)—see Highway Traffic Signal.**
275. **Train—one or more locomotives coupled, with or without cars, that operates on rails or tracks and to which all other traffic must yield the right-of-way by law at highway-rail grade crossings.**
276. **Transverse Markings—pavement markings that are generally placed perpendicular and across the flow of traffic such as shoulder markings; word, symbol, and arrow markings; stop lines; crosswalk lines; parking space markings; and others.**
277. **Traveled Way—the portion of the roadway for the movement of vehicles, exclusive of the shoulders, berms, sidewalks, and parking lanes.**
278. **Turn Bay—a lane for the exclusive use of turning vehicles that is formed on the approach to the location where the turn is to be made. In most cases where turn bays are provided, drivers who desire to turn must move out of a through lane into the newly-formed turn bay in order to turn. A through lane that becomes a turn lane is considered to be a lane drop rather than a turn bay.**
279. **Two-Stage Bicycle Turn Box—a designated area at an intersection intended to provide bicyclists a place to wait for traffic to clear before proceeding in a different direction of travel.**

280. Uncontrolled Approach—an approach on which vehicles are not controlled by a traffic control signal, hybrid beacon, STOP sign, or YIELD sign.

281. Upstream—a term that refers to a location that is encountered by traffic prior to a downstream location as it flows in an "upstream to downstream" direction. For example, "the upstream end of a lane line separating the turn lane from a through lane on the approach to an intersection" is the end of the line that is furthest from the intersection.

281a. Urban District---means the territory contiguous to and including any street or highway which is built up with structures devoted to business, industry, or dwelling houses situated at intervals of less than one hundred feet for a distance of a quarter of a mile or more, and the character of such territory is indicated by official traffic control devices. [ORC 4511.01]

282. Urban Street—a type of street normally characterized by relatively low speeds, wide ranges of traffic volumes, narrower lanes, frequent intersections and driveways, significant pedestrian traffic, and more businesses and houses.

283. Variable Message Sign—see Changeable Message Sign.

284. Vehicle—every device in, upon, or by which any person or property can be transported or drawn upon a highway, except trains and light rail transit operating in exclusive or semi-exclusive alignments. Light rail transit equipment operating in a mixed-use alignment, to which other traffic is not required to yield the right-of-way by law, is a vehicle.

284a. Ohio Revised Code definition of Vehicle is: every device, including a motorized bicycle and an electric bicycle, in, upon, or by which any person or property may be transported or drawn upon a highway, except that "vehicle" does not include any motorized wheelchair, any electric personal assistive mobility device, any low-speed micromobility device, any personal delivery device as defined in section 4511.513 of the Revised Code, any device that is moved by power collected from overhead electric trolley wires or that is used exclusively upon stationary rails or tracks, or any device, other than a bicycle, that is moved by human power. [ORC 4511.01]

284b. Vehicle, Emergency—emergency vehicles of municipal, township, or county departments or public utility corporations when identified as such as required by law, the director of public safety, or local authorities, and motor vehicles when commandeered by a police officer. [ORC 4511.01]

284c. Vehicle, Motor—every vehicle propelled or drawn by power other than muscular power or power collected from overhead electric trolley wires, except motorized bicycles, road rollers, traction engines, power shovels, power cranes, and other equipment used in construction work and not designed for or employed in general highway transportation, hole-digging machinery, well-drilling machinery, ditch-digging machinery, farm machinery, and trailers designed and used exclusively to transport a boat between a place of storage and a marina, or in and around a marina, when drawn or towed on a street or highway for a distance of no more than ten miles and at a speed of twenty-five miles per hour or less. [ORC 4511.01]

284d. Vehicle, Public Safety—means any of the, following:

(1) Ambulances, including private ambulance companies under contract to a municipal corporation, township, or county, and private ambulances and nontransport vehicles bearing license plates issued under section 4503.49 of the Revised Code;

(2) Motor vehicles used by public law enforcement officers or other persons sworn to enforce the criminal and traffic laws of the state;

(3) Any motor vehicle when properly identified as required by the director of public safety, when used in response to fire emergency calls or to provide emergency medical service to ill or injured persons, and when operated by a duly qualified person who is a member of a volunteer rescue service or a volunteer fire department, and who is on duty pursuant to the rules or directives of that service. The state fire marshal shall be

designated by the director of public safety as the certifying agency for all public safety vehicles described in division (E)(3) of (ORC 4511.01(E))

(4) Vehicles used by fire departments, including motor vehicles when used by volunteer fire fighters responding to emergency calls in the fire department service when identified as required by the director of public safety. Any vehicles used to transport or provide emergency medical service to an ill or injured person, when certified as a public safety vehicle, shall be considered a public safety vehicle when transporting an ill or injured person to a hospital regardless of whether such vehicle has already passed a hospital.

(5) Vehicles used by the commercial motor vehicle safety enforcement unit for the enforcement of orders and rules of the public utilities commission as specified in section 5503.34 of the Revised Code. [ORC 4511.01]

285. **Vibrotactile Pedestrian Device—an accessible pedestrian signal feature that communicates, by touch, information about pedestrian timing using a vibrating surface.**
286. **Visibility-Limited Signal Face or Visibility-Limited Signal Section—a type of signal face or signal section designed (or shielded, hooded, or louvered) to restrict the visibility of a signal indication from the side, to a certain lane or lanes, or to a certain distance from the stop line.**
287. **Walk Interval—an interval during which the WALKING PERSON (symbolizing WALK) signal indication is displayed.**
288. **Warning Light—a portable, powered, yellow, lens-directed, enclosed light that is used in a temporary traffic control zone in either a steady burn or a flashing mode.**
289. **Warning Sign—a sign that gives notice to road users of a situation that might not be readily apparent.**
290. **Warrant—a warrant describes a threshold condition based upon average or normal conditions that, if found to be satisfied as part of an engineering study, shall result in analysis of other traffic conditions or factors to determine whether a traffic control device or other improvement is justified. Warrants are not a substitute for engineering judgment. The fact that a warrant for a particular traffic control device is met is not conclusive justification for the installation of the device.**
291. **Wayside Horn System—a stationary horn (or a series of horns) located at a grade crossing that is used in conjunction with train-activated or light rail transit-activated warning systems to provide audible warning of approaching rail traffic to road users on the highway or pathway approaches to a grade crossing, either as a supplement or alternative to the sounding of a locomotive horn.**
292. **Worker—a person on foot whose duties place him or her within the right-of-way of a street, highway, or pathway, such as: construction and maintenance forces; survey crews; utility crews; responders to incidents within the right-of-way; and law enforcement personnel when directing traffic, investigating crashes, and handling lane closures, obstructed roadways, and disasters within the right-of-way.**
293. **Wrong-Way Arrow—a slender, elongated, white pavement marking arrow placed upstream from the ramp terminus to indicate the correct direction of traffic flow. Wrong-way arrows are intended primarily to warn wrong-way road users that they are going in the wrong direction.**
294. **Yellow Change Interval—the first interval following the green or flashing arrow interval during which the steady yellow signal indication is displayed.**
295. **Yield Line—a row of solid white isosceles triangles pointing toward approaching vehicles extending across approach lanes to indicate the point at which the yield is intended or required to be made.**

Section 1C.03 Meanings of Acronyms and Abbreviations Used in this Manual

Standard:

01 The following acronyms and abbreviations, when used in this Manual, shall have the following meanings:

1. **AADT—annual average daily traffic**
2. **AASHTO—American Association of State Highway and Transportation Officials**
3. **AC—alternating current**
4. **ADA—Americans with Disabilities Act**
5. **ADAS—Advanced Driver Assistance Systems**
6. **ADS—Automated Driving System**
7. **ADT—average daily traffic**
8. **AFAD—Automated Flagger Assistance Device**
9. **ANSI—American National Standards Institute**
10. **AREMA—American Railway Engineering and Maintenance-of-Way Association**
11. **AV—automated vehicle**
12. **cd/lx/m^2---candelas per lux per square meter**
13. **CFR—Code of Federal Regulations**
14. **CMS—changeable message sign**
15. **dBA—A-weighted decibels**
16. **DC—direct current**
17. **DDT—Dynamic Driving Task**
18. **EPA—Environmental Protection Agency**
19. **ETC—electronic toll collection**
20. **EV—electric vehicle**
21. **FHWA—Federal Highway Administration**
22. **FRA—Federal Railroad Administration**
23. **ft—foot or feet**
24. **FTA—Federal Transit Administration**
25. **HOV—high-occupancy vehicle**
26. **IEEE—Institute of Electrical and Electronics Engineers**
27. **IES—Illuminating Engineering Society**
28. **ILEV—inherently low-emission vehicle**
29. **in—inch(es)**
30. **ISEA—International Safety Equipment Association**
31. **ITE—Institute of Transportation Engineers**
32. **ITS—intelligent transportation systems**
33. **L—taper length**
34. **LED—light-emitting diode**
35. **LP—liquified petroleum**
36. **LRT—light rail transit**
37. **mi—mile(s)**
38. **MPH or mph—miles per hour**
39. **MUTCD—Manual on Uniform Traffic Control Devices for Streets and Highways**
40. **N—length of one line segment plus one gap of a broken line**
41. **NCEES—National Council of Examiners for Engineering and Surveying**
42. **NCHRP—National Cooperative Highway Research Program**

42a. OAC---Ohio Administrative Code

43. **ODD—Operational Design Domain**

43a. ODOT---Ohio Department of Transportation
43b. OMUTCD---"Ohio Manual on Uniform Traffic Control Devices"
44. OPM—U.S. Office of Personnel Management
44a. ORC---Ohio Revised Code
44b. ORDC---Ohio Rail Development Commission
44c. ORE---Office of Roadway Engineering (ODOT)
45. ORT—open-road tolling
45a. OTO---Office of Traffic Operations (ODOT)
45b. OTSMO---Office of Transportation Systems Management & Operations (ODOT)
46. PCMS—portable changeable message sign
46a. PUCO---Public Utilities Commission of Ohio
47. PRT—perception-response time
48. RRFB—rectangular rapid-flashing beacon
49. RV—recreational vehicle
49a. SDMM---"Sign Designs and Markings Manual" (ODOT)
50. SAE—Society of Automotive Engineers
51. SHV—Specialized Hauling Vehicle
52. SPF—safety performance function
53. TA—Typical Application
54. TDD—telecommunication device for the deaf
54a. TEM---"Traffic Engineering Manual" (ODOT)
55. TRB—Transportation Research Board
56. TTC—temporary traffic control
57. U.S.—United States
58. U.S.C.—United States Code
59. USDOT—United States Department of Transportation
60. UVC—Uniform Vehicle Code
61. VPH or vph—vehicles per hour
62. V2I—vehicle to infrastructure

CHAPTER 1D - Provisions Applicable to Traffic Control Devices in General

Section 1D.02 Responsibility and Authority for Traffic Control Devices

Standard:

01 The responsibility for the design, placement, operation, maintenance, and uniformity of traffic control devices in compliance with the provisions of this Manual shall rest with the public agency or the official having jurisdiction, or, in the case of site roadways open to public travel, with the private owner or private official having jurisdiction.

01a Villages shall obtain permission from the Ohio Department of Transportation prior to placing or maintaining any traffic control signal on a state highway within the village. [ORC 4511.11(C)]

02 All regulatory traffic control devices shall be supported by laws, ordinances, or regulations.

03 Traffic control devices, public announcements or notices, and other signs or messages within the highway right-of-way shall be placed only as authorized by a public authority or the official having jurisdiction, or, in the case of site roadways or private toll roads open to public travel, by the private owner or private official having jurisdiction, for the purpose of regulating, warning, or guiding traffic.

04 When the public agency or the official having jurisdiction over a street or highway or, in the case of site roadways open to public travel, the private owner or private official having jurisdiction, has granted proper authority, others such as contractors and public utility companies shall be allowed to install temporary traffic control devices in temporary traffic control zones. Such traffic control devices shall comply with the provisions of this Manual.

05 Signs and other devices that do not have any traffic control purpose that are placed within the highway right-of-way shall not be located where they will interfere with, or detract from, traffic control devices.

Support:

06 States are encouraged to adopt, through policy or legislation, the provisions of 23 CFR 750.108 that restrict outdoor advertising from resembling traffic control devices.

Section 1D.03 Engineering Study and Engineering Judgment

Support:

01 Definitions of professional engineer, engineering study, and engineering judgment are provided in Section 1C.02.

02 The application of engineering study and engineering judgment is a fundamental principle of the use of traffic control devices. It is for this reason that, in most cases, the selection of a particular device is not required by a Standard provision, but is determined by engineering study or engineering judgment. Many Standard provisions in this Manual specifically require, by explicit language in the individual provisions or by implication, the application of engineering study or engineering judgment in applying those Standards. Site-specific conditions might result in the determination that it is impossible or impracticable to comply with a Standard at that location. In such a case, a deviation from the requirement of a particular Standard at that location might be the only possibility. ~~In such limited, specific cases, the deviation is allowed, provided that the agency or official having jurisdiction fully documents, through an engineering study, the engineering basis for the deviation.~~

Standard:

02a In such limited, specific cases, the deviation is allowed, the agency or official having jurisdiction shall fully document, through an engineering study, the engineering basis for the deviation as described in Paragraph 2 of this section.

Standard:

03 This Manual describes the application of traffic control devices, but shall not be a legal requirement for their installation.

Support:

04 The MUTCD does not mandate, and is not intending to imply, that an engineer must make the final decision whether to implement or execute the determination or advice of an engineer by installing or constructing the traffic control device to the engineer's specification in the field. Rather, the engineer, individual under supervision of an engineer, or other individual as duly authorized by State law to engage in the practice of engineering, develops an engineering-based solution that includes the specifications for selection and placement of traffic control devices, but the responsibility for a final decision to implement that solution rests with the agency having jurisdiction over the roadway, after consultation with and based on advice from the engineer.

Guidance:

05 The decision to use a particular device at a particular location should be made on the basis of either an engineering study or the application of engineering judgment by an engineer, someone under the direct supervision of an engineer, or other individual as duly authorized by State law to engage in the practice of engineering. Thus, while this Manual provides Standards, Guidance, and Options for design and application of traffic control devices, this Manual should not be considered a substitute for

engineering judgment. Engineering judgment should be exercised in the selection and application of traffic control devices, as well as in the location and design of roads and streets that the devices complement.

06 Early in the processes of location and design of roads and streets, engineers should coordinate such location and design with the design and placement of the traffic control devices to be used with such roads and streets.

07 Jurisdictions, or owners of site roadways or private toll roads open to public travel, with responsibility for traffic control that do not have an engineer on their staff who is trained and/or experienced in traffic control devices should seek engineering assistance from others, such as the State transportation agency, their county, a nearby large city, or a traffic engineering consultant.

Support:

08 The provisions of this Manual are intended to be interpreted and applied by engineers or those under the supervision of an engineer. The construction of the provisions of this Manual, therefore, are informed by bases referenced in Paragraphs 9 and 10 of this Section.

09 The National Council of Examiners for Engineering and Surveying (NCEES) has defined the practice of engineering as "any service or creative work requiring engineering education, training, and experience in the application of engineering principles and the interpretation of engineering data to engineering activities that potentially impact the health, safety, and welfare of the public." The practice of engineering is, therefore, subject to regulation in the public interest and is regulated by the State licensing boards in order to safeguard the health, safety, and welfare of the public. The NCEES has defined an engineer as "an individual who is qualified to practice engineering by reason of engineering education, training, and experience in the application of engineering principles and the interpretation of engineering data."

10 The U.S. Office of Personnel Management (OPM) has defined the professional knowledge of engineering as "the comprehensive, in-depth knowledge of mathematical, physical, and engineering sciences applicable to a specialty field of engineering that characterizes a full 4-year engineering program leading to a bachelor's degree, or the equivalent." The OPM has defined professional ability to apply engineering knowledge as "the ability to (a) apply fundamental and diversified professional engineering concepts, theories, and practices to achieve engineering objectives with versatility, judgment, and perception; (b) adapt and apply methods and techniques of related scientific disciplines; and (c) organize, analyze, interpret, and evaluate scientific data in the solution of engineering problems."

11 Requisite technical training in the application of the principles of the MUTCD might be available from the State's Local Technical Assistance Program (LTAP) for needed engineering guidance and assistance.

PART 2 – SIGNS

Introduction

- Refer to the "Sign Designs and Markings Manual" (SDMM) for information in addition to that included in the "Standard Highway Signs" (SHS) publication referenced in the MUTCD.
- Additional paragraphs added to the Ohio Supplement document include a number and a letter. Each new paragraph is independent of the preceding numbered paragraph. As an example, paragraph 04a is independent of paragraph 04.
- Ohio uses a State specific State Route sign/design. State Routes shall use the Ohio State Route sign/design. See the SDMM for more details.

CHAPTER 2B – REGULATORY SIGNS, BARRICADES, AND GATES

Section 2B.04 STOP Sign (R1-1) and ALL-WAY Plaque (R1-3P)

Standard:

01 When it is determined that a full stop is always required on an approach to an intersection, a STOP (R1-1) sign (see Figure 2B-1) shall be used.

02 Secondary legends shall not be used on STOP sign faces.

03 The STOP sign shall not be displayed using a changeable message sign.

04 At intersections where all approaches are controlled by STOP signs (see Section 2B.12), an ALL-WAY (R1-3P) supplemental plaque (see Figure 2B-1) shall be mounted below each STOP sign. The ALL-WAY plaque shall have a white legend and border on a red background.

05 Supplemental plaques with legends such as 2-WAY, 3-WAY, 4-WAY, or other numbers of ways shall not be used with STOP signs.

Support:

06 The use of the CROSS TRAFFIC DOES NOT STOP (W4-4P Series) and other plaques with variations of this legend is described in Section 2C.66.

Guidance:

07 The TRAFFIC FROM LEFT (RIGHT) DOES NOT STOP (W4-4aP) plaque or ONCOMING TRAFFIC DOES NOT STOP (W4-4bP) plaque should be used at intersections where STOP signs control all but one approach to the intersection, unless the only non-stopped approach is from a one-way street.

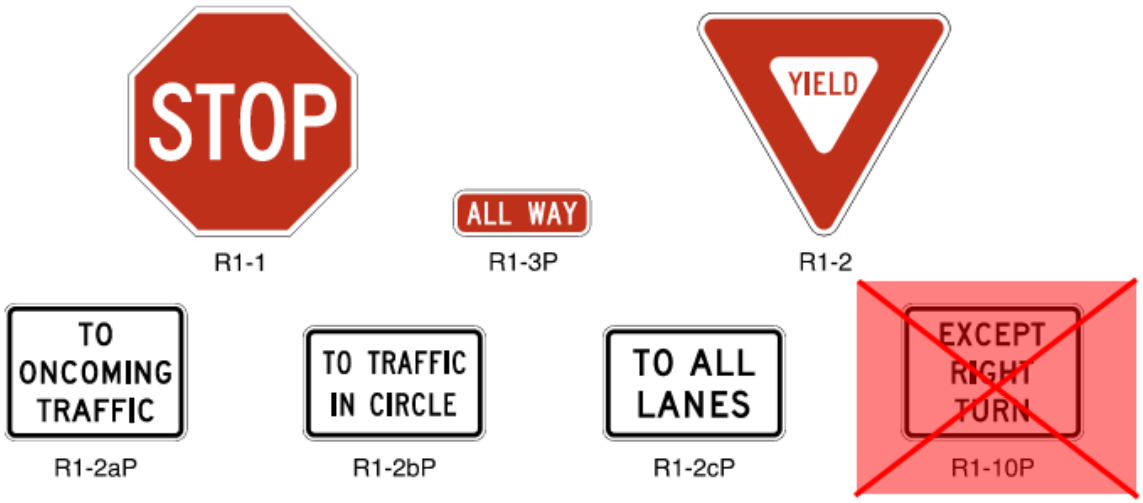
~~Option:~~

~~08 The EXCEPT RIGHT TURN (R1-10P) plaque (see Figure 2B-1) may be mounted below the STOP sign if an engineering study determines that a special combination of geometry and traffic volumes is present that makes it possible for right-turning traffic on the approach to be allowed to enter the intersection without stopping.~~ [ORC 4511.43]

Support:

09 The design and application of Stop Beacons are described in Section 4S.05.

Figure 2B-1. STOP and YIELD Signs and Plaques



Section 2B.19 Yield Here To Pedestrians Signs ~~and Stop Here For Pedestrians Signs~~ (R1-5 Series)

Support:

01 The R1-5 series signs are intended to mitigate the scenario that can place pedestrians at risk by blocking other drivers' view of pedestrians and by blocking the pedestrians' view of the vehicles approaching in the adjacent lanes.

Standard:

02 Yield Here to ~~(Stop Here for)~~ Pedestrians (R1-5, R1-5a, ~~R1-5b, R1-5c,~~ and R1-5d~~, and R1-5e~~) signs (see Figure 2B-2) shall be used if yield ~~(stop)~~ lines are used in advance of a marked crosswalk only where it crosses an uncontrolled multi-lane approach. The Stop Here for Pedestrians signs shall only be used where the law specifically requires that a driver must stop for a pedestrian in a crosswalk. Ohio Revised Code 4511.46 addresses the right-of-way of pedestrians within crosswalks. The legend STATE LAW shall not be displayed on the R1-5 series signs. [ORC 4511.46]

Support:

02a ORC 4511.46 requires yielding to pedestrian within crosswalk. It is not the intent to use STOP HERE FOR PEDESTRIANS (R1-5b) at traffic signals. STOP HERE ON RED (R10-6) is more appropriate at traffic signals than R1-5b signs. The R1-5b could create confusion for the driver if the signal is green but there is a pedestrian at the crosswalk waiting to cross. [ORC 4511.46]

Guidance:

03 If yield ~~(stop)~~ lines and Yield Here to ~~(Stop Here for)~~ Pedestrians signs are used in advance of a crosswalk that crosses an uncontrolled multi-lane approach, the signs should be placed 20 to 50 feet in advance of the nearest edge of the crosswalk (see Section 3B.19 and Figure 3B-16).

Standard:

04 When used with a School Crossing assembly within school zones (see Part 7), the R1-5a ~~and R1-5c~~ sign~~s~~ shall be used in place of the R1-5 ~~and R1-5b~~ sign~~s~~ in accordance with Paragraph 2 of this Section.

05 When used with a Trail Crossing assembly (see Section 2C.54), the R1-5d ~~and R1-5c~~ sign~~s~~ shall be used in place of the R1-5 ~~and R1-5b~~ sign~~s~~ in accordance with Paragraph 2 of this Section.

Guidance:

06 When Yield Here to ~~(Stop Here for)~~ Pedestrians signs are provided in advance of a crosswalk across an multi-lane approach, parking should be prohibited in the area between the yield ~~(stop)~~ line and the crosswalk.

07 Yield ~~(stop)~~ lines and Yield Here to ~~(Stop Here for)~~ Pedestrians signs should not be used in advance of crosswalks that cross an approach to or departure from a roundabout.

Option:

08 Yield Here to ~~(Stop Here for)~~ Pedestrians signs may be used in accordance with Paragraphs 2 through 4 of this Section even if yield ~~(stop)~~ lines are not used.

09 A Pedestrian Crossing (W11-2) warning sign may be placed overhead or may be post-mounted with a diagonal downward-pointing arrow (W16-7P) plaque at the crosswalk location where Yield Here to ~~(Stop Here for)~~ Pedestrians signs have been installed in advance of the crosswalk.

Standard:

10 If a W11-2 sign is post-mounted at the crosswalk location where a Yield Here to ~~(Stop Here for)~~ Pedestrians sign is used on the approach, the Yield Here to ~~(Stop Here for)~~ Pedestrians sign shall not be placed on the same post as the W11-2 sign.

Option:

11 An advance Pedestrian Crossing (W11-2) warning sign with an AHEAD or a distance supplemental plaque may be used in conjunction with a Yield Here to ~~(Stop Here for)~~ Pedestrians sign on the approach to the same crosswalk.

12 In-Street Pedestrian Crossing signs and Yield Here to ~~(Stop Here for)~~ Pedestrians signs may be used together at the same crosswalk.

Section 2B.20 In-Street and Overhead Pedestrian and Trail Crossing Signs (R1-6 and R1-9 Series)

Option:

01 The In-Street Pedestrian Crossing (R1-6~~ or R1-6a~~) sign (see Figure 2B-2), In-Street Trail Crossing (R1-6d~~ or R1-6e~~) sign (see Figure 2B-2), the Overhead Pedestrian Crossing (R1-9~~ or R1-9a~~) sign (see Figure 2B-2), or the Overhead Trail Crossing (R1-9d~~ or R1-9e~~) sign (see Figure 2B-2) may be used to remind road users of laws regarding right-of-way at an unsignalized crosswalk. The legend STATE LAW may be displayed at the top of the R1-6 series and R1-9 series signs if applicable. On the R1-6 series signs, the legend~~s~~ ~~STOP or~~ YIELD may be used instead of the appropriate ~~STOP sign or~~ YIELD sign symbol.

02 Highway agencies may develop and apply criteria for determining the applicability of In-Street Pedestrian Crossing signs.

Standard:

03 The STOP FOR legend shall only be used in States where the State law specifically requires that a driver must stop for a pedestrian or a bicyclist in a crosswalk. Ohio Revised Code 4511.46 addresses the right-of-way of pedestrians within crosswalks. [ORC 4511.46]

Support:

03a ORC 4511.46 requires yielding to pedestrian within crosswalk. It is not the intent to use STOP HERE FOR PEDESTRIANS (R1-5b) at traffic signals. STOP HERE ON RED (R10-6) is more appropriate at traffic signals than R1-5b signs. The R1-5b could create confusion for the driver if the signal is green but there is a pedestrian at the crosswalk waiting to cross. [ORC 4511.46]

04 If used, In-Street Pedestrian or Trail Crossing signs shall only be placed in the roadway at the crosswalk location on the center line, on a median island, on a lane line, or on an edge line.

05 The In-Street Pedestrian or Trail Crossing sign shall not be post-mounted on the left-hand or right-hand side of the roadway.

Support:

06 Section 3I.02 contains information about the use of tubular markers to provide additional emphasis for a pedestrian crossing.

Standard:

07 If used, the Overhead Pedestrian or Trail Crossing sign shall be placed over the roadway at the crosswalk location.

08 When used at an uncontrolled crossing, the In-Street or Overhead Pedestrian Crossing sign shall be used only as a supplement to a Pedestrian Crossing (W11-2) warning sign with a diagonal downward-pointing arrow (W16-7P) plaque at the crosswalk location.

09 When used at an uncontrolled crossing, the In-Street or Overhead Trail Crossing sign shall be used only as a supplement to a Trail Crossing (W11-15) warning sign with a diagonal downward-pointing arrow (W16-7P) plaque at the crosswalk location.

10 An In-Street or Overhead Pedestrian or Trail Crossing sign shall not be placed in advance of the crosswalk to educate road users about the State law prior to reaching the crosswalk, nor shall it be installed as an educational display that is not near any crosswalk.

Guidance:

11 If an island (see Chapter 3J) is available, the In-Street Pedestrian or Trail Crossing sign, if used, should be placed on the island.

Option:

12 In-Street Pedestrian or Trail Crossing signs may be mounted back-to-back in the median or on the center line of an undivided roadway.

Standard:

13 The In-Street Pedestrian or Trail Crossing sign and the Overhead Pedestrian Crossing or Trail sign shall not be used at crosswalks on approaches controlled by a traffic control signal, pedestrian hybrid beacon, or an emergency-vehicle hybrid beacon.

14 Except where the In-Street Crossing sign is placed on a physical island, the sign support shall be designed to bend over and then bounce back to its normal vertical position when struck by a vehicle.

Option:

15 The In-Street and Overhead Pedestrian and Trail Crossing sign may be used at intersections or midblock pedestrian crossings with flashing beacons.

Support:

16 The provisions of Section 2A.15 concerning mounting height are not applicable for the In-Street Pedestrian Crossing sign. Section 2A.18 contains information about sign mounting methods.

Standard:

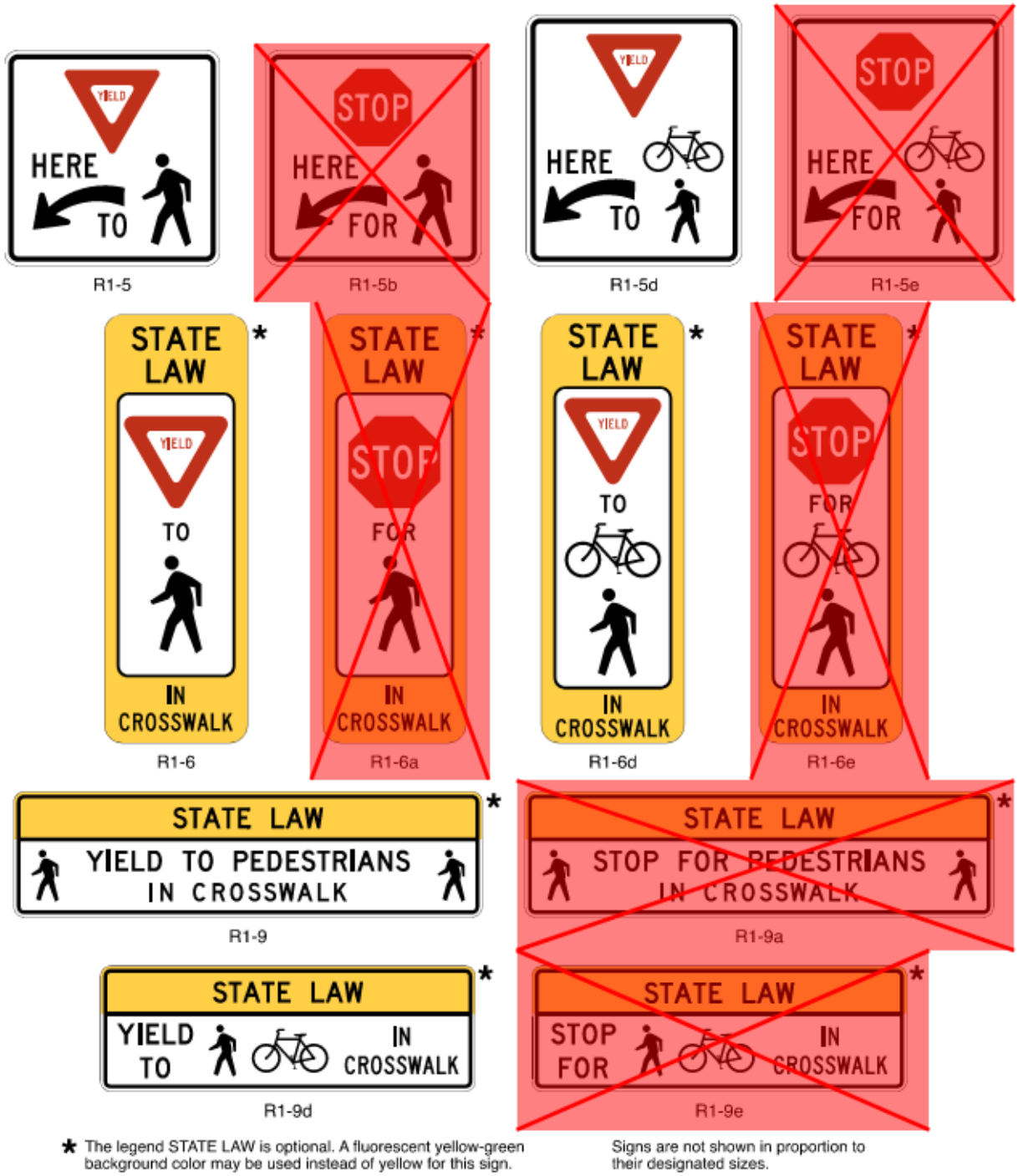
17 The top of an In-Street Pedestrian or Trail Crossing sign shall be a maximum of 4 feet above the pavement surface. The top of an In-Street Pedestrian or Trail Crossing sign placed in an island shall be a maximum of 4 feet above the island surface.

Option:

18 The In-Street Pedestrian Crossing or Trail Crossing signs may be used seasonally to prevent damage in winter because of plowing operations, and may be removed at night if the pedestrian activity at night is minimal.

19 Both sign mounting types, In-Street Crossing (R1-6 series) signs and Overhead Crossing (R1-9 series) signs, may be used together at the same crosswalk.

Figure 2B-2. Unsignalized Pedestrian Crosswalk Signs



Section 2B.21 Speed Limit Sign (R2-1)

Support:

01 In general, the maximum speed limits applicable to rural and urban roads are established:

A. Statutorily – a maximum speed limit applicable to a particular class of road, such as freeways or city streets, that is established by State law; or

B. As speed zones – based on engineering studies.

02 State statutory limits might restrict the maximum speed limit that can be established on a particular road, notwithstanding what an engineering study might indicate.

03 Agencies with designated authorities to set speed limits, which include States, and sometimes local jurisdictions, can establish non-statutory speed limits or designate reduced speed zones using an engineering study. Setting appropriate speed limits is especially important to ensure safety for all road users in varying types of contexts, particularly on roadways where adjacent land use suggests that trips could be served by varied modes. These situations include urban and suburban non-freeway arterials or rural arterials that serve as main streets in smaller communities, consistent with the context classifications of urban core, urban, suburban, and rural towns found in "A Policy on Geometric Design of Highways and Streets," 2018 Edition, AASHTO. When setting a speed limit, a range of factors such as land-use context, pedestrian and bicyclist activity, crash history, intersection spacing, driveway density, roadway geometry, roadside conditions, roadway functional classification, traffic volume, and observed speeds can influence the speed limit determined in the engineering study. The engineering study will determine which of the recommended factors will prevail in setting the speed limit.

04 Jurisdictions can use speed limit setting tools and methods such as expert systems and those consistent with the safe system approach as part of the required engineering study for a non-statutory speed limit. As speed limit setting tools vary, jurisdictions need to be aware of their limitations and advantages, possible variation between the tools and the need to explore gaps or weaknesses of tools, and weigh the output accordingly in consideration of setting speed limits.

05 To achieve desired operating speeds, agencies often implement other speed management strategies concurrently with setting speed limits, such as traffic calming measures, geometric design features, speed safety cameras, and increased enforcement.

Standard:

06 Speed zones (other than statutory speed limits) shall only be established on the basis of an engineering study that has been performed in accordance with traffic engineering practices. The engineering study shall consider the roadway context.

Guidance:

07 Among the factors that should be considered when conducting an engineering study for establishing or reevaluating speed limits within speed zones are the following:

A. *Roadway environment (such as roadside development, number and frequency of driveways and access points, and land use), functional classification, public transit volume and location or frequency of stops, parking practices, and pedestrian and bicycle facilities and activity;*
B. *Roadway characteristics (such as lane widths, shoulder condition, grade, alignment, median type, and sight distance);*
C. *Geographic context (such as an urban district, rural town center, non-urbanized rural area, or suburban area), and multi-modal trip generation;*
D. *Reported crash experience for at least a 12-month period;*
E. *Speed distribution of free-flowing vehicles including the pace, median (50th-percentile), and 85th-precentile speeds; and*

F. A review of past speed studies to identify any trends in operating speeds.

08 When the 85th-percentile speed is appreciably greater than the posted speed limit, and the roadway context does not support setting a higher speed limit, the engineering study should consider whether changes to geometric features, enforcement, and/or other speed-reduction countermeasures might improve compliance with the posted speed limit. A similar approach should be used if the results of past speed studies indicate that the 85th-percentile speed has consistently increased.

09 On urban and suburban arterials, and on rural arterials that serve as main streets through developed areas of communities, the 85th-percentile speed should not be used to set speed limits without consideration of all factors described in Paragraph 7 of this Section.

10 On a freeway, expressway, or rural highway (outside urbanized locations or conditions), the speed limit that is posted within a speed zone should be within 5 mph of the 85th-percentile speed of free-flowing motor-vehicle traffic under the following conditions:

A. All factors described in Paragraph 7 of this Section have been considered and determined to be non-mitigating, and

B. The measures described in Paragraph 8 of this Section have been considered to the extent practicable.

11 State and local agencies should conduct engineering studies to reevaluate non-statutory speed limits on segments of their roadways that have undergone significant changes since the last review (such as changes to roadway context, the addition or elimination of parking or driveways, changes in the number of travel lanes, changes in the configuration of bicycle lanes, changes to road geometrics, changes in traffic control signal coordination, or significant changes in traffic volumes).

12 Speed studies for signalized intersection approaches should be taken outside the influence area of the traffic control signal, which is generally considered to be approximately ½ mile, to avoid obtaining skewed results for the speed distribution. If the signal spacing is less than 1 mile, the speed study should be at approximately the middle of the segment.

12a Section 4511.21 of the Ohio Revised Code (ORC) establishes statutory speed limits and prescribes how those speed limits may be altered when an engineering study determines that they do not fit the road and traffic conditions. The process by which an altered speed limit is established is typically referred to as speed zoning. This speed zoning process is described in Part 12 of the ODOT "Traffic Engineering Manual" (TEM). [ORC 4511.21]

Standard:

13 The Speed Limit (R2-1) sign (see Figure 2B-3) shall display the limit established by law, ordinance, regulation, or as adopted by the authorized agency based on an engineering study. The speed limits displayed shall be in multiples of 5 mph.

14 Speed Limit (R2-1) signs, indicating speed limits for which posting is required by law, shall be located at the points of change from one speed limit to another.

15 At the downstream end of the section to which a particular speed limit applies, a Speed Limit sign showing the next speed limit shall be installed.

16 Speed Limit signs indicating the statutory speed limits shall be installed at entrances to the State and, where appropriate, at jurisdictional boundaries in urban areas.

Guidance:

17 Additional Speed Limit signs should be installed beyond interchanges and major intersections and at other locations where it is necessary to remind road users of the speed limit that is applicable.

Support:

18 The "Traffic Control Devices Handbook" contains suggested criteria on the spacing of speed limit signs.

Option:

19 If a jurisdiction has a policy of installing Speed Limit signs in accordance with statutory requirements only on the streets that enter a city, neighborhood, or residential area to indicate the speed limit that is applicable to the entire city, neighborhood, or residential area unless otherwise posted, a CITYWIDE (R2-5aP), NEIGHBORHOOD (R2-5bP), or RESIDENTIAL (R2-5cP) plaque may be mounted above the Speed Limit sign and an UNLESS OTHERWISE POSTED (R2-5P) plaque may be mounted below the Speed Limit sign (see Figure 2B-3).

Support:

20 Section 2C.40 contains information about the use of speed zone signs to inform road users of a reduced or variable speed zone to provide advance notice to comply with the posted speed limit ahead.

Option:

21 If a W3-5b sign is posted to provide notice of a variable speed zone, an END VARIABLE SPEED LIMIT (R2-13) sign (see Figure 2B-3) may be installed at the downstream end of the zone to provide notice to road users of the termination of the speed zone.

Standard:

22 If a W3-5c sign is posted to provide notice of a truck speed zone, an END TRUCK SPEED LIMIT (R2-14) sign (see Figure 2B-3) shall be installed at the downstream end of the zone to provide notice to road users of the termination of the speed zone.

Guidance:

23 An advisory speed plaque (see Section 2C.59) mounted below a warning sign should be used to warn road users of an advisory speed for a roadway condition. A Speed Limit sign should not be used for this purpose.

24 Advance traffic control warning signs (see Section 2C.35), intersection warning signs (see Section 2C.41), and/or other traffic control devices are appropriate warning prior to a signalized intersection. A Speed Limit sign should not be used for this purpose.

Option:

25 Two types of Speed Limit signs may be used: one to designate passenger car speeds, including any nighttime information or maximum or minimum speed limit that might apply; and the other to show any special speed limits for trucks and other vehicles.

Guidance:

26 No more than three speed limits should be displayed on any one Speed Limit sign or assembly.

Option:

27 A variable speed limit sign that changes the speed limit for traffic and ambient conditions may be installed provided that the appropriate speed limit is displayed at the proper times and locations in accordance with Paragraphs 9 and 10 of this Section.

Standard:

28 The variable speed limit sign legend "SPEED LIMIT" shall be a black legend on a white retroreflective background. The variable speed limit legend shall be displayed in white LEDs on an opaque black background.

Support:

29 Section 2C.13 contains information about the use of a Vehicle Speed Feedback plaque mounted below a Speed Limit sign that displays to approaching drivers the speed at which they are traveling.

30 Advisory speed signs and plaques are discussed in Sections 2C.12 and 2C.59. Temporary traffic control zone speed signs are discussed in Part 6. The WORK ZONE (G20-5aP) plaque intended for

installation above a Speed Limit sign is discussed in Section 6G.08. School Speed Limit signs are discussed in Section 7B.05.

Section 2B.25 Higher Fines Signs and Plaque (R2-6P, R2-10, and R2-11)

Standard:

01 Except as provided in Paragraph 3 of this Section, if increased fines are imposed for traffic violations within a designated zone of a roadway, a BEGIN HIGHER FINES ZONE (R2-10) sign (see Figure 2B-3) or a FINES HIGHER (R2-6P) plaque (see Figure 2B-3) shall be used to provide notice to road users.

02 If an R2-10 sign or an R2-6P plaque is posted to provide notice of increased fines for traffic violations, an END HIGHER FINES ZONE (R2-11) sign (see Figure 2B-3) shall be installed at the downstream end of the zone to provide notice to road users of the termination of the increased fines zone.

Option:

03 The BEGIN HIGHER FINES ZONE (R2-10) sign or FINES HIGHER (R2-6P) plaque may be omitted where the higher fines zone is established by statute.

Support:

03a Ohio Revised Code 5501.27 stipulates higher penalties in construction zones and the ODOT TEM and SDMM provide details on the signage to be used. R2-10 and R2-6P signs are to be omitted within temporary traffic control zones. See Ohio Supplement 6G.08 for additional information. [ORC 5501.27]

*Guidance***:**

04 The BEGIN HIGHER FINES ZONE sign or FINES HIGHER plaque should be located at the beginning of the temporary traffic control zone, school zone, or other applicable designated zone and just beyond any interchanges, major intersections, or other major traffic generators.

05 Agencies should limit the use of the Higher Fines signs and plaque to locations where work is actually underway, or to locations where the roadway, shoulder, or other conditions, including the presence of a school zone and/or a reduced school speed limit zone, require a speed reduction or extra caution on the part of the road user.

Standard:

06 The Higher Fines signs and plaque shall have a black legend and border on a white rectangular background. All supplemental plaques mounted below the Higher Fines signs and plaque shall have a black legend and border on a white rectangular background.

07 The FINES HIGHER plaque shall be mounted below an applicable regulatory or warning sign in a temporary traffic control zone (see Section 6G.08), a school zone (see Section 7B.06), or other applicable designated zone.

Option:

08 Alternate legends such as BEGIN (or END) DOUBLE FINES ZONE may also be used for the R2-10 and R2-11 signs.

09 The legend FINES HIGHER on the R2-6P plaque may be replaced by FINES DOUBLE (R2-6aP), $XX FINE (R2-6bP), or another legend appropriate to the specific regulation (see Figure 2B-3).

10 The following may be mounted below an R2-10 sign or R2-6P plaque:

A. A supplemental plaque specifying the times that the higher fines are in effect (similar to the S4-1P plaque shown in Figure 7B-1),
B. A supplemental plaque WHEN CHILDREN (WORKERS) ARE PRESENT, or
C. A supplemental plaque WHEN FLASHING (similar to the S4-4P plaque shown in Figure 7B-1) if used in conjunction with a Speed Limit Sign Beacon (see Section 4S.04).

Section 2B.27 Intersection Lane Control Signs (R3-5 through R3-8)

Standard:

01 Intersection Lane Control signs (see Figure 2B-4), if used, shall require road users in certain lanes to turn, shall permit turns from a lane where such turns would otherwise not be permitted, shall require a road user to stay in the same lane and proceed straight through an intersection, or shall indicate permitted movements from a lane.

Support:

02 Intersection Lane Control signs have three applications:

A. Mandatory Movement Lane Control (R3-5 series and R3-7 series) signs,
B. Optional Movement Lane Control (R3-6 series) signs, and
C. Advance Intersection Lane Control (R3-8 series) signs.

Guidance:

03 When Intersection Lane Control signs are mounted overhead, each sign used should be placed over the lane ~~or a projection of the lane~~ to which it applies.

04 On signalized approaches where through lanes that become mandatory turn lanes, multiple-lane turns that include shared lanes for through and turning movements, or other lane-use regulations are present that would be unexpected by unfamiliar road users, overhead Intersection Lane Control signs should be installed at the signalized location over the appropriate lanes ~~or projections thereof~~ and in advance of the intersection over the appropriate lanes.

05 Where overhead mounting on the approach is impracticable for the Advance and/or Intersection lane Control signs, one of the following alternatives should be employed:

A. At locations where through lanes become mandatory turn lanes, a Mandatory Movement Lane Control (R3-7) sign should be post-mounted on the left-hand side of the roadway where a through lane is becoming a mandatory left-turn lane on a one-way street or where a median of sufficient width for the signs is available, or on the right-hand side of the roadway where a through lane is becoming a mandatory right-turn lane.
B. At locations where a through lane is becoming a mandatory left-turn lane on a two-way street where a median of sufficient width for the signs is not available, and at locations where multiple-lane turns that include shared lanes for through and turning movements are present, an Advance Intersection Lane Control (R3-8 series) sign should be post-mounted in a prominent location in advance of the intersection, and consideration should be given to the use of an oversized version in accordance with Table 2B-1.

06 *Use of an overhead sign for one approach lane should not require installation of overhead signs for the other lanes of that approach.*

Option:

07 Intersection Lane Control signs may be omitted where:

A. A turn bay has been provided by physical construction or pavement markings, and
B. Only the road users using such turn bays are permitted to make a turn in that direction.

08 At roundabouts, Intersection Lane Control (R3-5, R3-6, and R3-8 series) signs may display any of the arrow symbol options shown in Figure 2B-5.

Section 2B.28 Mandatory Movement Lane Control Signs (R3-5, R3-5a, R3-7, R3-19 Series, and R3-20) and Plaques

Standard:

01 Mandatory Movement Lane Control (R3-5, R3-5a, and R3-7) signs (see Figure 2B-4), if used, shall indicate only the single vehicle movement that is required from the lane.

02 The Mandatory Movement Lane Control (R3-5 and R3-5a) symbol signs shall include the legend ONLY and shall be mounted overhead over the specific lanes to which they apply (see Section 2B.27). The R3-7 sign shall be for post-mounting only. The R3-5, R3-5a, and R3-7 signs shall not be mounted at the far side of the intersection.

03 When the mandatory movement applies to lanes exclusively designated for HOV traffic, the HOV 2+ (R3-5cP) supplemental plaque shall be used. When the mandatory movement applies to lanes that are not HOV facilities, but are lanes exclusively designated for buses and/or taxis, the TAXI LANE (R3-5dP) and/or BUS LANE (R3-5gP) supplemental plaques shall be used.

04 If used, the Mandatory Movement Lane Control (R3-7) sign shall be located in advance of the intersection, such as near the upstream end of the mandatory movement lane, and/or at the near side of the intersection where the regulation applies.

Guidance:

05 The use of the Mandatory Movement Lane Control (R3-7) word message sign should be limited to only locations that are adjacent to the full-width portion of a mandatory turn lane. The R3-7 sign should not be installed adjacent to a through lane in advance of a turn bay taper or adjacent to a turn bay taper.

06 Mandatory Movement Lane Control signs should be accompanied by lane-use arrow markings, especially where traffic volumes are high, where there is a high percentage of commercial vehicles, or where other distractions exist.

07 Where the restriction does not apply to buses or bicycles an EXCEPT BUSES (R3-7aP) or EXCEPT BICYCLES (R3-7bP) plaque should be used.

Option:

08 The Through Only (R3-5a) sign may be used to require a road user in a particular lane to proceed straight through an intersection.

09 The diamond symbol may be used instead of the word message HOV on the R3-5cP supplemental plaque.

10 Where a mandatory left or U-turn lane is added at a median location, a LANE FOR LEFT TURN ONLY (R3-19) or LANE FOR U TURN ONLY (R3-19a) sign may be post-mounted on the median at the beginning of the taper. Where a U turn and a left turn are both allowed, a LANE FOR U AND LEFT TURNS ONLY (R3-19b) sign may be used. Where a R3-19 series sign is used, Mandatory Movement Lane Control signs along the turn lane in the median may be omitted.

11 The R3-19 series signs may be used where the added median turn lane is separated from the through lanes by a channelizing or divisional island.

12 On an approach to a mandatory turn lane where traffic regularly enters the shoulder to access the turn lane inappropriately, creating safety or operational issues, a DO NOT DRIVE ON SHOULDER (R4-17) sign (see Section 2B.43) may be used to supplement the standard Mandatory Movement Lane Control (R3-5 and/or R3-7 series) signs.

Section 2B.29 Optional Movement Lane Control Signs (R3-6 Series)

Standard:

01 Optional Movement Lane Control (R3-6, R3-6a and R3-6b) signs (see Figure 2B-4), if used, shall be used for two or more movements from a specific lane or to emphasize permitted movements. The Optional Movement Lane Control sign shall be mounted overhead over the specific lane to which it applies. The R3-6 series signs shall not be mounted at the far side of the intersection.

02 If used, the Optional Movement Lane Control signs shall indicate all permissible movements from specific lanes.

03 Because more than one movement is permitted from the lane, the word message ONLY shall not be used on an Optional Movement Lane Control sign.

04 Optional Movement Lane Control signs shall be used for two or more movements from a specific lane where a movement, not allowed by State statute or local ordinance, is permitted.

05 The Optional Movement Lane Control signs shall not be used alone to effect a turn prohibition.

Guidance:

06 If used, the Optional Movement Lane Control sign should be located overhead in advance of the intersection, such as near the upstream end of an adjacent mandatory movement lane, and/or overhead at the intersection where the regulation applies.

Section 2B.30 Advance Intersection Lane Control Signs (R3-8 Series)

Option:

01 Advance Intersection Lane Control (R3-8 series~~, R3-8a, and R3-8b~~) signs (see Figure 2B-4) may be used to indicate the configuration of all lanes ahead.

02 The word messages ONLY, THRU, HOV 2+, TAXI, BUS, or BIKE, or the bicycle symbol, may be used within the border in combination with the arrow symbols of the R3-8 sign series. The R3-5cP, R3-5dP, and R3-5gP supplemental plaques may be installed at the top outside border of the R3-8 sign over the applicable lane designation on the sign. The diamond symbol may be used instead of the word message HOV. The minimum allowable vehicle occupancy requirement may vary based on the level established for a particular facility.

03 Where a bicycle lane is between two general-purpose lanes the R3-8 series signs may be modified to show the bicycle lane with a white legend on a black background in accordance with designs of the R3-8x series signs (see Figure 2B-4).

Guidance:

04 When used, an Advance Intersection Lane Control sign should be placed at an adequate distance in advance of the intersection, either along the lane tapers or at the beginning of the turn lane so that road users can select the appropriate lane (see Figure 2A-4).

Option:

05 An Advance Intersection Lane Control sign may be repeated closer to the intersection along the approach for additional emphasis.

Standard:

06 An Advance Intersection Lane Control (R3-8 series) sign shall not be mounted at the far side of an intersection to which it applies.

07 Where three or more approach lanes are available to traffic, Advance Intersection Lane Control (R3-8 series) signs, if used, shall be post-mounted in advance of the intersection and shall not be mounted overhead.

08 When only the two outermost lanes of the roadway are shown on a R3-8 sign, the R3-5bP or R3-5fP plaque shall be mounted above the R3-8 sign.

Section 2B.53 Design of Parking, Standing, and Stopping Signs

Standard:

01 Parking, standing, or stopping signs (see Figure 2B-25) shall be rectangular or square.

02 Public agencies shall follow established law (State law, local ordinance, or regulation) as adopted by the authorized agency regarding what messages are allowed on parking signs.

03 The legend on parking signs shall state applicable regulations. Parking signs shall comply with the standards of shape, color, and location.

04 Prohibitive parking signs (see Drawing A in Figure 2B-25 for some commonly used examples) shall be used where parking is prohibited at all times or at specific times. Except as otherwise provided in this Section, parking signs shall have a red legend and border on a white background and, when the parking prohibition symbol is used, the symbol "P" shall be black.

05 Permissive parking signs (see Drawing B in Figure 2B-25) shall be used where only time-limited parking or parking in a particular manner is allowed. Permissive parking signs shall have a green legend and border on a white background.

Guidance:

06 Parking information, should be displayed from top to bottom of the sign, as applicable, in the following order:

A. The restriction or prohibition;
B. The times of the day that it is applicable, if not all hours;
C. The days of the week that it is applicable, if not every day;
D. Qualifying or supplementary information;
E. Exemptions to the restriction of prohibition; and
F. Any tow-away message or symbol.

07 If the parking regulation applies to a limited area or zone, the limits of the regulation should be shown by arrows or supplemental plaques. If arrows are used and if the sign is at the end of a parking zone, there should be a single-headed arrow pointing in the direction that the regulation is in effect. If the sign is at an intermediate point in a zone, there should be a double-headed arrow pointing both ways. When a single sign is used at the transition point between two parking zones, it should display a right arrow and a left arrow pointing in the direction that the respective regulations apply.

Standard:

08 The times and days for which the parking regulations are in effect shall be posted if they are not in effect at all times of day or all days of the week.

Option:

09 As an alternate to the use of arrows to show designated restriction zones, the following word messages may be used: BEGIN, END, HERE TO CORNER, HERE TO ALLEY, and THIS SIDE OF SIGN.

10 The R8 series signs (see Drawing A in Figure 2B-25) may be used where sufficient notice of a parking prohibition is satisfied by the use of single signs and are not needed to designate the beginning and end of a zone in which parking is prohibited or restricted. In rural and certain other areas the legends NO PARKING ON PAVEMENT (R8-1) or NO STOPPING ON PAVEMENT (R8-5) are generally suitable and may be used where parking or stopping is allowed on an unpaved shoulder or border adjacent to the paved portion of the road. If a roadway has an adjacent paved shoulder on which parking or stopping is allowed, the legend NO PARKING EXCEPT ON SHOULDER (R8-2) or NO STOPPING EXCEPT ON SHOULDER (R8-6) may be used. The R8-3 symbol sign or the word message NO PARKING may be used to prohibit any parking along a roadway. Word legend supplemental plaques may be mounted below the NO PARKING signs or the word legend may be incorporated within signs whose sizes are increased accordingly. The R8-3 series signs may include word legends such as ON PAVEMENT (R8-3c), ON BRIDGE (R8-3d), ON TRACKS (R8-3e), and EXCEPT ON SHOULDERS (R8-3f).

Guidance:

11 Where special parking restrictions are imposed during heavy snowfall or a declared snow emergency, a Snow Emergency Route (R7-203) sign (see Drawing A in Figure 2B-25) should be installed. The legend should be modified to display the specific regulations. The upper section of the sign should display the designation as a snow emergency route in a white legend and border on a red background.

12 If a fee is charged for on-street parking and payments are made at a multi-space parking meter, instead of individual parking meters for each parking space, Metered Parking (R7-21 and R7-22) signs (see Drawing B in Figure 2B-25) should be used to define the area where the multi-space parking meter applies. The Multi-Space Parking Meter (R7-20) sign (see Drawing B in Figure 2B-25) should be used at the meter location to direct road users to the meter.

Option:

13 Where payments can be made electronically, such as by telephone or mobile application, the Mobile Parking Payment (R7-21aP) plaque (see Drawing B in Figure 2B-25) may be installed below or as part of the legend of a Metered Parking sign.

Standard:

14 If the metered parking is subject to a maximum time limit, the appropriate time limit (number of hours or minutes) shall be displayed on the Metered Parking (R7-21 and R7-22) signs and, except as provided in Paragraph 15 of this Section, on the Multi-space Parking Meter (R7-20) signs.

Option:

15 Where the maximum time limit varies by the time of the day or by the day of the week, the display of the time limits may be omitted from the R7-20 sign and, instead, be displayed on the multi-space parking meter so that they are visible to pedestrians as they make payments.

Standard:

16 Where parking spaces are reserved for persons with disabilities, the Accessible Parking (R7-8) sign (see Drawing D in Figure 2B-25) shall be used to designate the space and shall display the official International Symbol of Accessibility.

17 Where parking spaces that are reserved for persons with disabilities are designed to accommodate wheelchair vans, a VAN ACCESSIBLE (R7-8aP) plaque (see Drawing D in Figure 2B-25) shall be mounted below the R7-8 sign.

17a In accordance with ORC Section 4511.69, the R7-8 sign shall be supplemented with the $250 FINE MINIMUM (R7-H8b) sign (see Drawing D in Figure 2B-25) and mounted immediately adjacent to it. For mounting height requirements refer to 2A.15, P04 through P07. [ORC 4511.69]

Guidance:

18 Where parking spaces are designated for parking of electric vehicles, an Electric Vehicle Parking (R7-111 series, R7-112 series, and R7-113) sign (see Drawing E of Figure 2B-25) should be installed adjacent to the designated spaces. Where there is no time limit, the R7-111 series sign should be used. Where parking is subject to a time limit, the R7-112 series sign should be used.

19 Where parking spaces are only designated for charging of electric vehicles, an R7-113 sign or R7-114 series sign (see Drawing E in Figure 2B-25) should be installed adjacent to the designated spaces.

20 Where additional restrictions apply while a vehicle occupies the designated space, the R7-113P series plaques should be installed below the R7-113 sign or the R7-114 series signs.

Option:

21 Where parking is prohibited during certain hours and time-limited parking or parking in a particular manner is allowed during certain other time periods, the red Parking Prohibition and green Permissive Parking signs may be designed as follows (see Drawing C in Figure 2B-25):

A. Two 12 x 18-inch parking signs may be used with the red Parking Prohibition (R7-1) sign installed above or to the left of the green Permissive Parking (R7-108) sign; or
B. A single sign (R7-200 or R7-200a) may be used.

22 At the transition point between two parking zones, a single sign (R7-200 or R7-200a) or two signs mounted side-by-side may be used.

23 The words NO PARKING may be used as an alternative to the No Parking symbol (see the R7-2a sign in Drawing A in Figure 2B-25).

24 Alternate designs for the R7-107 sign may be developed such as the R7-107a sign (see Drawing A in Figure 2B-25). Alternate designs may include, on a single sign, a transit logo, an approved bus symbol, a parking prohibition, the words BUS STOP, and an arrow. The reverse side of the R7-107 series signs may display bus routing information for pedestrians.

25 A Tow-Away Zone (R7-201P or R7-201aP) plaque (see Drawing A in Figure 2B-25) may be mounted below any parking prohibition sign. The word legend TOW-AWAY ZONE may be incorporated into the parking prohibition sign in lieu of using a separate plaque.

26 The R7-201P plaque may have a black or red symbol and border on a white background.

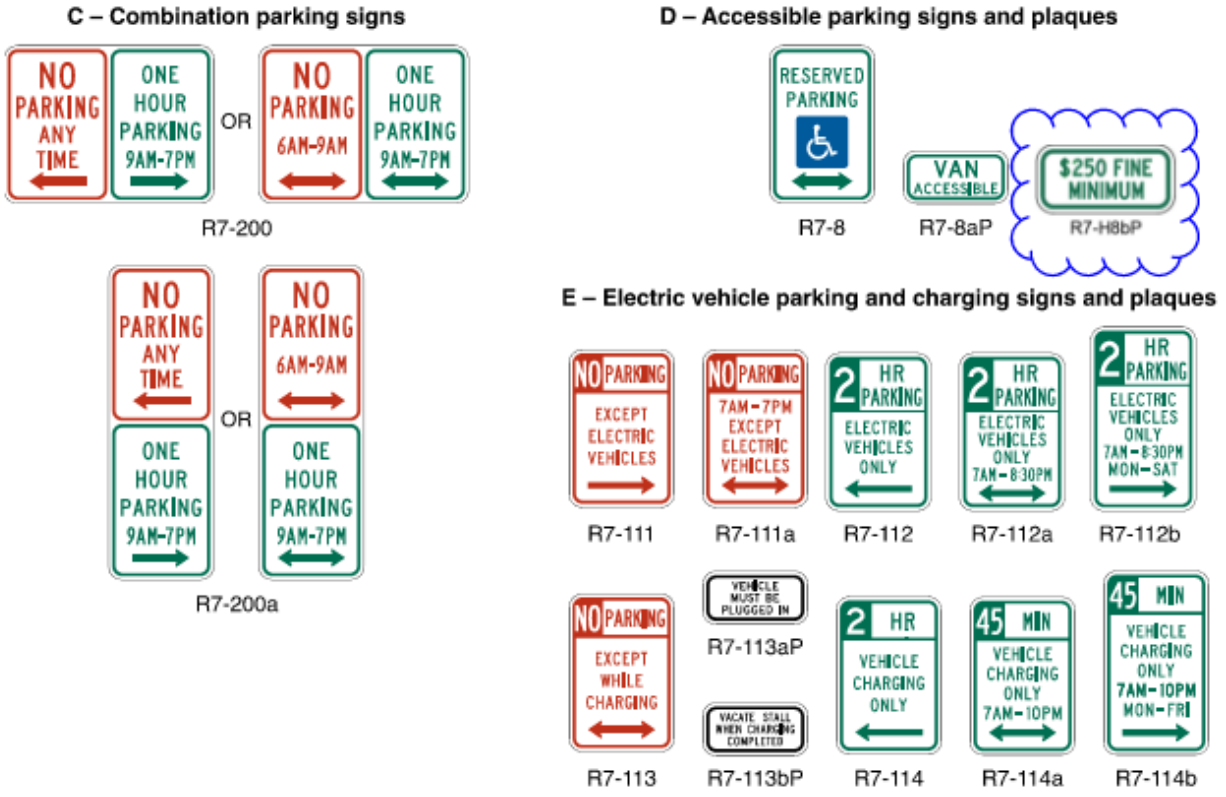
Guidance:

27 When a legend other than that on the standard parking signs is necessary, letter height, symbol size, and basic sign layout should be consistent with the those shown on the standard parking signs as detailed in the "Standard Highway Signs" publication (see Section 1A.05.)

28 In general, the letter height of the principal legend on parking signs sized for urbanized applications should be at least 2 inches.

Figure 2B-25. Parking, Standing, and Stopping Signs and Plaques (R7 and R8 Series)
(Sheet 1 of 2)

Figure 2B-25. Parking, Standing, and Stopping Signs and Plaques (R7 and R8 Series)
(Sheet 2 of 2)



Section 2B.59 Traffic Signal Signs and Plaques (R10-5 through R10-30)

Option:

01 To supplement traffic signal control, traffic signal (R10-5 through R10-30) signs (see Figure 2B-28) may be used to regulate road users.

02 Traffic signal signs may be installed at certain locations to clarify signal control. Among the legends that may be used for this purpose are:

A. LEFT (RIGHT) ON GREEN ARROW ONLY (R10-5),
B. STOP HERE ON RED (R10-6 or R10-6a) for observance of stop lines,
C. DO NOT BLOCK INTERSECTION (R10-7) for avoidance of traffic obstructions,
D. USE LANE(S) WITH GREEN ARROW (R10-8) for obedience to lane-use control signals (see Chapter 4T),
E. LEFT (RIGHT) TURN SIGNAL (R10-10),
F. U TURN SIGNAL (R10-10a) for exclusive control of a U-turn movement,
G. U TURN YIELD TO RIGHT TURN (R10-16),
H. LEFT (RIGHT) TURN YIELD ON GREEN (symbolic circular green) (R10-12),
I. LEFT (RIGHT) TURN YIELD ON FLASHING YELLOW ARROW (R10-12a), and
J. LEFT (RIGHT) TURN YIELD ON FLASHING RED ARROW AFTER STOP (R10-27).

Guidance:

03 If used, the LEFT ON GREEN ARROW ONLY sign, the LEFT TURN SIGNAL sign, the LEFT TURN YIELD ON GREEN (symbolic circular green)) sign, the LEFT TURN YIELD ON FLASHING

YELLOW ARROW sign, or the LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP) sign should be located adjacent to the left-turn signal face.

04 If used, the RIGHT ON GREEN ARROW ONLY sign, the RIGHT TURN SIGNAL sign, the RIGHT TURN YIELD ON FLASHING YELLOW ARROW sign, or the RIGHT TURN YIELD ON FLASHING RED ARROW AFTER STOP sign should be located adjacent to the right-turn signal face.

05 A U TURN YIELD TO RIGHT TURN (R10-16) sign should 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.

Option:

06 If used, a U TURN SIGNAL (R10-10a) sign may be installed adjacent to the signal face that exclusively controls a U-turn movement.

07 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-28) may be installed in advance of the intersection.

08 In situations where traffic control signals are coordinated for progressive timing, the Traffic Signal Speed (I1-1) sign may be used (see Section 2H.04).

Standard:

09 The CROSSWALK—STOP ON RED (symbolic circular red) (R10-23) and STOP ON STEADY RED- YIELD ON FLASHING RED AFTER STOP (R10-23a) signs (see Figure 2B-28) shall only be used in conjunction with pedestrian hybrid beacons (see Section 4J.02).

10 The EMERGENCY SIGNAL (R10-13) sign (see Figure 2B-28) shall be used in conjunction with emergency-vehicle traffic control signals (see Section 4M.02).

11 The EMERGENCY SIGNAL—STOP ON FLASHING RED (R10-14 or R10-14a) sign (see Figure 2B-28) shall be used in conjunction with emergency-vehicle hybrid beacons (see Section 4N.02).

Option:

12 If needed for extra emphasis, a STOP HERE ON FLASHING RED (R10-14b) sign may be installed with an emergency-vehicle hybrid beacon.

Standard:

13 **The Left Turn Yield to Bicycles (R10-12b) sign shall be limited to applications where the conflicting bicyclist movement would be unexpected in direction, location, or similar condition that would tend to violate the expectation of a turning motorist.**

13a As noted in Section 4F.04 and 4F.08, when a flashing yellow arrow indication is used a LEFT TURN YIELD ON FLASHING YELLOW ARROW (R10-12a) sign shall be installed with it for at least five years.

Guidance:

14 The Left Turn Yield to Bicycles sign should be located adjacent to the left-turn signal face.

Option:

15 If needed for additional emphasis, an additional Left Turn Yield to Bicycles sign with an AT SIGNAL (R10-31P) supplemental plaque (see Figure 2B-28) may be installed in advance of the intersection for motor vehicles.

16 Where conditions might warrant additional emphasis to drivers turning at a signalized intersection where potential pedestrian conflicts might not be readily apparent, a Turning Vehicles Yield to ~~(Stop for)~~ Pedestrians (R10-15~~, R10-15a~~) sign (see Figure 2B-28) may be used.

~~**Standard:**~~

~~**17 The Turning Vehicles Stop for Pedestrians (R10-15a) sign shall only be used in jurisdictions where laws, ordinances or resolutions specifically require that a driver must stop for a pedestrian.**~~

Support:

17a Ohio Revised Code 4511.46 addresses the right-of-way of pedestrians within crosswalks. [ORC 4511.46]

Guidance:

18 The R10-15 ~~series~~ sign~~s~~, where used, should be placed as follows:

A. On the near right corner of the signalized intersection for right-turning vehicles.
B. On the far left corner of the signalized intersection for the left-turning vehicles onto a two-way street.
C. On the near left corner of the signalized intersection for left-turning vehicles from a one-way street onto a one-way street.

Figure 2B-28. Traffic Signal Signs and Plaques (Sheet 1 of 2)

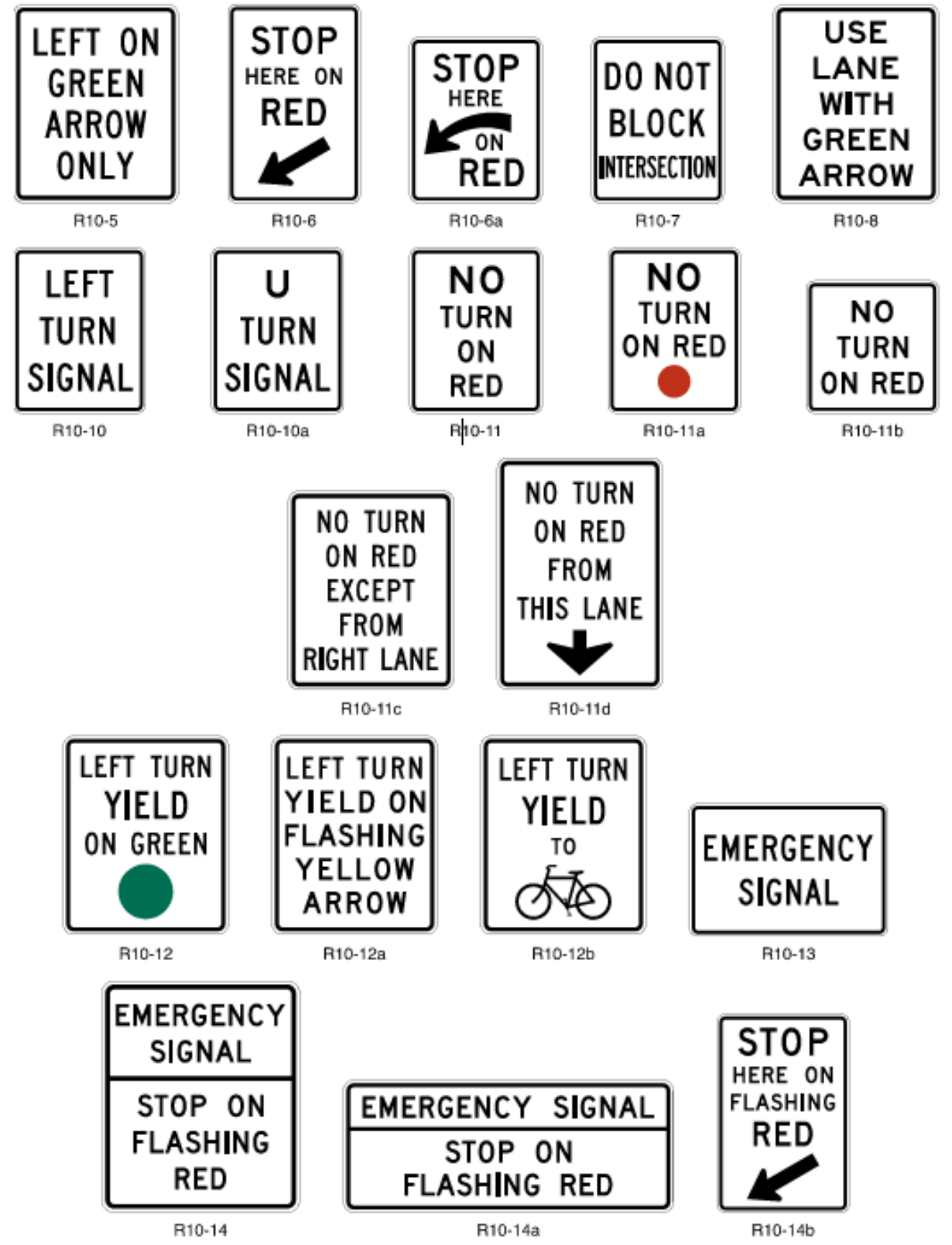


Figure 2B-28. Traffic Signal Signs and Plaques (Sheet 2 of 2)

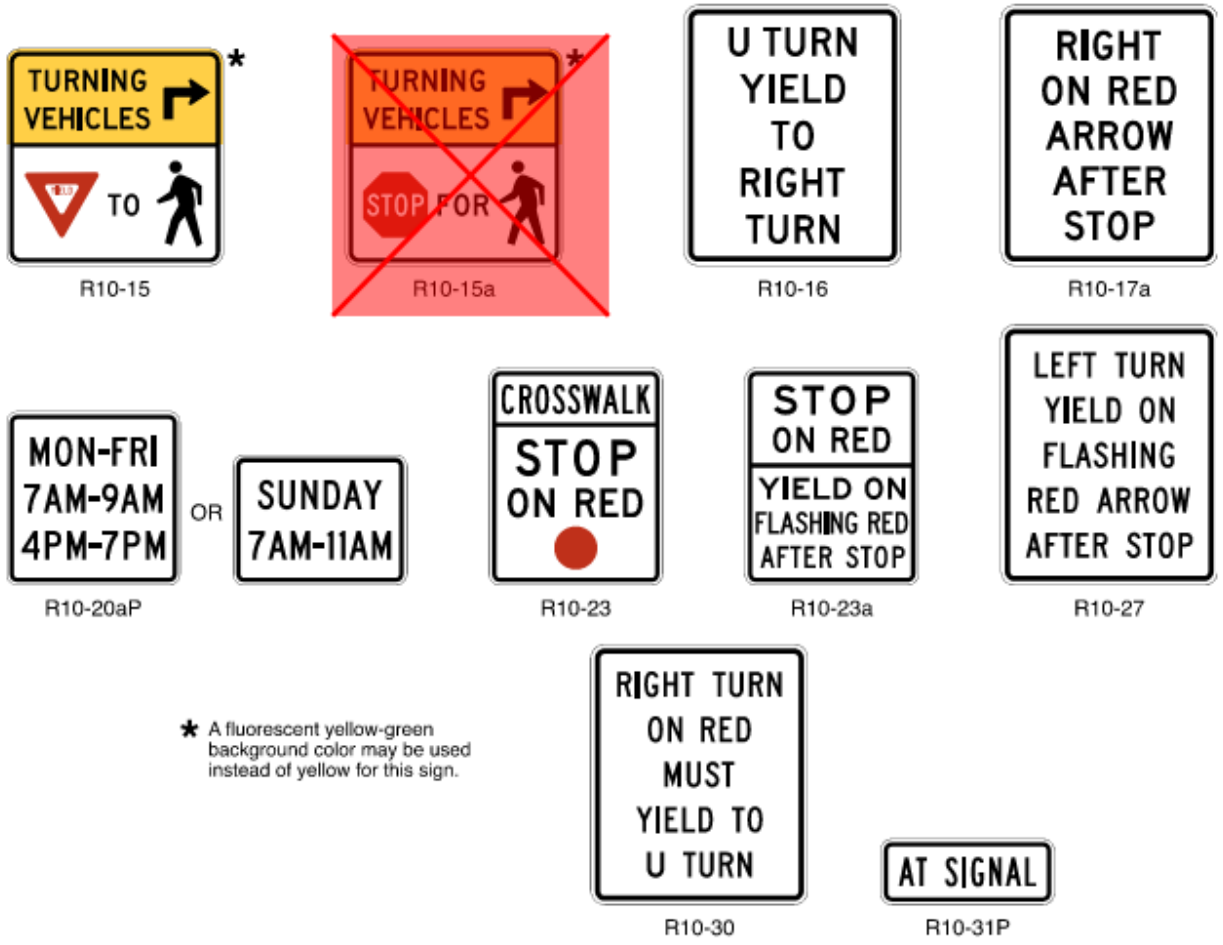
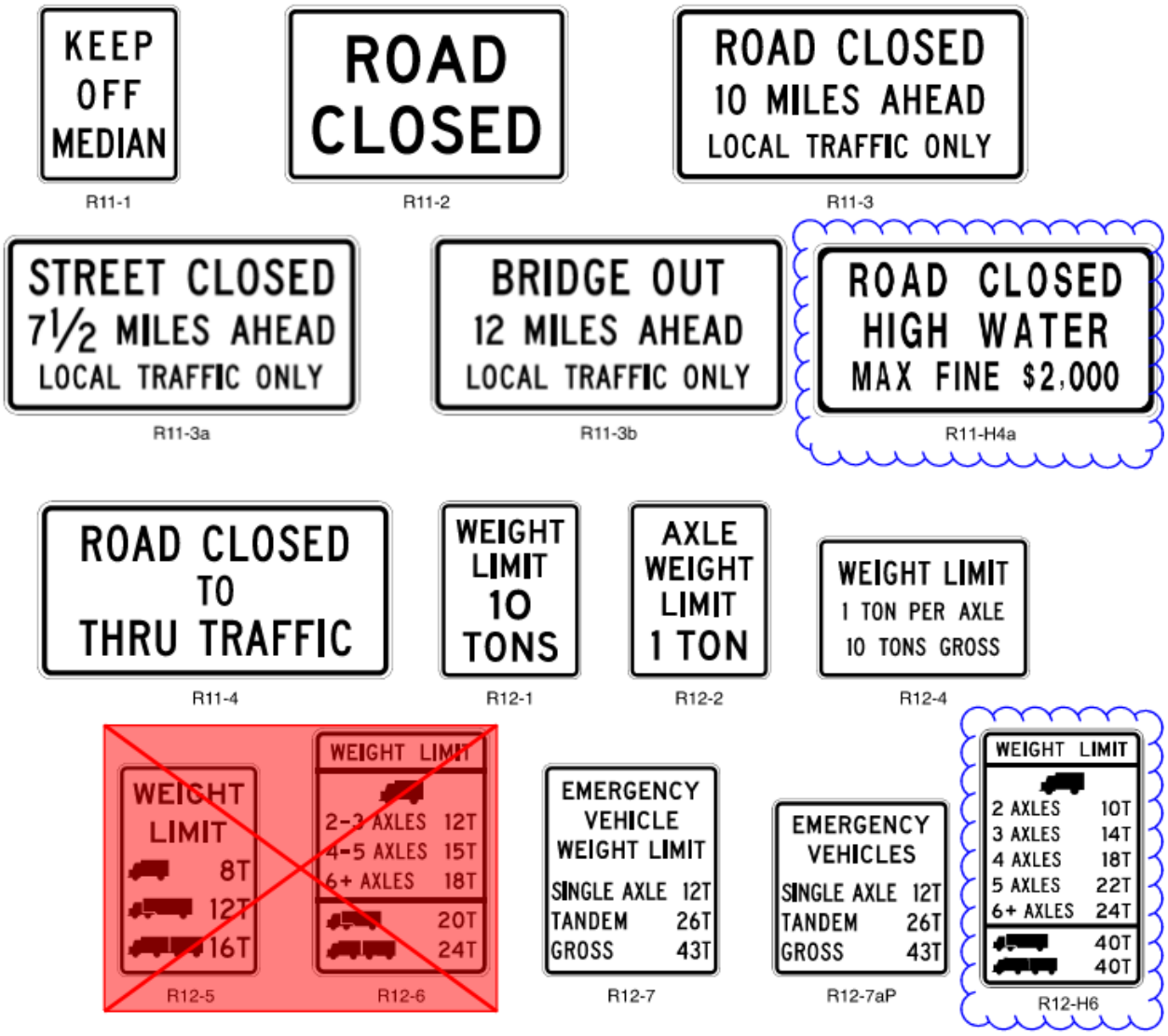


Figure 2B-30. Road Closed and Weight Limit Signs



Section 2B.63 ROAD CLOSED Sign (R11-2) and LOCAL TRAFFIC ONLY Signs (R11-3 Series, R11-4)

Guidance:

01 The ROAD CLOSED (R11-2) sign should be installed where roads have been closed to all traffic (except authorized vehicles).

02 ROAD CLOSED—LOCAL TRAFFIC ONLY (R11-3) or ROAD CLOSED TO THRU TRAFFIC (R11-4) signs should be used where through traffic is not permitted, or for a closure some distance beyond the sign, but where the highway is open for local traffic up to the point of closure.

02a When a determination has been made to close the road in response to high water conditions, the ROAD CLOSED / HIGH WATER / MAX FINE $2000 sign (R11-H4a) should be used and installed at or near the center of the roadway on or above a Type III barricade that closes the roadway. See Figure 2B-30. [ORC 4511.714]

Standard:

03 The Road Closed (R11-2, R11-3 series, and R11-4) signs (see Figure 2B-30) shall be designed as horizontal rectangles. These signs shall be preceded by the applicable Advance Road Closed warning sign with the secondary legend AHEAD and, if applicable, an Advance Detour warning sign (see Section 6H.04).

Option:

04 An intersecting street name or a well-known destination may be substituted for the XX MILES AHEAD legend in urban areas.

05 The word message BRIDGE OUT may be substituted for the ROAD CLOSED legend where applicable.

06 Where conditions allow for bicycle travel on the road beyond the point of closure to motor vehicles, an EXCEPT BICYCLES (R3-7bP) plaque (see Figure 2B-4) may be used with the ROAD CLOSED sign.

Section 2B.64 Weight Limit Signs (R12-1 through R12-7)

Standard:

01 Weight limit signs (see Figure 2B-30) shall be used to indicate a section of highway or structure that has a vehicle weight restriction.

Guidance:

02 The units shown on any weight limit sign should be consistent within a State or region with respect to pounds or tons.

Option:

03 Where the restriction applies to axle weight rather than gross load, the legend AXLE WEIGHT LIMIT XX TONS or AXLE WEIGHT LIMIT XX LBS (R12-2) may be used.

04 In areas where multiple regulations are applicable, such as limiting both axle weight and gross vehicle weight, a WEIGHT LIMIT XX TONS PER AXLE, XX TONS GROSS (R12-4) sign combining the necessary messages on a single sign may be used.

~~05 Posting of specific load limits may be accomplished by use of the Weight Limit (R12-5) symbol sign. A sign containing the legend WEIGHT LIMIT on the top two lines, and showing up to three different truck symbols and their respective weight limits for which restrictions apply may be used, with the weight limits displayed to the right of each symbol as XX T. A bottom line of legend stating GROSS WT may be included if needed for enforcement purposes.~~

Support:

06 A specialized hauling vehicle is a single unit truck with multiple closely-spaced axles. Examples include dump trucks, construction vehicles, solid waste trucks and other hauling trucks. Specialized hauling vehicles typically have 4 to 7 axles.

~~Option:~~

~~07 The Weight Limit (R12-6) sign may be used to indicate vehicle weight restrictions for specialized hauling vehicles.~~

Standard:

07a The Weight Limit (R12-H6) sign shall be used to indicate vehicle weight restrictions on a structure.

08 The symbols shown on the ~~R12-5 and~~ R12-H6 Weight Limit sign shall apply to all trucks of that configuration (single-unit, single-trailer or multi-trailer) regardless of the shape of the vehicle. Symbolic representations of other vehicle shapes or modifications of standard symbols shall not be used.

Option:

09 The facility type (such as "BRIDGE") may be added to the legend of the sign to clarify the specific applicability of the weight limit.

Standard:

~~**10 If the R12-5 sign depicts only one single-unit vehicle symbol, the weight limit associated with that single-unit vehicle symbol shall apply to all single-unit vehicles, regardless of number of axles.**~~

11 The weight limit associated with the single-trailer vehicle symbol shall apply to all single-trailer vehicles, regardless of number of axles or vehicle shape.

12 The weight limit associated with the multi-trailer vehicle symbol shall apply to all multi-trailer vehicles with two or more trailers, regardless of number of axles or vehicle shape.

13 A weight limit sign (see Figure 2B-30) shall be located at the applicable section of highway or structure.

14 An additional weight limit sign, with an advisory distance or directional legend, shall be located in advance of the applicable section of highway or structure so that prohibited vehicles can detour or turn around prior to the limit zone.

Support:

15 An emergency vehicle is designed to be used under emergency conditions to transport personnel and equipment to support the suppression of fires and mitigation of other hazardous situations. Emergency vehicles are typically operated by fire departments and are primarily equipped for firefighting, but are also used to respond to and mitigate other hazardous situations in an emergency. They can create higher load effects compared to non-emergency vehicles of similar weight.

Option:

16 The Emergency Vehicle Weight Limit (R12-7) sign carrying the legend EMERGENCY VEHICLE WEIGHT LIMIT SINGLE AXLE XX TONS, TANDEM XX TONS, and GROSS XX TONS may be used to indicate vehicle weight restrictions for emergency vehicles.

Standard:

17 When the emergency-vehicle weight limit is displayed in the same assembly as the primary weight limit sign, the Emergency Vehicle Weight Limit (R12-7aP) plaque shall be mounted below.

Section 2B.65 Weigh Station Signs (R13 Series ~~-1~~)

Guidance:

01 The COMMERCIAL VEHICLES ANY COMBINATION OVER 5 TONS GVW-GVWR ENTER SCALES (R13-H1) and HAZ-MAT PLACARDED VEHICLES ENTER SCALES (R13-H2) signs ~~An R13-1 sign with the legend TRUCKS OVER XX TONS MUST ENTER WEIGH STATION NEXT RIGHT~~ (see Figure 2B-31) should be used to direct appropriate traffic into an inspection station. [ORC 4511.121]

02 The R13-H1 and R13-H2 signs should be supplemented by the D8 series of guide signs (see Section 2D.51).

Figure 2B-31. Truck Signs

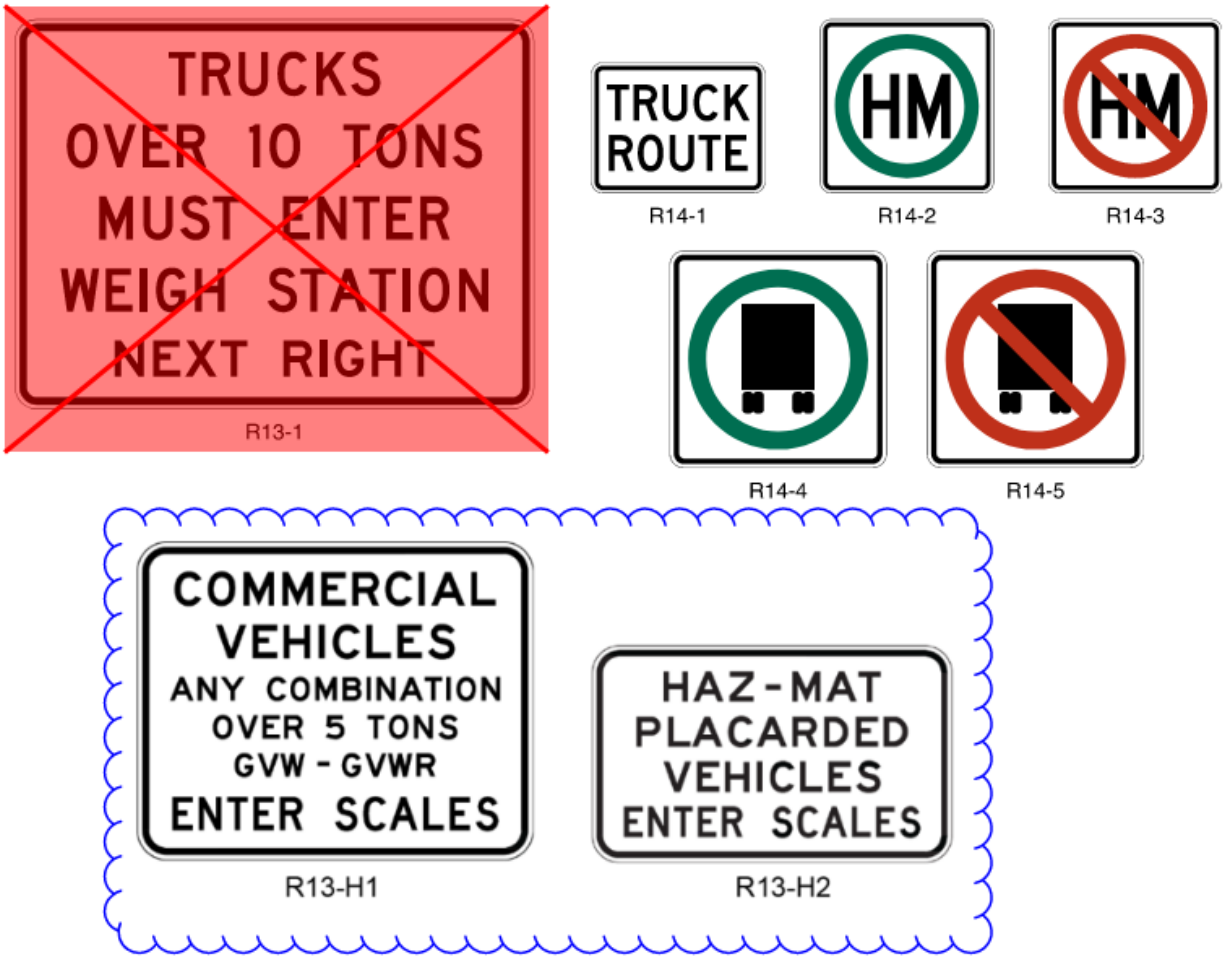
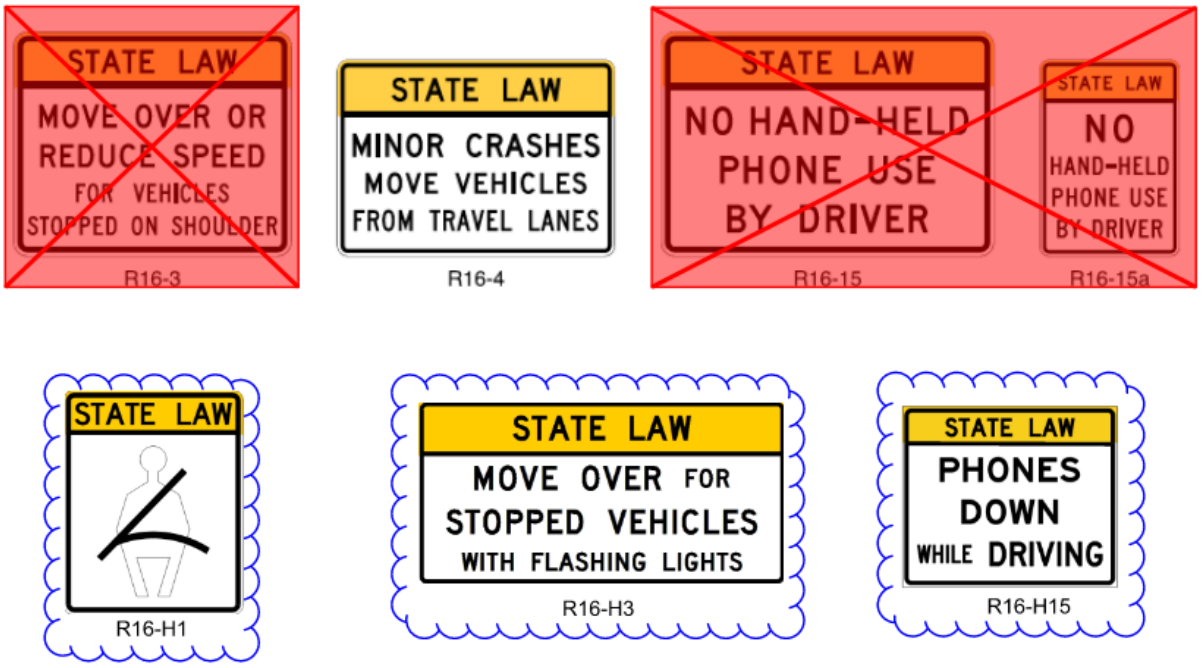


Figure 2B-33. Other Regulatory Signs



Section 2B.71 Move Over or Reduce Speed Sign (R16-H3)

Option:

01 A ~~STATE LAW MOVE OVER OR REDUCE SPEED FOR VEHICLES STOPPED ON SHOULDER~~ MOVE OVER FOR STOPPED VEHICLES WITH FLASHING LIGHTS (R16-H3) sign (see Figure 2B-33) may be installed in accordance with the provisions of Section 2A.01 to require motorists to change lanes ~~and/~~or reduce speed when passing stopped ~~emergency~~ vehicles with flashing lights~~on the shoulder~~. [ORC 4511.213]

02 If the specific requirements of a State law vary, the word legend of the R16-3 sign may be modified to reflect the appropriate law.

Support:

03 Based on requirements of ORC 4511.213, the word legend of the R16-3 is changed to MOVE OVER FOR STOPPED VEHICLES WITH FLASHING LIGHTS and has been assigned signcode R16-H3. See Figure 2B-33. [ORC 4511.213]

Section 2B.72 No Hand-Held Phone Use by Driver Signs (R16-H15~~ and R16-15a~~)

Option:

01 A STATE LAW ~~NO HAND-HELD PHONE USE BY DRIVER (~~R16-H15~~ or R16-15a)~~ PHONES DOWN WHILE DRIVING sign (see Figure 2B-33) may be installed in accordance with the provisions of Section 2A.01 to notify drivers that they are prohibited from using hand-held telephones while driving. [4511.204]

02 If the specific requirements of a State law vary, the word legend of the R16-15 series signs may be modified to reflect the appropriate law.

Support:

03 Based on requirements of ORC 4511.204, the word legend of the R16-15 is changed to PHONES DOWN WHILE DRIVING and has been assigned signcode R16-H15. See Figure 2B-33. [4511.204]

Section 2B.74 Seat Belt ~~Symbol~~Sign (R16-H1)

Guidance:

01 The seat belt symbol should not be used alone. If used, the seat belt symbol should be incorporated into regulatory sign messages for mandatory seat belt use.

Support:

02 The seat belt symbol is illustrated in the "Standard Highway Signs" publication (see Section 1A.05) and has been incorporated into the Seat Belt sign shown in Figure 2B-33.

Option:

02a The Seat Belt (R16-H1) sign may be used to remind road users of the provisions of ORC Section 4513.263 regarding the use of "occupant restraining devices." [ORC 4513.263]

CHAPTER 2C – WARNING SIGNS AND OBJECT MARKERS

Section 2C.32 NO CENTER LINE and NO EDGE LINE Signs (W8-12 and W8-H12a)

Option:

01 The NO CENTER LINE (W8-12) sign (see Figure 2C-7) and NO EDGE LINE (W8-H12a) sign (See ODOT SDMM) may be used to warn of a roadway without center line or edge line pavement markings.

Section 2C.40 Reduced Speed Limit Ahead and Speed Zone Signs (W3-5, W3-5a, and W3-5b~~, and W3-5c~~)

Guidance:

01 A Reduced Speed Limit Ahead (W3-5 or W3-5a) ~~or Truck Speed Zone Ahead (W3-5c)~~ sign (see Figure 2C-9) should be used to inform road users of a reduced speed zone where the speed limit is being reduced by more than 10 mph, or where engineering judgment indicates the need for advance notice to comply with the posted speed limit ahead.

02 A VARIABLE SPEED ZONE AHEAD (W3-5b) sign (see Figure 2C-9) should be used to inform road users of a zone where the speed limit is varied by time of day or as conditions change.

Standard:

03 If used, Reduced Speed Limit or~~,~~ Variable Speed Zone~~, or Truck Speed Zone Ahead~~ signs shall be followed by a Speed Limit (R2-1) sign (see Figure 2B-3)~~, with the Trucks (R2-2P) plaque (see Figure 2B-3) if applicable,~~ installed at the beginning of the zone where the speed limit applies.

04 The speed limit displayed on the W3-5 and~~,~~ W3-5a~~, and W3-5c~~ signs shall be identical to the speed limit displayed on the subsequent Speed Limit sign.

Support:

05 Ohio Law does not support separate Truck Speed Limits or Truck Speed Zones.

Figure 2C-9. Reduced Speed Limit Ahead and Speed Zone Signs

Section 2C.55 Non-Vehicular Warning Signs (W11-2, W11-3, W11-4, W11-6, W11-7, W11-9, and W11-16 through W11-22)

Option:

01 Non-Vehicular Warning (W11-2, W11-3, W11-4, W11-6, W11-7, W11-9, and W11-16 through W11-22) signs (see Figure 2C-15) may be used to alert road users in advance of locations where unexpected entries into the roadway might occur or where shared use of the roadway by pedestrians, animals, or equestrians might occur.

Support:

02 These conflicts might be relatively confined, or might occur randomly over a segment of roadway.

Guidance:

03 If used in advance of a pedestrian, snowmobile, or equestrian crossing, the W11-2, W11-6, W11-7, and W11-9 signs should be supplemented with plaques (see Figure 2C-16 and Section 2C.61) with the legend AHEAD or XX FEET to inform road users that they are approaching a point where crossing activity might occur.

Standard:

04 If a post-mounted W11-2, W11-6, W11-7, or W11-9 sign is placed at the location of the crossing point where pedestrians, snowmobilers, or equestrians might be crossing the roadway, a diagonal downward-pointing arrow (W16-7P) plaque (see Figure 2C-16 and Section 2C.63) shall be mounted below the sign. If the W11-2, W11-6, W11-7, or W11-9 sign is mounted overhead, the W16-7P plaque shall not be used.

05 A Non-Vehicular Warning sign assembly shall not be installed on an approach controlled by a STOP or a YIELD sign, except as provided in Paragraphs 6 and 7 of this Section.

Option:

06 The Non-Vehicular Warning sign assembly may be installed on an approach to a circular intersection controlled by a YIELD sign where the crosswalk is at least 20 feet in advance of the yield point at the entrance to a circulatory roadway.

07 At a signalized or stop-controlled intersection the Non-Vehicular Warning sign assembly may be installed on an approach to a channelized right-turn lane controlled by a YIELD sign where the crosswalk is at least 20 feet in advance of the yield point.

08 A Pedestrian Crossing (W11-2) sign may be placed overhead or may be post-mounted with a diagonal downward-pointing arrow (W16-7P) plaque at the crosswalk location where Yield Here To ~~(Stop Here For)~~ Pedestrians signs (see Section 2B.19) have been installed in advance of the crosswalk.

Standard:

09 If a W11-2 sign has been post-mounted at the crosswalk location where a Yield Here To ~~(Stop Here For)~~ Pedestrians sign is used on the approach, the Yield Here To ~~(Stop Here For)~~ Pedestrians sign shall not be placed on the same post as the W11-2 sign.

Option:

10 An advance Pedestrian Crossing (W11-2) sign with an AHEAD or a distance supplemental plaque may be used in conjunction with a Yield Here To ~~(Stop Here For)~~ Pedestrians sign on the approach to the same crosswalk.

11 The crossing location identified by a W11-2, W11-6, W11-7, or W11-9 sign may be defined with crosswalk markings (see Chapter 3C).

12 The W11-2 and W11-9 signs and their related supplemental plaques may have a fluorescent yellow-green background with a black legend and border.

Guidance:

13 When a fluorescent yellow-green background is used, a systematic approach featuring one background color within a zone or area should be used. The mixing of standard yellow and fluorescent yellow-green backgrounds within a selected site area should be avoided.

Option:

14 A Warning Beacon (see Section 4S.03) may be used with any Non-Vehicular Warning sign to indicate specific periods when the condition or activity is present or is likely to be present, or to provide enhanced sign conspicuity.

15 A supplemental WHEN FLASHING (W16-13P) plaque (see Figure 2C-16) may be used with any Non-Vehicular Warning sign that is supplemented with a Warning Beacon to indicate specific periods when the condition or activity is present or is likely to be present.

CHAPTER 2D – GUIDE SIGNS – CONVENTIONAL ROADS

Section 2D.11 Design of Route Signs

Standard:

01 The design of standard route signs shall conform to the designs provided in the "Standard Highway Signs" publication (see Section 1A.05). The design of other route signs shall be established by the authority having jurisdiction and shall be in general conformance with the designs provided in the "Standard Highway Signs" publication.

02 Interstate Route (M1-1 and M1-1a) signs (see Figure 2D-4) shall be used on all Interstate routes and in connection with Route Sign assemblies on intersecting highways.

03 Except as otherwise provided in this Manual, a 24 x 24-inch minimum sign size shall be used for Interstate route numbers with one or two digits, and a 30 x 24-inch minimum sign size shall be used for Interstate route numbers having three digits.

Option:

04 When the Interstate Route sign is used in a route sign assembly (see Section 2D.29), the M1-1a sign, containing the State name in white upper-case letters on a blue background as detailed in the "Standard Highway Signs" publication (see Section 1A.05), may be used in place of the M1-1 sign.

Standard:

05 Use of the M1-1a sign shall be limited to route sign assemblies.

06 Off-Interstate Business Route (M1-2 and M1-3) signs (see Figure 2D-4) shall consist of a cutout shield displaying the number of the connecting Interstate route and the words BUSINESS and either LOOP (when the route rejoins the same Interstate route) or SPUR (when the route leaves the corresponding Interstate route and does not rejoin) in upper-case letters. The legend and border shall be white on a green background, and the shield shall be the same shape and

dimensions as the Interstate Route sign. In no instance shall the word INTERSTATE appear on the Off-Interstate Business Route sign.

Option:

07 The Off-Interstate Business Route sign may be used on a major highway that is not a part of the Interstate system, but one that serves the business area of a city from an interchange on the system.

Standard:

08 U.S. Route signs (see Figure 2D-4) shall consist of black numerals on a white shield surrounded by a rectangular black background without a border. This sign shall be used on all U.S. routes and in connection with Route Sign assemblies on intersecting highways.

09 A 24 x 24-inch minimum sign size shall be used for U.S. route numbers with one or two digits, and a 30 x 24-inch minimum sign size shall be used for U.S. route numbers having three digits.

10 State Route signs shall be designed by the individual State highway agencies.

11 The legend on State Route signs shall conform to the Standard Alphabets contained in the "Standard Highway Signs" publication (see Section 1A.05).

Guidance:

12 State Route signs (see Figure 2D-4) should be rectangular and should be approximately the same size as the U.S. Route sign. State Route signs should also be similar to the U.S. Route sign by containing approximately the same size black numerals on a white area surrounded by a rectangular black background without a border, and should be devoid of complex graphics. The shape of the white area should be circular in the absence of any determination to the contrary by the individual State concerned.

13 Where U.S. or State Route signs are used as components of guide signs, only the distinctive shape of the shield itself and the route numerals within should be used. The rectangular background upon which the distinctive shape of the shield is mounted, such as the black area around the outside of the shields on the M1-4 and standard M1-5 signs, should not be included on the guide sign. Where U.S. or State Route signs are used as components of other signs of non-contrasting background colors, the rectangular background should be used so that recognition of the distinctive shape of the shield can be maintained.

Standard:

14 If county road authorities elect to establish and identify a special system of important county roads, a statewide policy for such signing shall be established that includes a uniform numbering system to uniquely identify each route. The County Route (M1-6) sign (see Figure 2D-4) shall consist of a pentagon shape with a yellow county name and route number and border on a blue background. County Route signs shall be a minimum size of 24 x 24 inches.

15 If a jurisdiction uses letters instead of numbers to identify routes, all references to numbered routes in this Chapter shall be interpreted to also include lettered routes.

Option:

15a The Township Route (M1-H6b) sign may be used on Township Roads. These signs have a minimum size of 24 x 24 inches for two and three digit routes (see Figure 2D-4).

Guidance:

16 If used with other route signs in common assemblies, the County Route sign and Township Route sign should be of a size compatible with that of the other route signs.

Standard:

17 The design of the National Forest Route (M1-7) sign (see Figure 2D-4) shall be as detailed in the "Standard Highway Signs" publication (see Section 1A.05). Route signs for other park and forest roads shall be designed with an appropriate level of distinctiveness and adequate legibility, but in general compliance with the design principles for route signs and of a size compatible with other route signs used in common assemblies.

Figure 2D-4. Route Signs

Interstate Route Sign
M1-1

Interstate Route Sign
M1-1a

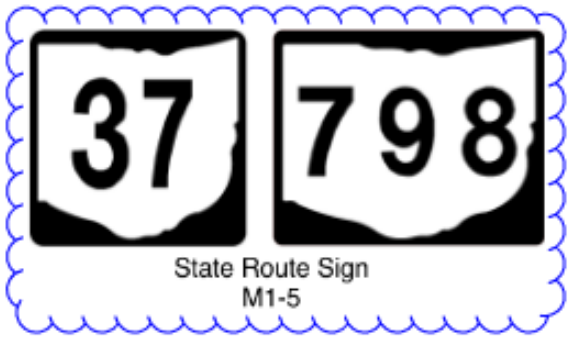
Off-Interstate Business Route Sign
M1-2 (Loop)

Off-Interstate Business Route Sign
M1-3 (Spur)

U.S. Route Sign
M1-4

State Route Sign
M1-5

Forest Route Sign
M1-7



State Route Sign
M1-5

County Route Sign
M1-6

Township Route Sign
M1-H6b

Section 2D.30 Junction Assembly

Standard:

01 A Junction assembly shall consist of a Junction auxiliary plaque (see Section 2D.13) and a route sign. The route sign shall display the number of the intersected or joined route.

02 The Junction assembly shall be installed in advance of every intersection where a numbered route is intersected or joined by another numbered route.

02a Routes where Junction assemblies shall not be omitted include where a U.S. or State Route is intersected or joined by another U.S. or State Route.

Option:

02b In addition to Section 2D.29, P07 through P09, Junction assemblies may be omitted on routes that do not carry an appreciable amount of traffic or based upon engineering judgement.

Guidance:

03 In urban areas, the Junction assembly should be installed in the block preceding the intersection. In urban areas where speeds are low, the Junction assembly should not be installed more than 300 feet in advance of the intersection.

04 In rural areas, the Junction assembly should be installed at least 400 feet in advance of the intersection. In rural areas, the minimum distance between a Junction assembly and either a Destination sign or an Advance Route Turn assembly should be 200 feet.

05 Where speeds are high, greater spacings should be used.

Option:

06 Where two or more routes are to be indicated, a single Junction auxiliary plaque may be used for the assembly and all route signs grouped in a single mounting, or a Combination Junction (M2-2) sign (see Section 2D.14) may be used.

Figure 2D-12. Examples of Guide Signs for Circular Intersections (Sheet 1 of 4)

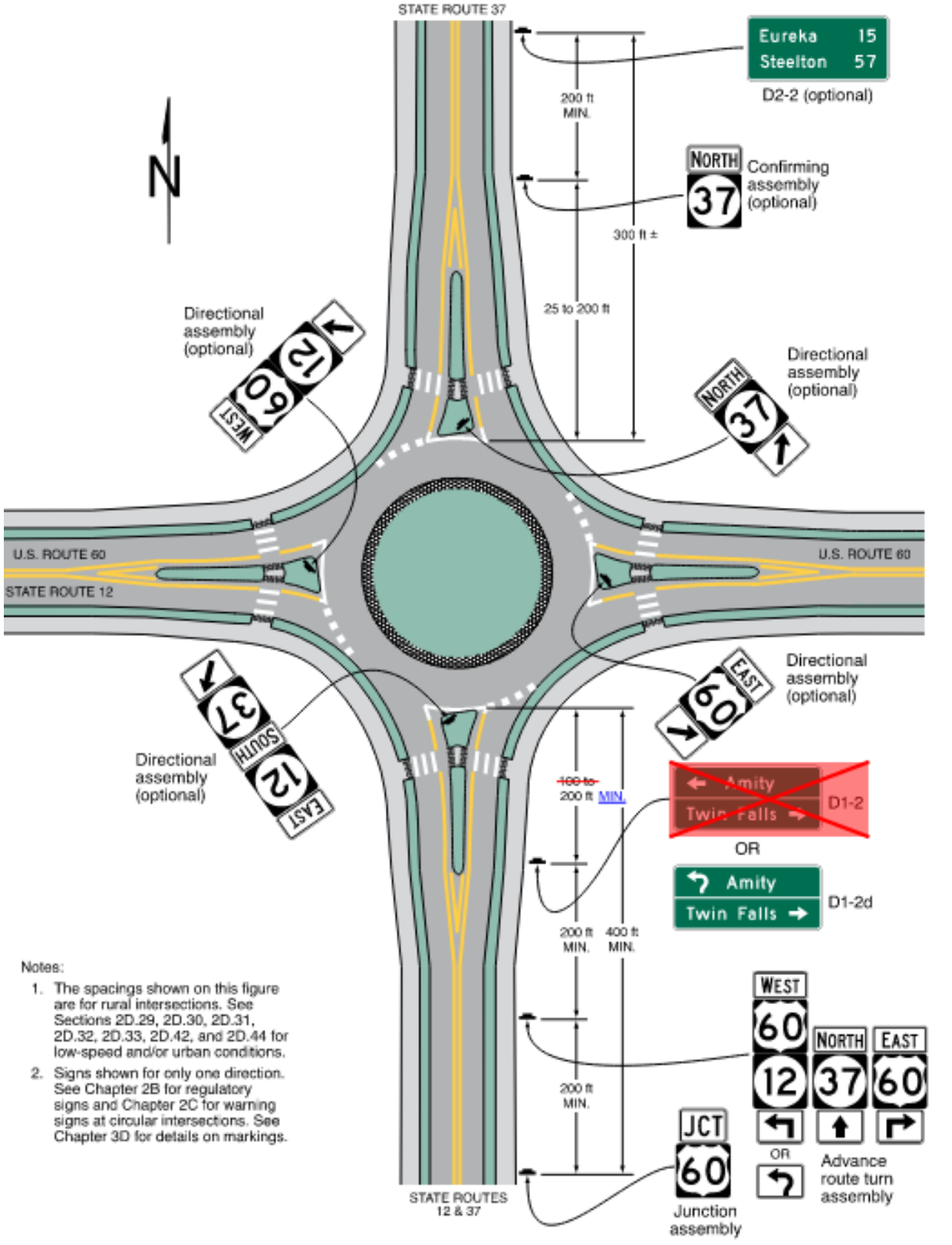
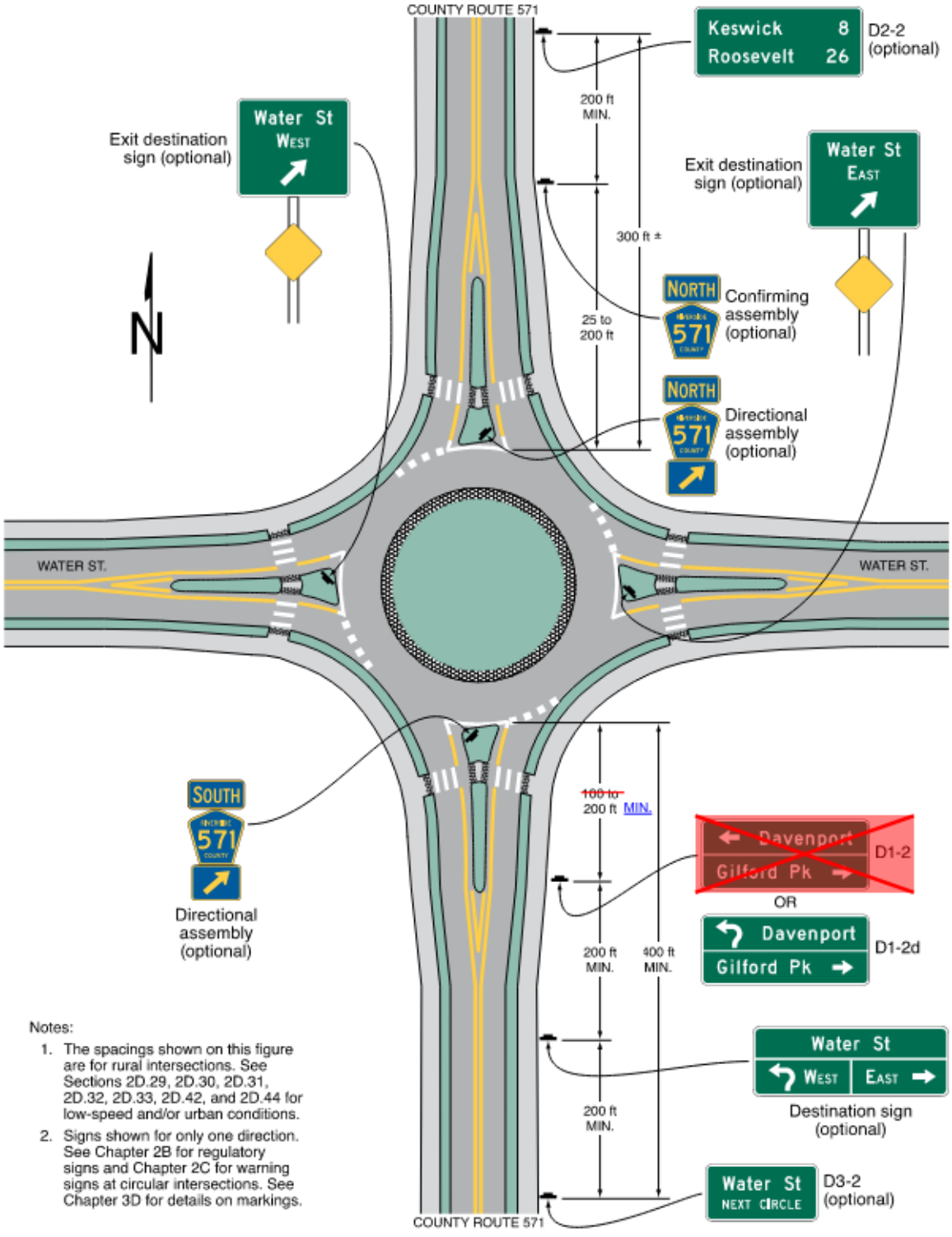


Figure 2D-12. Examples of Guide Signs for Circular Intersections (Sheet 2 of 4)



Notes:

1. The spacings shown on this figure are for rural intersections. See Sections 2D.29, 2D.30, 2D.31, 2D.32, 2D.33, 2D.42, and 2D.44 for low-speed and/or urban conditions.
2. Signs shown for only one direction. See Chapter 2B for regulatory signs and Chapter 2C for warning signs at circular intersections. See Chapter 3D for details on markings.

Figure 2D-12. Examples of Guide Signs for Circular Intersections (Sheet 3 of 4)

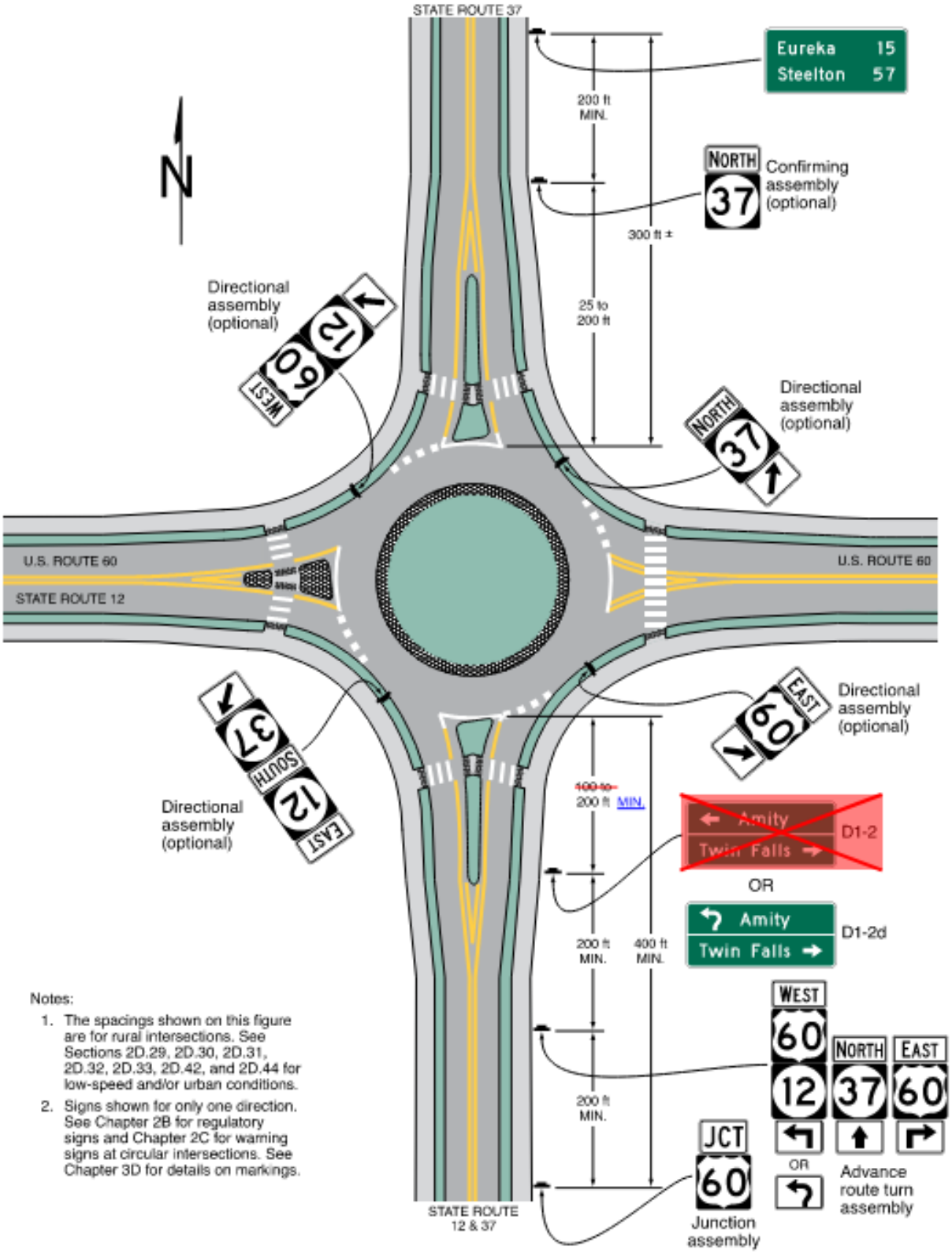
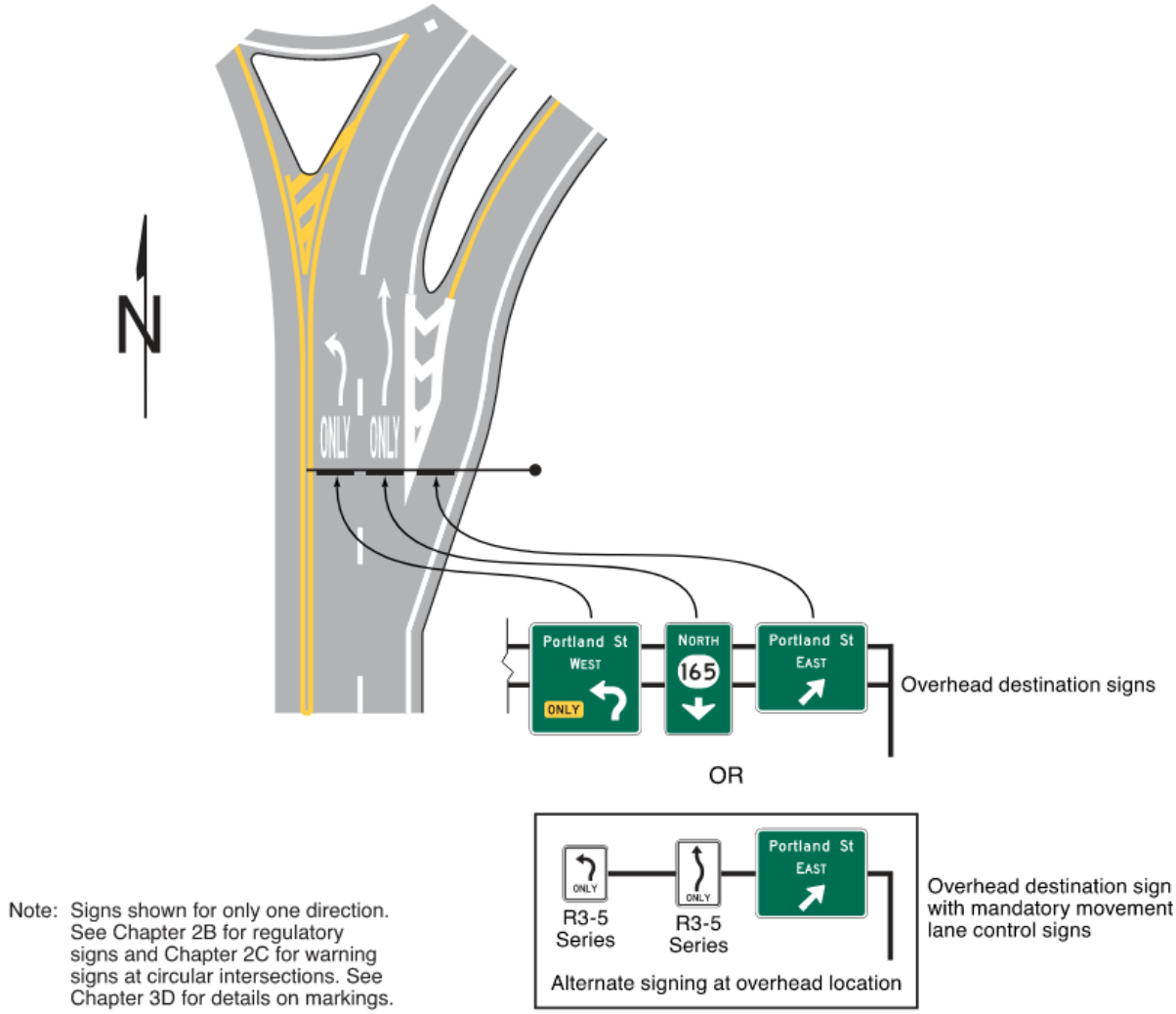


Figure 2D-12. Examples of Guide Signs for Circular Intersections (Sheet 4 of 4)



Section 2D.45.1 Expressway Street Name Sign (D3-H3 or D3-H3a)

Support:

01 Expressway Street Name (D3-H3 or D3-H3a) signs identify expressway at-grade intersections.

Guidance:

02 An Expressway Street Name sign should be installed in urban areas at all important expressway at-grade intersections regardless of other route signs that might be present, and should be installed in rural areas to identify important routes that are not otherwise signed.

Option:

03 For added guidance, an additional Expressway Street Name (D3-H3 or D3-H3a) sign may be installed in advance of the intersection. If used, this additional sign may be placed approximately 500 feet in advance of the intersection.

04 The Street Name (D3-1) sign (see Section 2D.43) may be used as an alternative to the D3-H3 or D3-H3a sign at intersections where, for example, the larger sign might adversely affect cross-corner sight distance.

Section 2D.46.1 Expressway At-Grade Intersection Advance Street Name Sign (D3-H4)

Support:

01 Expressway At-Grade Intersection Advance Street Name (D3-H4) signs identify an upcoming expressway at-grade intersection.

Guidance:

02 An Advance Street Name (D3-H4) sign should be installed in advance of all important expressway intersections not otherwise signed. The sign should be placed approximately 1/2 mile, or other suitable distance based on engineering judgment, in advance of the intersection.

Standard:

03 Advance Street Name signs, if used, shall supplement rather than be used instead of the Street Name signs at the intersection.

Section 2D.51 WEIGH STATION Signing (D8 Series)

Support:

01 Independent facilities or areas have been added along many highways where certain commercial vehicles are directed to stop to be weighed and/or inspected. These areas are sometimes permanent, such as in a roadside area, or temporary mobile facilities deployed along the roadway.

02 The general concept for signing permanent Weigh Stations is similar to signing Rest Areas (see Section 2I.05) because in both cases traffic using either area remains within the right-of-way.

Standard:

03 The standard sequence of signs for a Weigh Station on a conventional highway shall include three basic signs (see Figure 2D-23):

- **A. ~~Weigh Station Advance (D8-1)~~Weigh Station Advance (D8-1a) or Advance Weigh Station Distance (D8-1) sign,**
- **B. Weigh Station Advance Direction (D8-2) sign, and**
- **C. Weigh Station Entrance Direction (D8-3) sign.**

Guidance:

04 A Gore sign with the same basic legend as the Weigh Station Entrance Direction (D8-3) sign should also be used to emphasize the entrance to the weigh station.

Option:

05 Where State law requires trucks of a certain weight or cargo to enter the Weigh Station, a Weigh Station (R13-H1 or R13-H2) regulatory sign (see Section 2B.65) may be located following the Advance Weigh Station Ahead sign (see Figure 2D-23).

06 Where only commercial vehicle inspections are conducted in the inspection area, the WEIGH STATION legend of the D8 series signs may be replaced with the alternate legend, COMMERCIAL VEHICLE INSPECTION.

Guidance:

07 The Weigh Station Advance Direction (D8-2) Sign or the Weigh Station Advance (D8-1) sign should display, either on the sign or on a supplemental plaque or sign panel, the changeable legend OPEN or CLOSED.

Standard:

08 When the WEIGH STATION legend of the D8 series signs is replaced with the COMMERCIAL VEHICLE INSPECTION legend, as provided in Paragraph 6 of this Section, the ~~WEIGH STATION~~ legend of the R13-H1 sign shall likewise be replaced with the alternate legend.

Section 2D.58 State-Designated Scenic Byway, Historic Trail, and Auto Tour Route Signs

Support:

01 Signing for State-designated scenic byways, historic trails, and auto tour routes, is similar in concept to that for National Scenic Byways as provided in Section 2D.57.

02 Named highways are officially designated and shown on official maps and serve the purpose of providing route guidance, primarily on unnumbered highways, and property addresses. A highway designated as a trail, auto tour route, or byway is not considered to be a highway name for the purposes of highway signing or road user navigation and orientation. Section 2D.56 contains provisions for the signing of named highways.

03 Section 1D.09 provides information on the authority for placement of traffic control devices within the highway right-of-way.

03a Certain roads have been designated by the Ohio Department of Transportation (ODOT) as Ohio Byways based on their archeological, cultural, historic, natural, recreational, or scenic qualities.

Guidance:

04 Route Sign assemblies and Destination guide signs should have priority in visibility and location over signing related to historic trails, auto tour routes, and byways.

~~Option:~~

05 Identification signs for a State scenic byway ~~may~~ should be installed along conventional roads that have been designated by ODOT as an Ohio Byway. The Ohio Byway (M10-H3a) sign series and M10-H3bP plaque should be used to mark Ohio Byway routes. Each designated route has a unique image with the name of the byway or scenic byway (see Figure 2D-34). For all the available specific designs, see the Ohio Sign Design and Markings Manual (SDMM). ~~part of a State scenic byway system. A Byway Identification (M10-2) sign (see Figure 2D-34) with the name of the byway displayed may be installed in a Directional or Confirming assembly with the SCENIC BYWAY (M10-3bP) plaque (see Figure 2D-34) mounted below the M10-2 sign.~~

Option:

06 Where a National Scenic Byway is part of a State scenic byway system, the National Scenic Byways (M10-1aP) plaque (see Section 2D.57) may be installed in a Directional or Confirming assembly below the ~~Byway Identification (M10-2)~~ Ohio Byway (M10-H3a series and M10-H3bP) sign assembly ~~or State Scenic Byway (M10-3 or M10-3a) sign~~ (see Figure 2D-34) for the State scenic byway.

07 ~~A State Scenic Byway System (M10-3) sign may be installed in a Directional or Confirming assembly with the name of the byway displayed on a Byway Identification (M10-2aP) plaque below the sign (see Figure 2D-34).~~

08 ~~A State Scenic Byway (M10-3a) sign with a simple graphic and the name of the byway displayed may be installed in a Directional or Confirming assembly with the SCENIC BYWAY (M10-3bP) plaque mounted below the M10-3a sign.~~

09 Identification signs for a historic trail, such as the National Historic Trails administered by the National Park Service, may be installed along segments of conventional roads that coincide with the original route of the trail. National Historic Trail Identification (M11-1) signs (see Figure 2D-34) may be installed in a Directional or Confirming assembly with a HISTORIC ROUTE (M11-1aP), CROSSING

(M11-1bP), or AUTO TOUR ROUTE (M11-1cP) auxiliary plaque (see Figure 2D-34) mounted below the M11-1 sign. The beginning and end of a historic trail route or auto tour route may be indicated with a BEGIN (M4-14P) or END (M4-6P) auxiliary plaque (see Figure 2D-5) with a white legend and border on a brown background mounted above the historic trail identification sign. The length of the route may be identified by a NEXT XX MILES (M11-1dP) auxiliary plaque mounted below the M11-1aP or M11-1cP auxiliary plaque.

Guidance:

10 The design and size of historic trail and State scenic byway identification or system signs should comply with the general provisions and principles for route signs (see Section 2D.10). Designs should be simple, dignified, and devoid of complex graphics. The size of the signs should not exceed the size of the route signs used along a particular route.

Standard:

11 Scenic byway, historic trail, and auto tour route sign designs shall not have a similar design to or resemble a highway route sign.

~~*Guidance:*~~Option:

12 Where used, *historic trail and* ~~*State scenic byway identification*~~ Ohio Byway signs may be installed in an assembly with other route signs.

Guidance:

12a Ohio Byway signs should be installed in both directions along an established route. A sign should be installed at the beginning of the route, in advance of and at turns in the route, and a trail or Ohio Byway sign with an END (M4-6) auxiliary sign should be installed at the end of the route. Additional signs should be installed at 5 to 10-mile intervals and at other key locations along the route.~~*should be installed as Directional (see Section 2D.32) or Confirming (see Section 2D.33) assemblies at independent locations, separate from other Route Sign assemblies and Destination guide signs. Where used, Confirming assemblies for the trail or byway should be installed at less frequent intervals than Confirming assemblies for the numbered route.*~~

Option:

12b An Ohio Byway sign may be installed after a turn to confirm the routing, and on major intersecting highways advising of the junction with the designated route.

Support:

12c Paragraph 12, 12a, and 12b are revised/provided to minimize sign clutter.

13 Where all or part of the original route of a historic trail does not follow a roadway, an auto tour route is sometimes established along a conventional road in the general vicinity of the historical route of the trail. Examples include auto tour routes following other routes that parallel the original routes of the Lewis and Clark National Historic Trail, the Oregon National Historic Trail, and the Santa Fe National Historic Trail. The auto tour route is shown on touring maps along State or other highways and provides access to sites on the trail from those highways.

14 A system of signing providing direction along conventional roads for a historic trail with an auto tour route is shown in Figure 2D-35. Examples of Destination and Supplemental guide signs providing direction to historic trail sites from a freeway or expressway interchange are shown in Figure 2D-36.

Guidance:

15 Signing for historic trails should be limited to Destination signs for the sites related to the trail and to Directional and Confirming assemblies for the original portions of the trail itself. If an auto tour route has been designated along other highways to provide access to sites along the original trail as described in Paragraph 13 of this Section, then the signing should be limited to Destination signs for those sites and directional signing to access the original route of the trail. Identification signs for the auto

tour route should not be installed. Instead, direction along the auto tour route should rely on the touring map and other directional signs for the highways that the auto tour route follows.

Standard:

16 Identification signs for historic trails, auto tour routes, and scenic byways shall not be installed on freeways or expressways, except as necessary to provide continuity between discontinuous segments of conventional roadways that are designated as a trail, auto tour route, or byway, for which the freeway or expressway provides the only connection between the segments. If installed on freeways or expressways, the identification signs shall be installed as independent trailblazer assemblies (see Sections 2D.34 and 2E.55) and shall not be installed with other route signs or Confirming assemblies or on guide signs. If installed on freeways or expressways, the trailblazer assemblies for the trail, auto tour route, or byway shall be installed at less frequent intervals than Confirming assemblies for the highway route.

17 Identification signs for historic trails, auto tour routes, and scenic byways shall not be installed as sign panels on a guide sign or as part of a guide sign assembly.

Figure 2D-34. Byway Identification, State Scenic Byway, and National Historic Trail Signs and Plaques, and Examples of Use (Sheet 1 of 2)

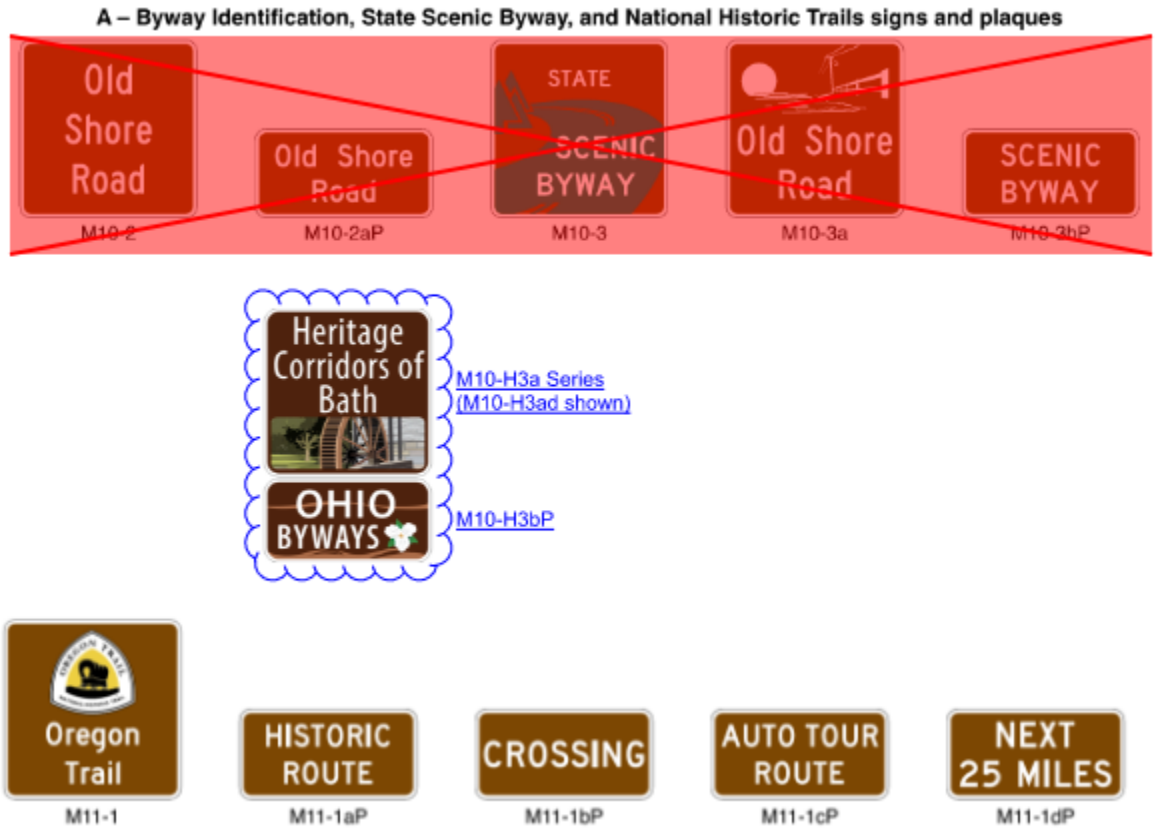
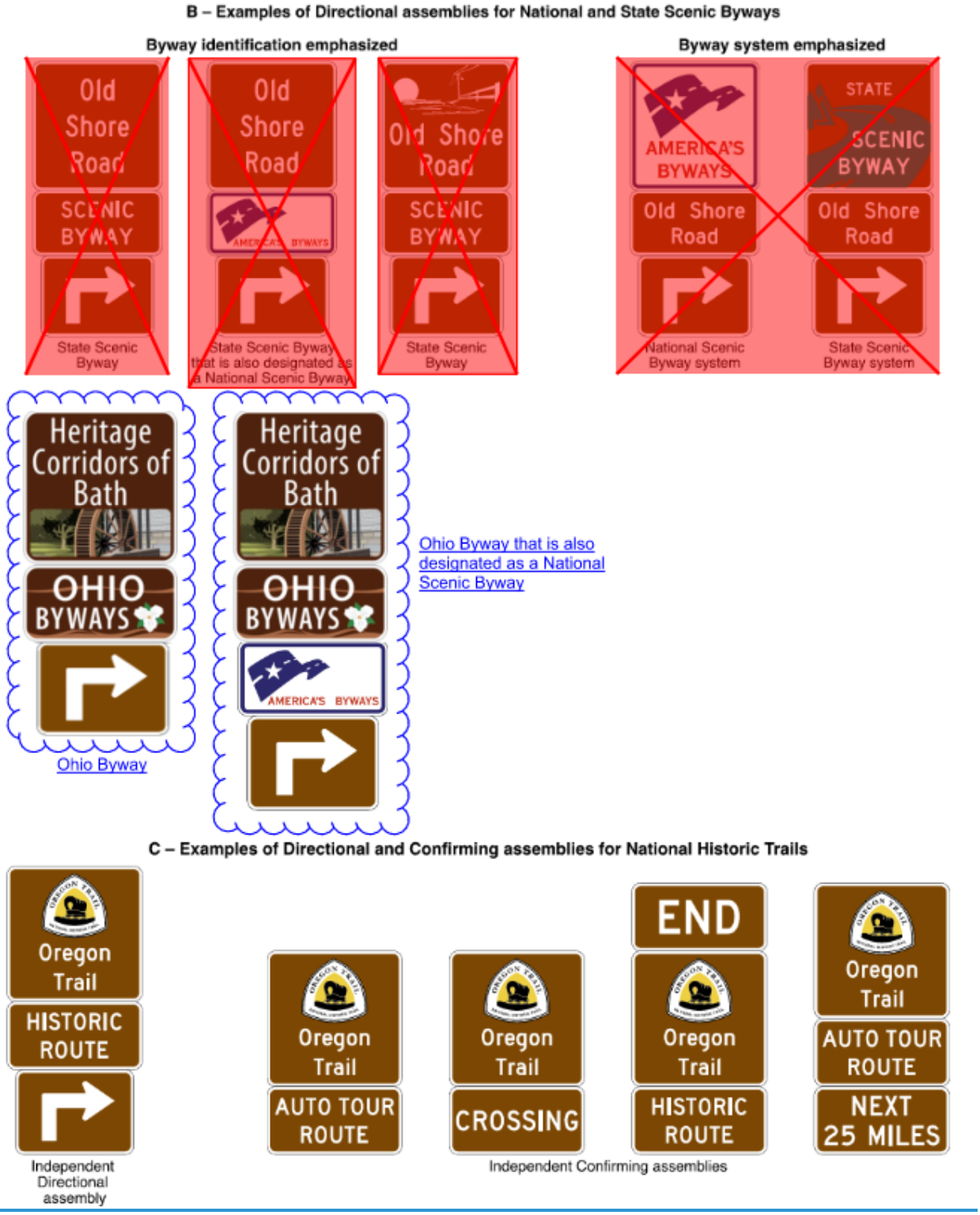


Figure 2D-34. Byway Identification, State Scenic Byway, and National Historic Trail Signs and Plaques, and Examples of Use (Sheet 2 of 2)



CHAPTER 2E - GUIDE SIGNS—FREEWAYS AND EXPRESSWAYS

Section 2E.13 Interline and Edge Spacing

Guidance:

01 Interline spacing of ~~upper-case letters~~ words should be approximately ¾ ~~of~~ the ~~average of~~ upper-case letter height~~s~~ ~~in~~of the larger of the adjacent lines ~~of letters~~.

02 The spacings to the top and bottom borders should be approximately the upper-case letter height of the adjacent lines. ~~equal to the average of the letter height of the adjacent line of letters.~~ The lateral spacing to the vertical borders should be essentially the same as the height of the largest letter.

Support:

03 SDMM Appendix C contains additional information on interline and edge spacing.

Section 2E.51 Supplemental Guide Signs (E3 Series)

Support:

01 Supplemental guide signs (see Figure 2E-53) can be used to provide information regarding destinations accessible from an interchange, other than places displayed on the standard interchange signing. However, such Supplemental guide signing can reduce the effectiveness of other more important guide signing because of the possibility of overloading the road user's capacity to receive visual messages and make appropriate decisions. "The AASHTO Guidelines for the Selection of Supplemental Guide Signs for Traffic Generators Adjacent to Freeways" is incorporated by reference in this Section.

Guidance:

02 Use of Supplemental guide signs should be limited to situations where there is a demonstrated need to sign for more destinations from an interchange than those that are displayed on the Interchange Advance guide and Exit Direction signs.

03 To control proliferation of these signs and to aid in uniformity, each highway agency should develop an appropriate policy for installing supplemental signs. For ODOT's policy, see Part 2 of ODOT's "Traffic Engineering Manual". A Supplemental guide sign should not be installed unless a destination meets the criteria established by the State or agency policy. States and other agencies should adopt an appropriate policy for installing Supplemental guide signs using the "AASHTO Guidelines for the Selection of Supplemental Guide Signs for Traffic Generators Adjacent to Freeways." In developing policies for such signing, such items as population, amount of traffic generated, distance from the route, and the significance of the destination, should be taken into account.

04 No more than one Supplemental guide sign should be used on each interchange approach.

05 A Supplemental guide sign should display no more than two destinations and no more than three lines of destination names. Destination names should be followed by the interchange number (and suffix), or if interchanges are not numbered, by the legend NEXT RIGHT or SECOND RIGHT or both, as appropriate. The Supplemental guide sign should be installed as an independent guide sign assembly.

06 Where two or more Interchange Advance guide signs are used, the Supplemental guide sign should be installed approximately midway between two of the Interchange Advance guide signs. If only one Interchange Advance guide sign is used, the Supplemental guide sign should follow it by at least 800 feet. If the interchanges are numbered, the interchange number should be used for the action message.

07 A Supplemental guide sign should not be installed in the same location with or where it will detract from guide signs for a different interchange.

Standard:

08 No more than two supplemental traffic generator destinations shall be signed from a single interchange approach and four from a single interchange along the main roadway (see Paragraphs

4 and 5 of this Section regarding the number of Supplemental guide signs at an interchange and the number of destinations displayed on a Supplemental guide sign).

09 Supplemental guide signs shall not be placed at the same location as Interchange Advance guide, Exit Direction, or other signs related to an exit or interchange.

10 Guide signs for park-and-ride facilities (E3-H1a, E3-H1b) shall be considered as Supplemental guide signs (see Figure 2E-54).

11 Guide signs for recreational or cultural interest destinations (see Chapter 2M) shall be considered as Supplemental guide signs, except where the interchange provides direct access to such a destination and the destination is instead displayed on the Interchange Advance guide and Exit Direction signs.

Option:

12 The pictograph of a transit provider (see definition in Section 1C.02) may be displayed on the Park – Ride Supplemental guide sign or on a Supplemental guide sign for a transit facility.

Guidance:

13 The use of a transit pictograph and/or the carpool symbol on the PARK – RIDE Supplemental guide sign should comply with the provisions of Paragraph 5 of Section 2D.48.

Standard:

14 When a transit pictograph is displayed on the PARK – RIDE Supplemental guide sign, it shall be located on the same line as the carpool symbol, if used, above the word legend.

15 The maximum dimension (height or width) of a pictograph on a sign shall not exceed two times the upper-case letter height of the destination or PARK – RIDE legend.

Figure 2E-54. Examples of Supplemental Guide Signs for a Park-and-Ride Facility

CHAPTER 2H - GENERAL INFORMATION SIGNS

Section 2H.05 Jurisdictional Boundary Signs (I2-1)

Option:

01 The Jurisdictional Boundary (I2-1) sign may be used to mark the location of the jurisdictional boundary of a State, county, or municipality or the limits of an unincorporated municipal-level community, Tribal Nation, or governmental district where legal jurisdiction, road maintenance responsibility, or emergency response obligation changes.

Guidance:

02 If used, the Jurisdictional Boundary sign should be located at or as near as practicable to the jurisdictional boundary without interfering with higher-priority traffic control devices. Jurisdictional Boundary signs should be placed inside the jurisdiction unless interfering with other higher-priority traffic control devices. Notices of statutes or local ordinances should be located separately using regulatory signs (see Chapter 2B).

03 If used for an unincorporated community, the community should be one that is readily identifiable on official maps and be consistent with postal mailing addresses.

Option:

03a Where a route leaves a municipality and subsequently re-enters the same municipality within a relatively short distance, the ENTER CORP (I-H2b) sign may be used at the re-entry location.

03b The LEAVE CORP (I-H2c) sign may be used at a location where a route leaves a municipality.

03c The 12 x 12 inch ENTER CORP (I-H2b) and LEAVE CORP (I-H2c) signs may be used instead of the standard size where space is limited.

03d The Township Limit (I-H2e) sign may be used to identify the boundaries of a township located outside municipal corporation limits.

Standard:

04 In accordance with Section 2H.01, the Jurisdictional Boundary sign shall be rectangular in shape and shall have a white legend on a green background. The sign shall display only the name of the State, county, municipality, Tribal Nation, or other identifiable community, and an appropriate legend such as ENTERING, STATE LINE, County, or the municipal classification.

Guidance:

04a On a conventional road, the Internal County Line (I-H2f) sign should be installed where a route leaves one Ohio county and enters another Ohio county. On freeways and expressways, the County Line (I-H2h) sign should be installed where a route enters an Ohio county from another Ohio county or another state.

Option:

04b On a conventional road, the External County Line (I-H2g) sign may be installed where a route enters an Ohio county from another state.

Guidance:

04c When used, the External County Line sign should be erected beneath a State Line (I-H2i) sign.

Standard:

05 Names of elected officials or promotional messages, such as notable accomplishments or claims, shall not be displayed on a Jurisdictional Boundary sign or added as a supplemental sign or plaque.

Option:

06 A pictograph representing the jurisdiction may be displayed on the Jurisdictional Boundary sign.

Standard:

07 If a pictograph is displayed on the Jurisdictional Boundary sign, it shall be the official seal of the jurisdiction and shall comply with the provisions of Section 2A.04. The pictograph shall be placed to the left of the legend. The height of the pictograph shall not exceed 2 times the height of the initial upper-case letter of the principal legend.

Guidance:

08 Signs should not be used to identify the boundaries of special-purpose governmental districts, such as school districts, sanitary districts, or improvement districts, as such signs are generally promotional in nature and do not provide navigational or orientation assistance in conjunction with official maps that are available to the general public.

Support:

09 Section 2H.07 contains information on State Welcome signs.

CHAPTER 2I - GENERAL SERVICE SIGNS

Section 2I.02 General Service Signs for Conventional Roads

Support:

01 On conventional roads, commercial services such as gas, food, and lodging generally are within sight and are available to the road user at reasonably frequent intervals along the route. Consequently, on this class of road there usually is no need for special signs calling attention to these services. Moreover, General Service signing is usually not needed in urban areas except for hospitals, law enforcement assistance, tourist information centers, and camping.

Option:

02 General Service signs (see Figure 2I-1) may be used on conventional roads where such services are infrequent and are found only on an intersecting highway or crossroad.

Standard:

03 All General Service signs and supplemental sign panels shall have a white legend and border on a blue background.

Guidance:

04 General Service signs should be installed at a suitable distance in advance of the turn-off point or intersecting highway.

05 In addition to the information in this Manual, for the sake of uniformity, local jurisdictions electing to use General Service signing should follow the related standards and guidelines established in Part 2 of the ODOT "Traffic Engineering Manual". ~~States that elect to provide General Service signing should establish a statewide policy or warrant for its use, and criteria for the availability of services. Local jurisdictions electing to use such signing should follow State policy for the sake of uniformity.~~

Option:

06 Individual States may sign for whatever alternative fuels are available at appropriate locations.

Standard:

07 To be eligible for an EV Charging General Service sign on a conventional road, the EV chargers provided shall meet the criteria for Direct Current Fast Chargers provided in 23 CFR 680.106 and be in continuous operation at least 16 hours per day, 7 days per week.

08 General Service signs, if used at intersections, shall be accompanied by a directional message.

Option:

09 The Advance Turn (M5 series) or Directional Arrow (M6 series) auxiliary plaques (see Figure 2I-1) with white arrows on blue backgrounds may be used with General Service symbol signs to create a General Service directional assembly.

10 The General Service sign legends may be either symbols or word messages.

Standard:

11 Symbols and word message General Service legends shall not be intermixed on the same sign.

12 The Pharmacy (D9-20) sign shall only be used to indicate the availability of a pharmacy that is open, with a State-licensed pharmacist present and on duty, 24 hours per day, 7 days per week, and that is located within 3 miles of an interchange on the Federal-aid system. The D9-20 sign shall have a 24 HR (D9-20aP) plaque mounted below it.

13 Use of the Hospital (D9-2) sign or the HOSPITAL (D9-13aP) plaque (see Figure 2I-1) shall be limited to facilities that operate 24 hours per day, 7 days per week.

Option:

14 The Emergency Medical Services (D9-13) sign (see Figure 2I-1 and Paragraph 20 of this Section) may be used for facilities that provide emergency medical care but do not operate on a full-time basis.

Support:

15 Formats for displaying different combinations of these services are described in Section 2I.03.

Option:

16 If the distance to the next point at which services are available is 10 miles or more, a Next Services Advance (D9-17P) plaque (see Figure 2I-2) may be installed below the General Service sign.

17 The International Symbol of Accessibility (D9-6) sign (see Figure 2I-1) may be used beneath General Service signs where paved ramps and rest room facilities accessible to, and usable by, persons with disabilities are provided.

Guidance:

18 When the D9-6 sign is used in accordance with Paragraph 16 of this Section, and van-accessible parking is available at the facility, a VAN ACCESSIBLE (D9-6P) plaque (see Figure 2I-1) should be mounted below the D9-6 sign.

Option:

19 The Recreational Vehicle Sanitary Station (D9-12) sign (see Figure 2I-1) may be used as needed to indicate the availability of facilities designed for the use of dumping wastes from recreational vehicle holding tanks.

20 The Litter Container (D9-4) sign (see Figure 2I-1) may be placed in advance of roadside turn-outs or rest areas, unless it distracts the driver's attention from other more important regulatory, warning, or directional signs.

21 The Emergency Medical Services (D9-13) symbol sign (see Figure 2I-1) may be used to identify medical service facilities that have been included in the Emergency Medical Services system under a signing policy developed by the State and/or local highway agency.

Standard:

22 The Emergency Medical Services symbol sign shall not be used to identify services other than qualified hospitals, ambulance stations, and qualified free-standing emergency medical treatment centers. If used, the Emergency Medical Services symbol sign shall be supplemented by a sign or plaque, as provided in Paragraph 22 of this Section, identifying the type of service provided.

Option:

23 The Emergency Medical Services symbol sign may be used above the HOSPITAL (D9-13aP) plaque or above a plaque with the legend AMBULANCE STATION (D9-13bP), EMERGENCY MEDICAL CARE (D9-13cP), or TRAUMA CENTER (D9-13dP). The Emergency Medical Services symbol sign may also be used to supplement Telephone (D9-1), Channel 9 Monitored (D12-3) (see Figure 2I-8), or POLICE (D9-14) signs.

Standard:

24 The legend EMERGENCY MEDICAL CARE shall not be used for services other than qualified free-standing emergency medical treatment centers.

Guidance:

25 Each State should develop a policy for the implementation of the Emergency Medical Services symbol sign.

26 The State should consider the following guidelines in the preparation of its policy:

A. AMBULANCE
   1. 24-hour service, 7 days per week.
   2. Staffed by two State-certified persons trained at least to the basic level.
   3. Vehicular communications with a hospital emergency department.
   4. Operator should have successfully completed an emergency-vehicle operator training course.

B. HOSPITAL
   1. 24-hour service, 7 days per week.
   2. Emergency department facilities with a physician (or emergency care nurse on duty within the emergency department with a physician on call) trained in emergency medical procedures on duty.
   3. Licensed or approved for definitive medical care by an appropriate State authority.
   4. Equipped for radio voice communications with ambulances and other hospitals.

C. Channel 9 Monitored

1. *Provided by either professional or volunteer monitors.*
2. *Available 24 hours per day, 7 days per week.*
3. *The service should be endorsed, sponsored, or controlled by an appropriate government authority to guarantee the level of monitoring.*

CHAPTER 2J - SPECIFIC SERVICE SIGNS

Section 2J.01 Eligibility

Standard:

01 Specific Service signs shall be defined as guide signs that provide road users with business identification and directional information for eligible services. Eligible service categories shall be limited to gas, food, lodging, camping, attractions, and electric vehicle (EV) charging.

Guidance:

02 The use of Specific Service signs should be limited to areas primarily rural in character with adequate space for all signs to be properly accommodated.

Support:

03 When services at an interchange are abundant, this is an indication that the character of the area is no longer primarily rural and General Service signs would be more appropriate.

Option:

04 Where an engineering study determines a need, Specific Service signs may be used on ~~any class of highway, including~~ freeways, expressways, and corresponding exit ramps. ~~conventional roads.~~

Standard ~~*Guidance:*~~

05 Specific Service signs shall ~~should~~ not be installed at an interchange where the road user cannot conveniently reenter the freeway or expressway and continue in the same direction of travel.

Standard:

06 Eligible service facilities shall comply with laws concerning the provisions of public accommodations without regard to race, religion, color, age, sex, or national origin, and laws concerning the licensing and approval of service facilities.

07 The attraction services shall include only facilities that have the primary purpose of providing amusement, historical, cultural, or leisure activities to the public.

Guidance:

08 For electric vehicle (EV) charging only; Except as provided in Paragraph 9 of this Section, distances to eligible services should not exceed 5~~3~~ miles in any direction.

Option:

09 *For electric vehicle (EV) charging only;* If, within the 5~~3~~-mile limit, facilities for the services being considered are not available or choose not to participate in the program, the limit of eligibility may be extended in 5~~3~~-mile increments until one or more facilities for the services being considered chooses to participate, or until 15 miles is reached, whichever comes first.

Support:

09a See OAC 5501:2-6-04 for specific service signs eligibility. [OAC 5501:2-6]

Standard:

10 If State or local agencies elect to provide Specific Service signing, there shall be a statewide policy for such signing and criteria for the eligibility and availability of the various types of services.

10a To be eligible, the gas, food, lodging, camping and attraction services shall be located in accordance with the distance criteria established by ODOT (see Paragraph 10b).

Support:

10b Additional information about ODOT's Logo Program is in Part 2 of the ODOT "Traffic Engineering Manual" (TEM). Information about the rules and specifications for ODOT's Logo Program is available by contacting the ODOT Office of Roadway Engineering.

~~*Guidance:*~~

~~*11 The criteria for the statewide policy should consider the following:*~~

~~*A. To qualify for a GAS business identification sign panel, a business should have:*~~

~~*1. Vehicle services including gasoline, oil, and water;*~~

~~*2. Continuous operation at least 16 hours per day, 7 days per week for freeways and expressways, and continuous operation at least 12 hours per day, 7 days per week for conventional roads; and*~~

~~*3. Modern sanitary facilities and drinking water.*~~

~~*B. To qualify for a FOOD business identification sign panel, a business should have:*~~

~~*1. Licensing or approval, where required;*~~

~~*2. Continuous operations to serve at least 2 meals per day, at least 6 days per week; and*~~

~~*3. Modern sanitary facilities.*~~

~~*C. To qualify for a LODGING business identification sign panel, a business should have:*~~

~~*1. Licensing or approval, where required;*~~

~~*2. Adequate sleeping accommodations; and*~~

~~*3. Modern sanitary facilities.*~~

~~*D. To qualify for a CAMPING business identification sign panel, a business should have:*~~

~~*1. Licensing or approval, where required;*~~

~~*2. Adequate parking accommodations; and*~~

~~*3. Modern sanitary facilities and drinking water.*~~

~~*E. To qualify for an ATTRACTION business identification sign panel, a facility should have:*~~

~~*1. Regional significance, in compliance with the provisions of Paragraph 7 of this Section; and*~~

~~*2. Adequate parking accommodations.*~~

Standard:

12 To be eligible for an Electric Vehicle (EV) CHARGING business identification sign panel, the EV chargers provided shall meet the criteria for Direct Current Fast Chargers provided in 23 CFR 680.106 and be in continuous operation at least 16 hours per day, 7 days per week.

Option:

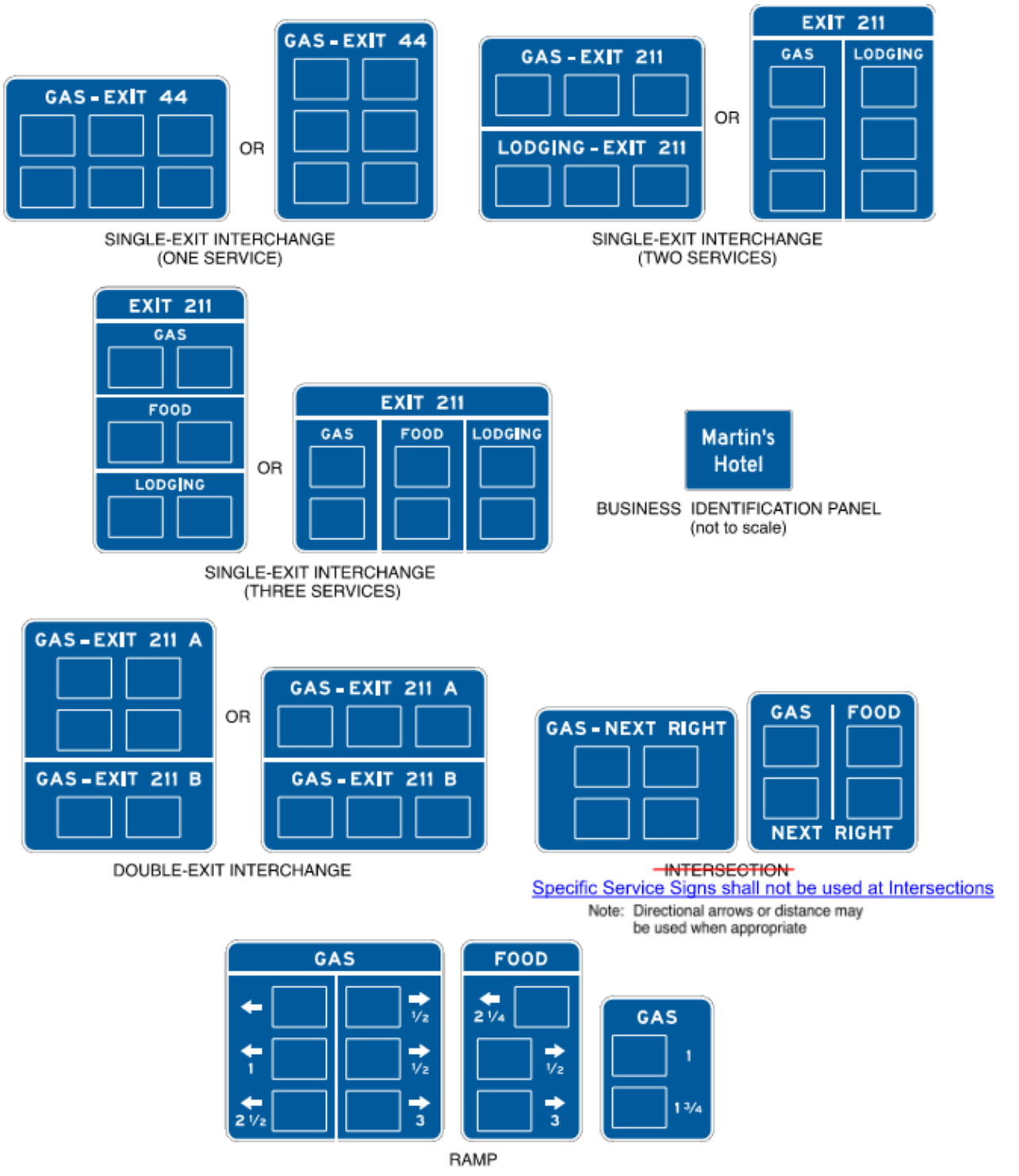
13 Business identification sign panels for a proprietary electric vehicle charging service may be included on an EV Charging Specific Service sign if it meets the eligibility criteria in Paragraph 12 of this Section.

Support:

14 Section 2J.12 contains additional information on criteria for the statewide policy regarding signing.

15 Section 2I.04 contains information regarding the Interstate Oasis program.

Figure 2J-1. Examples of Business Identification Panel Arrangements on Specific Service Signs



Section 2J.04 Number and Size of Signs and Business Identification Sign Panels

Guidance:

01 Sign sizes should be determined by the amount and height of legend and the number and size of business identification sign panels attached to the sign. All business identification sign panels on a sign should be the same size.

Standard:

02 Each Specific Service sign or sign assembly shall be limited to no more than six business identification sign panels.

Option:

03 Where more than six businesses of a specific service type are eligible for business identification sign panels at the same interchange, additional business identification sign panels of that same specific service type may also be displayed in accordance with the provisions of Paragraph 4 of this Section. The additional business identification sign panels may be displayed either by placing more than one specific service type on the same sign (see Paragraph 13 of Section 2J.02) or by using a second Specific Service sign of that specific service type if the additional sign can be added without exceeding the limit of four Specific Service signs at an interchange or intersection approach (see Paragraph 3 of Section 2J.02).

Standard:

04 Where business identification sign panels for more than six businesses of a specific service type are displayed at the same interchange or intersection approach, the following provisions shall apply:

- **A. No more than 12 business identification sign panels of a specific service type shall be displayed on no more than two Specific Service signs or sign assemblies;**
- **B. No more than six business identification sign panels shall be displayed on a single Specific Service sign; and**
- **C. No more than four Specific Service signs shall be displayed on the approach.**

Support:

05 Section 2J.08 contains information regarding Specific Service signs for double-exit interchanges.

06 Section 2J.09 contains information regarding Specific Service signs for multiple interchanges that are accessed from collector-distributor roadways rather than from the highway mainline.

Standard:

07 Each business identification sign panel attached to a Specific Service sign shall be a horizontally oriented rectangle with a width longer than the height. A business identification sign panel on signs for freeways and expressways shall not exceed ~~60~~ 48 inches in width and 36 inches in height (see Table 2J-2). A business identification sign panel on signs for conventional roads and freeway and expressway ramps shall not exceed ~~30~~ 24 inches in width and 18 inches in height (see Table 2J-2). The vertical and horizontal spacing between business identification sign panels shall not exceed 8 inches and 12 inches, respectively.

Support:

08 Sections 2A.10, 2E.13, and 2E.14 contain information regarding borders, interline spacing, and edge spacing.

Table 2J-2. Maximum Business Identification Sign Panel Sizes by Roadway Classification

Roadway Classification	Sign Panel Size
Freeway or Expressway	~~60 x 36~~ 48 x 36
~~Conventional Road or~~ Ramp	~~30 x 18~~ 24 x 18

Note: Sizes are shown in inches as width x height

Section 2J.07 Single-Exit Interchanges

Standard:

01 At numbered single-exit interchanges, the name of the service type followed by the exit number shall be displayed on one line above the business identification sign panels. At unnumbered interchanges, the directional legend NEXT RIGHT (LEFT) shall be used in place of the exit number.

02 At single-exit interchanges where traffic is allowed to turn onto the crossroad in either direction from the ramp, Specific Service ramp signs shall be installed along the ramp or opposite the ramp terminal for facilities that have business identification sign panels displayed along the main roadway if the facilities are not readily visible from the ramp terminal. Directions to the service facilities shall be indicated by arrows on the ramp signs. Business identification sign panels on Specific Service ramp signs shall be duplicates of those displayed on the Specific Service signs located in advance of the interchange, but shall be reduced in size (see Paragraph 7 of Section 2J.04).

Standard ~~Option:~~

03 Specific Service ramp signs shall ~~may~~ display distances (see Paragraphs 14 and 15 of Section 2A.08) to a service facility when the facility is not visible from ramp intersection with the crossroad.

Guidance:

04 Distances of less than ¼ mile, when displayed, should be displayed to the nearest 1/10 mile.

Section 2J.11 Signs at Intersections

Standard:

00a Except for Specific Service trailblazer signs, Specific Service signs shall not be used at intersections.

Support:

00b See Chapter 2K for information about tourist-oriented directional signs (TODS).

Guidance:

01 If both tourist-oriented information (see Chapter 2K) and specific service information are proposed to be used at the same intersection, the tourist-oriented directional and Specific Service trailblazer signs should be spaced sufficiently apart from one another, as well as apart from other guide, warning, and regulatory signs, to avoid confusion and allow sufficient time for road users to read and react to the information.

Standard:

02 If sufficient space to provide appropriate reading and reaction to all proposed signs is not available, higher priority shall be given to guide, warning, and regulatory signs and either the tourist-oriented directional signs or the Specific Service signs, or both, shall not be used.

Guidance:

03 If Specific Service trailblazer signs are used on conventional roads or at intersections on expressways, they should be installed between the previous interchange or intersection and at least 300 feet in advance of the intersection from which the services are available.

04 Business identification sign panels should not be displayed for a type of service for which a qualified facility is readily visible.

Standard:

05 If Specific Service signs are used on conventional roads or at intersections on expressways, the name of each type of service shall be displayed above its business identification sign panel(s), together with an appropriate legend, such as NEXT RIGHT (LEFT) or a directional arrow, either displayed on the same line as the name of the type of service or displayed below the business identification sign panel(s).

Option:

06 Signs similar to Specific Service ramp signs as described in Section 2J.07 may be provided on the crossroad.

Section 2J.12 Signing Policy

Standard:

01 If local agencies elect to provide Specific Service signing, the ODOT policy for such signing and criteria for the availability of the various types of services, as outlined in this Chapter, shall be used.

Support:

02 Pursuant to Sections 4511.101 of the Ohio Revised Code (ORC) and 5501:2-6 of the Administrative Code (OAC), the Ohio Department of Transportation (ODOT) has established "a program for placement of business logos for identification purposes on state directional signs within the rights-of-way of divided, multi- lane, limited access highways in both rural and urban area," including criteria for the availability of the various types of services, sign specifications and program rules.

~~**Standard:**~~

~~**01 In addition to a statewide policy for eligibility of service providers (see Section 2J.01), each highway agency that elects to use Specific Service signs shall establish a signing policy.**~~

~~*Guidance:*~~

~~*02 The signing policy should include, at a minimum, the provisions of Section 2J.01 and at least the following criteria:*~~

- ~~*A. Selection of eligible businesses;*~~
- ~~*B. Distances to eligible services;*~~
- ~~*C. The use of business identification sign panels, legends, and signs complying with the provisions of this Manual and State design requirements;*~~
- ~~*D. Removal or covering of business identification sign panels during off seasons for businesses that operate on a seasonal basis;*~~
- ~~*E. The circumstances, if any, under which Specific Service signs are permitted to be used in non-rural areas; and*~~
- ~~*F. Determination of the costs to businesses for initial permits, installations, annual maintenance, and removal of business identification sign panels.*~~

CHAPTER 2K - TOURIST-ORIENTED DIRECTIONAL SIGNS

Section 2K.01 Purpose and Application

Support:

01 Tourist-oriented directional signs are post-mounted guide sign assemblies with one or more signs that display the business identification of and directional information for eligible business, service, and activity facilities.

Standard:

02 A facility shall be eligible for tourist-oriented directional signs only if it derives its major portion of income or visitors during the normal business season from road users not residing in the area of the facility.

Option:

03 Tourist-oriented directional signs may include businesses involved with seasonal agricultural products.

Standard:

04 The use of tourist-oriented directional signs shall be limited to rural highways (see definition in Section 1C.02). Tourist-oriented directional signs shall not be installed on conventional roads in urban or urbanized areas or on freeway or expressway main roadways or ramps.

Option:

04a Tourist-oriented directional signs may be used on expressway main roadways. [OAC 5501:2-6-03]

05 Tourist-oriented directional signs may be used in conjunction with General Service signs (see Section 2I.02).

Support:

06 Section 2K.07 contains information on the adoption of a State policy for States that elect to use tourist-oriented directional signs.

Section 2K.07 State Policy

Standard:

01 To be eligible for tourist-oriented directional signing, facilities shall comply with applicable State and Federal laws concerning the provisions of public accommodations without regard to race, religion, color, age, sex, or national origin, and with laws concerning the licensing and approval of service facilities. Each State that elects to use tourist-oriented directional signs shall adopt a policy that complies with these provisions.

01a ORC Section 4511.106 requires that any local authority electing to establish a tourist-oriented directional signs program shall conform to the rules and specifications contained in the program established by ODOT. [ORC 4511.106]

Support:

01b The Ohio Department of Transportation (ODOT) has established and described in Sections 4511.102 through 4511.105 of the Ohio Revised Code (ORC), Section 5501:2-6 of the Ohio Administrative Code (OAC) and in Section 207-3 of the ODOT Traffic Engineering Manual (TEM) "a program for the placement of tourist-oriented directional signs and trailblazer markers within the rights-of-way of those portions of rural state highways that are not on the interstate system," including criteria for availability of the various types of services, sign specifications and program rules. [ORC 4511.102 through 4511.105] [OAC 5501:2-6]

~~*Guidance:*~~

~~*02 The State policy should include:*~~

~~*A. A definition of tourist-oriented business, service, and activity facilities.*~~
~~*B. Eligibility criteria for signs for facilities.*~~
~~*C. Provision for covering signs during off seasons for facilities operated on a seasonal basis.*~~
~~*D. Provisions for signs to facilities that are not located on the crossroad when such facilities are eligible for signs.*~~
~~*E. A definition of the immediate area in compliance with the provisions of Paragraph 2 of Section 2K.01.*~~
~~*F. Maximum distances to eligible facilities. The maximum distance should be 5 miles.*~~
~~*G. Provision for information centers (plazas) when the number of eligible sign applicants exceeds the maximum permissible number of sign panel installations.*~~
~~*H. Provision for limiting the number of signs when there are more applicants than the maximum number of signs permitted.*~~
~~*I. Criteria for use at intersections on expressways.*~~
~~*J. Provisions for controlling or excluding those businesses which have illegal signs as defined by the Highway Beautification Act of 1965 (23 U.S.C. 131).*~~
~~*K. Provisions for States to charge fees to cover the cost of signs through a permit system.*~~
~~*L. A definition of the conditions under which the time of operation is displayed.*~~
~~*M. Provisions for determining if advance signs will be permitted, and the circumstances under which they will be installed.*~~

PART 3 – MARKINGS

Introduction

- Refer to the "Sign Designs and Markings Manual" (SDMM) for information in addition to that included in the "Standard Highway Signs" (SHS) publication referenced in the MUTCD.
- Ohio Revised Code 4511.46 requires yielding to pedestrians. All stop guidance has been removed accordingly. [ORC 4511.46]
- Additional paragraphs added to the Ohio Supplement document include a number and a letter. Each new paragraph is independent of the preceding numbered paragraph. As an example, paragraph 04a is independent of paragraph 04.

CHAPTER 3B – PAVEMENT AND CURB MARKINGS

Section 3B.03 No-Passing Zone Pavement Markings

Standard:

01 No-passing zones shall be marked by either the one-direction no-passing zone pavement markings or the two-direction no-passing zone pavement markings described in Section 3B.01 and shown in Figures 3B-1 and 3B-3.

02 No-passing zone markings shall be used on:

A. Two-way roadways at lane-reduction transitions (see Section 3B.12),

B. Approaches to obstructions that must be passed on the right (see Section 3B.13),

C. Approaches to grade crossings (see Section 8C.02), and

D. Approaches to crosswalks.

03 On two-way, two-lane or three-lane roadways where center line markings are installed, no-passing zones shall be established at vertical and horizontal curves and other locations where an engineering study indicates that passing must be prohibited because of inadequate sight distances or other special conditions.

04 On roadways with center line markings, no-passing zone markings shall be used at horizontal or vertical curves where the passing sight distance is less than the minimum shown in Table 3B-1 for the 85th-percentile speed or the speed limit.

Guidance:

04a There is explicitly no requirement under this Manual that no-passing zones should be marked at intersections, notwithstanding the provisions of any section of this Manual.

Option:

04b No-passing zones may be marked at rural and urban intersections when engineering judgment determines a need.

Support:

05 The passing sight distance on a vertical curve is the distance at which an object 3.5 feet above the pavement surface can be seen from a point 3.5 feet above the pavement (see Figure 3B-4). Similarly, the passing sight distance on a horizontal curve is the distance measured along the center line (or right-hand lane line of a three-lane roadway) between two points 3.5 feet above the pavement on a line tangent to the embankment or other obstruction that cuts off the view on the inside of the curve (see Figure 3B-4).

06 The upstream end of a no-passing zone at point “a” in Figure 3B-4 is that point where the sight distance first becomes less than that specified in Table 3B-1. The downstream end of the no-passing zone

at point "b" in Figure 3B-4 is that point at which the sight distance again becomes greater than the minimum specified.

Guidance:

07 The decision as to whether or not a no-passing zone should be marked at intersections is a matter of engineering judgment. When used, the no-passing zone should start at least 100 feet in advance of the intersection. ~~Where the distance between successive no-passing zones is less than 400 feet, no-passing zone markings should connect the zones.~~

07a The no-passing zone marking should be not less than 500 feet in length, except in advance of an intersection, or as a result of a special engineering study. If the actual no-passing zone distance is less than 500 feet, an additional length of marking should be added at the beginning of the zone.

07b The distance between successive no-passing zones should be no less than 400 feet for speeds less than 50 mph and no less than 600 feet for speeds 50 mph or greater. When the distances are less than these, the single or double no-passing lines should be extended to connect the zones.

07c No-passing markings should be used on approaches to other locations where passing should be prohibited.

Support:

07d Revision to 3B.03, P07 and addition of paragraphs 07a – 07c are based upon engineering judgement to provide practitioners with additional guidance on placement of no-passing zone markings.

08 No-passing zone signs (see Sections 2B.36, 2B.37, and 2C.53) are sometimes used to emphasize the existence and extent of a no-passing zone.

Standard:

09 On three-lane roadways where the direction of travel in the center lane transitions from one direction to the other, a no-passing buffer zone, consisting of a flush median island (see Section 3J.03) at least 50 feet in length, shall be provided in the center lane as shown in Figure 3B-5. A lane-reduction transition (see Section 3B.12) shall be provided approaching each end of the buffer zone.

Section 3B.19 Stop and Yield Lines

Option:

01 Stop lines may be used to indicate the point behind which vehicles are required to stop in compliance with a STOP (R1-1) sign, ~~a Stop Here for Pedestrians (R1-5b) sign, a Stop Here for School Crossing (R1-5c) sign, a Stop Here for Trail Crossing (R-5e) sign,~~ or some other traffic control device that requires vehicles to stop, except YIELD signs that are not associated with passive grade crossings. [ORC 4511.46]

Standard:

02 Stop lines shall consist of solid white lines extending across approach lanes to indicate the point at which the stop is intended or required to be made.

03 Except as provided in Section 8C.03, stop lines shall not be used at locations where drivers are required to yield in compliance with a YIELD (R1-2) sign, a Yield Here to Pedestrians (R1-5) sign, a Yield Here to School Crossings (R1-5a) sign, a Yield Here to Trail Crossings (R1-5d) sign, or at locations on uncontrolled approaches where drivers or bicyclists are required by State law to yield to pedestrians.

Guidance:

04 Stop lines should be used to indicate the point behind which vehicles are required to stop in compliance with a traffic control signal (see Section 4D.08).

05 Stop lines should be 12 to 24 inches wide.

Option:

06 Stop lines may be omitted at ramp control signals.

Support:

07 Section 4J.02 contains information regarding the use and application of stop lines in conjunction with a pedestrian hybrid beacon.

Standard:

08 If used, a yield line pavement marking shall not be installed without a Yield (R1-2) sign, a Yield Here to Pedestrians (R1-5) sign, a Yield Here to School Crossings (R1-5a) sign, a Yield Here to Trail Crossings (R1-5d) sign, or some other traffic control device that requires vehicles to yield (see Figure 3B-16).

09 Yield lines shall not be used at locations where drivers are required to stop in compliance with a STOP (R1-1) sign, ~~a Stop Here for Pedestrians (R1-5b) sign, a Stop Here for School Crossing (R1-5c) sign, a Stop Here for Trail Crossing (R1-5c) sign,~~ a traffic control signal, or some other traffic control device. [ORC 4511.46]

10 Yield lines shall consist of a row of solid white isosceles triangles pointing toward approaching vehicles extending across approach lanes to indicate the point at which the yield is intended or required to be made.

Option:

11 If a yield line marking is used on a bicycle facility, a Bicycles Yield to Pedestrians (R9-6) sign (see Section 9B-12) may be used.

Guidance:

12 The individual triangles comprising the yield line should have a base of 12 to 24 inches wide and a height equal to 1.5 times the base. The space between the triangles should be 3 to 12 inches.

13 If used, stop and yield lines should be placed a minimum of 4 feet in advance of the nearest crosswalk line at controlled intersections, except for yield lines at roundabouts as provided for in Section 3D.04 and at midblock crosswalks. In the absence of a marked crosswalk, the stop line or yield line should be placed at the desired stopping or yielding point, but should not be placed more than 30 feet or less than 4 feet from the nearest edge of the intersecting traveled way.

Standard:

14 If yield ~~(stop)~~ lines are used at a crosswalk that crosses an uncontrolled multi-lane approach, Yield Here to ~~(Stop Here for)~~ Pedestrians (R1-5 series) signs (see Section 2B.19) shall be used. [ORC 4511.46]

Guidance:

15 If yield ~~(stop)~~ lines are used at a crosswalk that crosses an uncontrolled multi-lane approach, the yield (stop) line should be placed 20 to 50 feet in advance of the nearest crosswalk line (see Drawing B in Figure 3B-16). [ORC 4511.46]

16 If yield ~~or stop~~ lines are used in advance of a crosswalk that crosses an uncontrolled multi-lane approach, parking should be prohibited in the area between the yield or stop line and the crosswalk. [ORC 4511.46]

Support:

17 Section 9B.12 contains information for providing signing applicable to bicyclists also subject to a yielding requirement at a crosswalk that crosses an uncontrolled approach.

Guidance:

18 Yield ~~(stop)~~ lines and Yield Here to ~~(Stop Here for)~~ Pedestrians signs should not be used in advance of crosswalks that cross an approach to or departure from a circular intersection. [ORC 4511.46]

Support:

19 Section 8C.03 contains information regarding the use of stop lines and yield lines at grade crossings.

Option:

20 Stop and yield lines may be staggered longitudinally on a lane-by-lane basis (see Drawing D in Figure 3B-13).

Support:

21 Staggered stop lines and staggered yield lines can improve the driver's view of pedestrians, provide better sight distance for turning vehicles, and increase the turning radius for left-turning vehicles.

PART 4 - HIGHWAY TRAFFIC SIGNALS

Introduction

- Refer to the "Sign Designs and Markings Manual" (SDMM) for information in addition to that included in the "Standard Highway Signs" (SHS) publication referenced in the MUTCD.
- Additional paragraphs added to the Ohio Supplement document include a number and a letter. Each new paragraph is independent of the preceding numbered paragraph. As an example, paragraph 04a is independent of paragraph 04.
- Ohio uses a State specific State Route sign/design. State Routes shall use the Ohio State Route sign/design. See the SDMM for more details.
- Ohio Revised Code Vehicle definition does not include Streetcars or Trackless Trolleys. [ORC 4511.01] Wherever the MUTCD mentions "Vehicular Traffic", users shall substitute "Vehicular Traffic, Streetcars and Trackless Trolleys".

CHAPTER 4F – STEADY (STOP-AND-GO) OPERATION OF TRAFFIC CONTROL SIGNALS

Section 4F.04 Signal Indications for Permissive Only Mode Left-Turn Movements in a Separate Signal Face

Standard:

01 A separate left-turn signal face shall not be used for an approach that does not include a mandatory left-turn lane.

02 If a separate left-turn signal face is being operated in a permissive only left-turn mode, a CIRCULAR GREEN signal indication shall not be used in that face.

03 If a separate left-turn signal face is being operated in a permissive only left-turn mode and a flashing left-turn YELLOW ARROW signal indication is provided, it shall meet the following requirements (see Figure 4F-2):

- **A. It shall be capable of displaying the following signal indications: steady left-turn RED ARROW, steady left-turn YELLOW ARROW, and flashing left-turn YELLOW ARROW. Only one of the three indications shall be displayed at any given time.**
- **B. During the permissive left-turn movement, a flashing left-turn YELLOW ARROW signal indication shall be displayed.**
- **C. A steady left-turn YELLOW ARROW signal indication shall be displayed following the flashing left-turn YELLOW ARROW signal indication.**
- **D. It shall be permitted to display a flashing left-turn YELLOW ARROW signal indication for a permissive left-turn movement while the signal faces for the adjacent through movement display steady CIRCULAR RED signal indications and the opposing left-turn signal faces display left-turn GREEN ARROW signal indications for a protected left-turn movement.**
- **E. During steady mode (stop-and-go) operation, the signal section that displays the steady left-turn YELLOW ARROW signal indication during change intervals shall not be used to display the flashing left-turn YELLOW ARROW signal indication for permissive left turns unless a bimodal signal section capable of alternating between the display of a steady YELLOW ARROW and a flashing YELLOW ARROW signal indication is used to operate variable left-turn mode phasing.**
- **F. During flashing mode operation (see Section 4G.01), the display of a flashing left-turn YELLOW ARROW signal indication shall be only from the signal section that displays a**

steady left-turn YELLOW ARROW signal indication during steady mode (stop-and-go) operation.

G. If the permissive only mode is not the only left-turn mode used for the approach, the signal face shall be the same separate left-turn signal face with a flashing YELLOW ARROW signal indication that is used for the protected/permissive mode (see Section 4F.08) except that the left-turn GREEN ARROW signal indication shall not be displayed when operating in the permissive only mode.

Guidance:

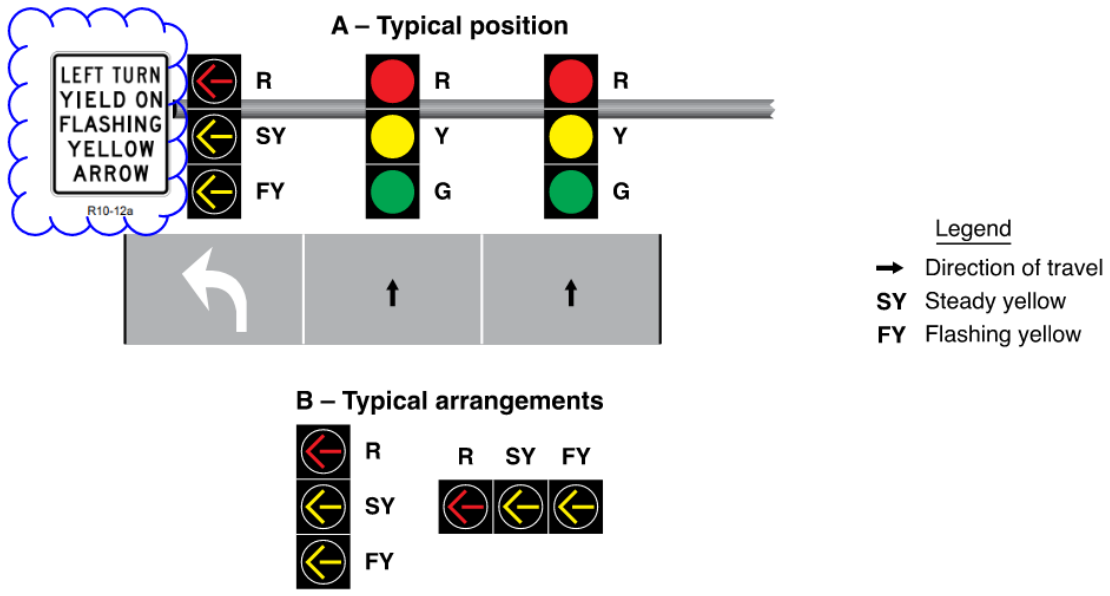
03a A public information campaign should be used in advance of projects introducing this device in an area to make road users aware of the planned introduction of the new signal display type and its meaning. Once the flashing left-turn YELLOW ARROW signal indication has been in use within an area for 5 Years, public information campaigns should not be needed.

03b For consistency, when installing a flashing left-turn YELLOW ARROW signal indication at a new location, the same treatment should be considered for nearby signal installations with a similar operation.

Standard:

03c The LEFT TURN YIELD ON FLASHING YELLOW ARROW (R10-12a) sign (see Figure 4F-2) shall be used with the installation of each flashing left-turn YELLOW ARROW signal indication within a jurisdiction for at least five years.

Figure 4F-2. Typical Position and Arrangements of Separate Signal Faces with Flashing Yellow Arrow for Permissive Only Mode Left Turns



Option:

04 A separate left-turn signal face with a flashing left-turn RED ARROW signal indication during the permissive left-turn movement may be used for unusual geometric conditions, such as wide medians with offset left-turn lanes, but only when an engineering study determines that each and every vehicle must successively come to a full stop before making a permissive left turn.

Standard:

05 If a separate left-turn signal face is being operated in a permissive only left-turn mode and a flashing left-turn RED ARROW signal indication is provided, it shall meet the following requirements (see Figure 4F-3):

- **A. It shall be capable of displaying the following signal indications: steady or flashing left-turn RED ARROW, steady left-turn YELLOW ARROW, and left-turn GREEN ARROW. Only one of the three indications shall be displayed at any given time. The GREEN ARROW indication is required in order to provide a three-section signal face, but shall not be displayed during the permissive only mode.**
- **B. During the permissive left-turn movement, a flashing left-turn RED ARROW signal indication shall be displayed, thus indicating that each and every vehicle must successively come to a full stop before making a permissive left turn.**
- **C. A steady left-turn YELLOW ARROW signal indication shall be displayed following the flashing left-turn RED ARROW signal indication.**
- **D. It shall be permitted to display a flashing left-turn RED ARROW signal indication for a permissive left-turn movement while the signal faces for the adjacent through movement display steady CIRCULAR RED signal indications and the opposing left-turn signal faces display left-turn GREEN ARROW signal indications for a protected left-turn movement.**
- **E. ~~A supplementary sign shall not be required. If used, it shall be a LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP (R10-27) sign (see Section 2B.59).~~ The LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP (R10-27) sign (see Figure 4F-3) shall be used with the installation of each flashing left-turn RED ARROW signal indication within a jurisdiction for at least five years. No other signs related to flashing left-turn RED ARROW signal indications shall be used.**

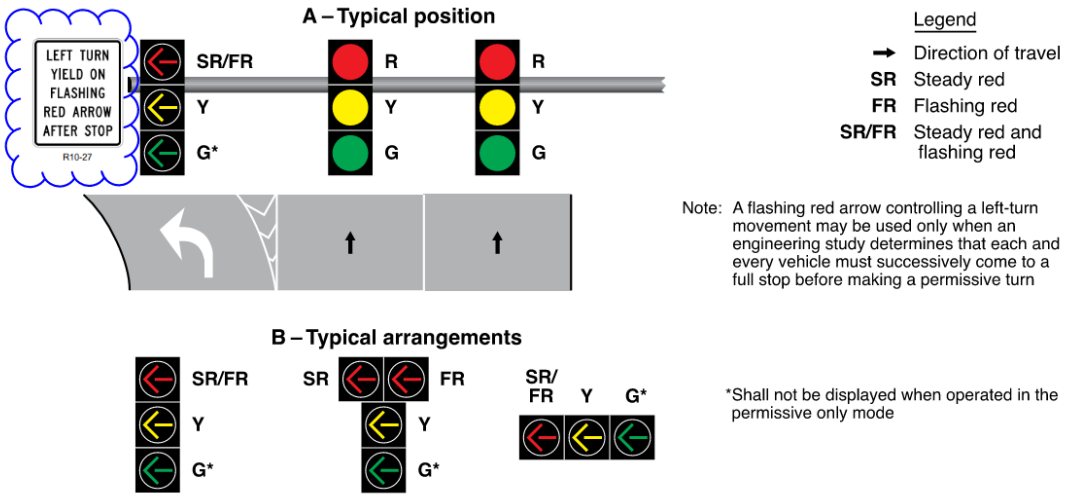
Guidance:

05a A public information campaign should be used in advance of projects introducing this device in an area to make road users aware of the planned introduction of the new signal display type and its meaning. Once the flashing left-turn RED ARROW signal indication has been in use within an area for 5 years, public information campaigns should not be needed.

Option:

06 The requirements of Item A in Paragraph 5 of this Section may be met by a vertically-arranged signal face with a horizontal cluster of two left-turn RED ARROW signal indications, the left-most of which displays a steady indication and the right-most of which displays a flashing indication (see Figure 4F-3).

Figure 4F-3. Typical Position and Arrangements of Separate Signal Faces with Flashing Red Arrow for Permissive Only Mode and Protected/Permissive Mode Left Turns



Section 4F.08 Signal Indications for Protected/Permissive Mode Left-Turn Movements in a Separate Signal Face

Standard:

01 A separate left-turn signal face shall not be used for an approach that does not include a mandatory left-turn lane.

02 If a separate left-turn signal face is being operated in a protected/permissive left-turn mode, a CIRCULAR GREEN signal indication shall not be used in that face.

03 If a separate left-turn signal face is being operated in a protected/permissive left-turn mode and a flashing left-turn YELLOW ARROW signal indication is provided, it shall meet the following requirements (see Figure 4F-7):

- **A. It shall be capable of displaying the following signal indications: steady left-turn RED ARROW, steady left-turn YELLOW ARROW, flashing left-turn YELLOW ARROW, and left-turn GREEN ARROW. Only one of the four indications shall be displayed at any given time.**
- **B. During the protected left-turn movement, a left-turn GREEN ARROW signal indication shall be displayed.**
- **C. A steady left-turn YELLOW ARROW signal indication shall be displayed following the left-turn GREEN ARROW signal indication. It shall be permitted to display a steady left-turn RED ARROW signal indication immediately following the steady left-turn YELLOW ARROW signal indication to provide a red clearance interval.**
- **D. During the permissive left-turn movement, a flashing left-turn YELLOW ARROW signal indication shall be displayed.**
- **E. A steady left-turn YELLOW ARROW signal indication shall be displayed following the flashing left-turn YELLOW ARROW signal indication if the permissive left-turn movement is being terminated and the separate left-turn signal face will subsequently display a steady left-turn RED ARROW indication.**
- **F. It shall be permitted to display a flashing left-turn YELLOW ARROW signal indication for a permissive left-turn movement while the signal faces for the adjacent through movement**

display steady CIRCULAR RED signal indications and the opposing left-turn signal faces display left-turn GREEN ARROW signal indications for a protected left-turn movement.

G. When a permissive left-turn movement is changing to a protected left-turn movement, a left-turn GREEN ARROW signal indication shall be displayed immediately upon the termination of the flashing left-turn YELLOW ARROW signal indication. A steady left-turn YELLOW ARROW signal indication shall not be displayed between the display of the flashing left-turn YELLOW ARROW signal indication and the display of the steady left-turn GREEN ARROW signal indication.

H. The display shall be either:

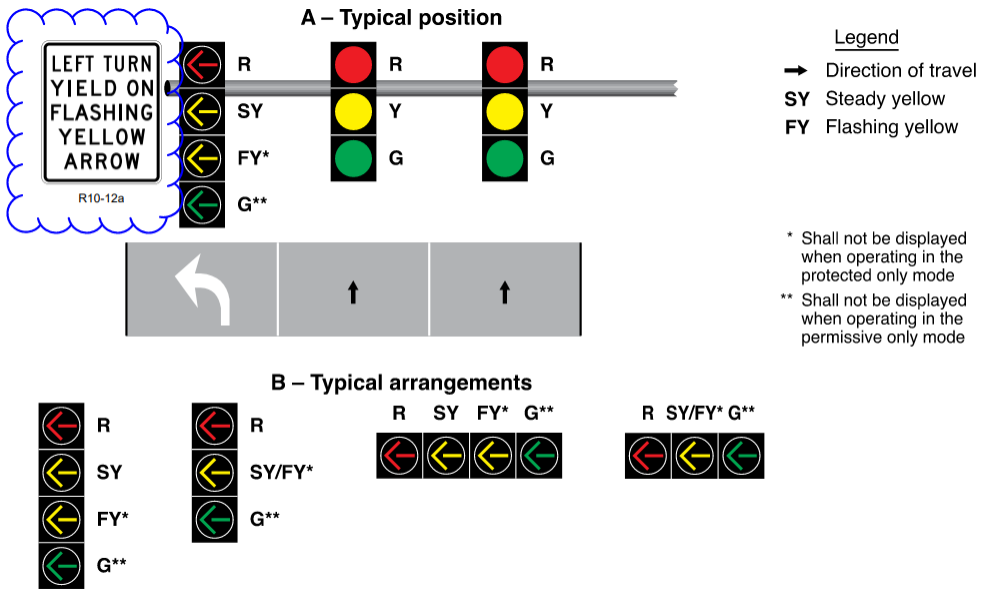
1. **A four-section signal face with the steady left-turn YELLOW ARROW signal indication being displayed in a different section than the flashing left-turn YELLOW ARROW signal indication, or**
2. **A three-section signal face with the steady left-turn YELLOW ARROW signal indication and the flashing left-turn YELLOW ARROW signal indication being displayed in the same bimodal signal section.**

I. During steady mode (stop-and-go) operation where a four-section signal face is used, the signal section that displays the steady left-turn YELLOW ARROW signal indication during change intervals shall not be used to display the flashing left-turn YELLOW ARROW signal indication for permissive left turns.

J. During flashing mode operation (see Chapter 4G) where a four-section signal face is used, the display of a flashing left-turn YELLOW ARROW signal indication shall be only from the signal section that displays a steady left-turn YELLOW ARROW signal indication during steady mode (stop-and-go) operation.

K. The LEFT TURN YIELD ON FLASHING YELLOW ARROW (R10-12a) sign (see Figure 4F-7) shall be used with the installation of each flashing left-turn YELLOW ARROW signal indication within a jurisdiction for at least five years (see Section 4F.04).

Figure 4F-7. Typical Position and Arrangements of Separate Signal Faces with Flashing Yellow Arrow for Protected/Permissive Mode and Variable Mode Left Turns



Option:

04 A bimodal signal section (capable of displaying a GREEN ARROW for the protected left-turn movement and a flashing YELLOW ARROW for the permissive left-turn movement) along with a steady left-turn YELLOW ARROW signal indication and a steady left-turn RED ARROW signal indication may be used for a separate left-turn signal face and may be considered to be a four-section signal face that is compliant with Item H.1 of Paragraph 3 of this Section.

05 A separate left-turn signal face with a flashing left-turn RED ARROW signal indication during the permissive left-turn movement may be used for unusual geometric conditions, such as wide medians with offset left-turn lanes, but only when an engineering study determines that each and every vehicle must successively come to a full stop before making a permissive left turn.

Standard:

06 If a separate left-turn signal face is being operated in a protected/permissive left-turn mode and a flashing left-turn RED ARROW signal indication is provided, it shall meet the following requirements (see Figure 4F-3):

- **A. It shall be capable of displaying the following signal indications: steady or flashing left-turn RED ARROW, steady left-turn YELLOW ARROW, and left-turn GREEN ARROW. Only one of the three indications shall be displayed at any given time.**
- **B. During the protected left-turn movement, a left-turn GREEN ARROW signal indication shall be displayed.**
- **C. A steady left-turn YELLOW ARROW signal indication shall be displayed following the left-turn GREEN ARROW signal indication.**
- **D. During the permissive left-turn movement, a flashing left-turn RED ARROW signal indication shall be displayed.**
- **E. A steady left-turn YELLOW ARROW signal indication shall be displayed following the flashing left-turn RED ARROW signal indication if the permissive left-turn movement is being terminated and the separate left-turn signal face will subsequently display a steady left-turn RED ARROW indication.**
- **F. When a permissive left-turn movement is changing to a protected left-turn movement, a left-turn GREEN ARROW signal indication shall be displayed immediately upon the termination of the flashing left-turn RED ARROW signal indication. A steady left-turn YELLOW ARROW signal indication shall not be displayed between the display of the flashing left-turn RED ARROW signal indication and the display of the steady left-turn GREEN ARROW signal indication.**
- **G. It shall be permitted to display a flashing left-turn RED ARROW signal indication for a permissive left-turn movement while the signal faces for the adjacent through movement display steady CIRCULAR RED signal indications and the opposing left-turn signal faces display left-turn GREEN ARROW signal indications for a protected left-turn movement.**
- **H. ~~A supplementary sign shall not be required. If used, it shall be a LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP (R10-27) sign (see Section 2B.59).~~ The LEFT TURN YIELD ON FLASHING RED ARROW AFTER STOP (R10-27) sign (see Figure 4F-3) shall be used with the installation of each flashing left-turn RED ARROW signal indication within a jurisdiction for at least five years (see Section 4F.04). No other signs related to flashing left-turn RED ARROW signal indications shall be used.**

Option:

07 The requirements of Item A in Paragraph 6 of this Section may be met by a vertically-arranged signal face with a horizontal cluster of two left-turn RED ARROW signal indications, the left-most of which displays a steady indication and the right-most of which displays a flashing indication (see Figure 4F-3).

Section 4F.19 Preemption Control of Traffic Control Signals

Support:

01 Preemption control (see definition in Section 1C.02) is typically given to trains, boats, emergency vehicles, and light rail transit.

02 Examples of preemption control include the following:

A. The prompt displaying of green signal indications at signalized locations ahead of fire vehicles, law enforcement vehicles, ambulances, and other official emergency vehicles;
B. A special sequence of signal phases and timing to expedite and/or provide additional clearance time for vehicles to clear the tracks prior to the arrival of rail traffic; and
C. A special sequence of signal phases to display a steady red indication to prohibit turning movements toward the tracks during the approach or passage of rail traffic.

Standard:

03 During the transition into preemption control, the yellow change interval, and any red clearance interval that follows, shall not be shortened or omitted.

Option:

04 During the transition into preemption control:

A. Any pedestrian walk interval ~~and/or pedestrian change interval~~ may be shortened or omitted.
B. The red clearance interval, if any, may be omitted so that the return to the previous green signal indication follows a steady yellow signal indication in the same signal face.

Standard:

05 During preemption control and during the transition out of preemption control:

A. Any yellow change interval, and any red clearance interval that follows, shall not be shortened or omitted.
B. A signal indication sequence from a steady yellow signal indication to a green signal indication shall not be permitted.

Option:

06 A distinctive indication may be provided at the intersection to inform law enforcement personnel who are escorting traffic (such as a parade or funeral procession) that the traffic control signal has changed to a red indication not because of normal cycling, but because it has been preempted by rail traffic approaching an adjacent grade crossing or by boat traffic approaching an adjacent movable bridge.

07 A distinctive indication may be provided at the intersection to show that an emergency vehicle has been given control of the traffic control signal (see Section 11-106 of the "Uniform Vehicle Code"). In order to assist in the understanding of the control of the traffic control signal, a common distinctive indication may be used where drivers from different agencies travel through the same intersection when responding to emergencies.

Guidance:

08 Except for traffic control signals interconnected with light rail transit systems, traffic control signals with railroad preemption or coordinated with flashing-light signal systems should be provided with a back-up power supply.

09 If a traffic control signal or hybrid beacon is installed near or within a grade crossing or if a grade crossing with active traffic control devices is within or near a signalized highway intersection, Chapter 8D should be consulted.

Support:

10 Section 8D.09 contains additional information regarding preemption for grade crossings. Section 8D.10 contains information regarding prohibiting movements toward the grade crossing during

preemption. Sections 8D.11 and 8D.12 contain additional information regarding pre-signals and queue cutter signals, respectively, for grade crossings.

CHAPTER 4I – PEDESTRIAN CONTROL FEATURES

Section 4I.06 Pedestrian Intervals and Signal Phases

Standard:

01 At intersections equipped with pedestrian signal heads, the pedestrian signal indications shall be displayed except when the vehicular traffic control signal is being operated in the flashing mode. At those times, the pedestrian signal indications shall not be displayed.

02 Except as provided in Paragraph 3 of Section 4J.03, when the pedestrian signal heads associated with a crosswalk are displaying either a steady WALKING PERSON (symbolizing WALK) or a flashing UPRAISED HAND (symbolizing DONT WALK) signal indication, a steady red signal indication shall be shown to any conflicting vehicular movement that is approaching the intersection or midblock location perpendicular or nearly perpendicular to the crosswalk.

03 When pedestrian signal heads are used, a WALKING PERSON (symbolizing WALK) signal indication shall be displayed only when pedestrians are permitted to leave the curb or shoulder.

04 A pedestrian change interval consisting of a flashing UPRAISED HAND (symbolizing DONT WALK) signal indication shall begin immediately following the WALKING PERSON (symbolizing WALK) signal indication. Following the pedestrian change interval, a buffer interval consisting of a steady UPRAISED HAND (symbolizing DONT WALK) signal indication shall be displayed for at least 2 seconds prior to the release of any conflicting vehicular movement. The sum of the time of the pedestrian change interval and the buffer interval shall not be less than the calculated pedestrian clearance time (see Paragraphs 7 through 16 of this Section). The buffer interval shall not begin later than the beginning of the red clearance interval, if used.

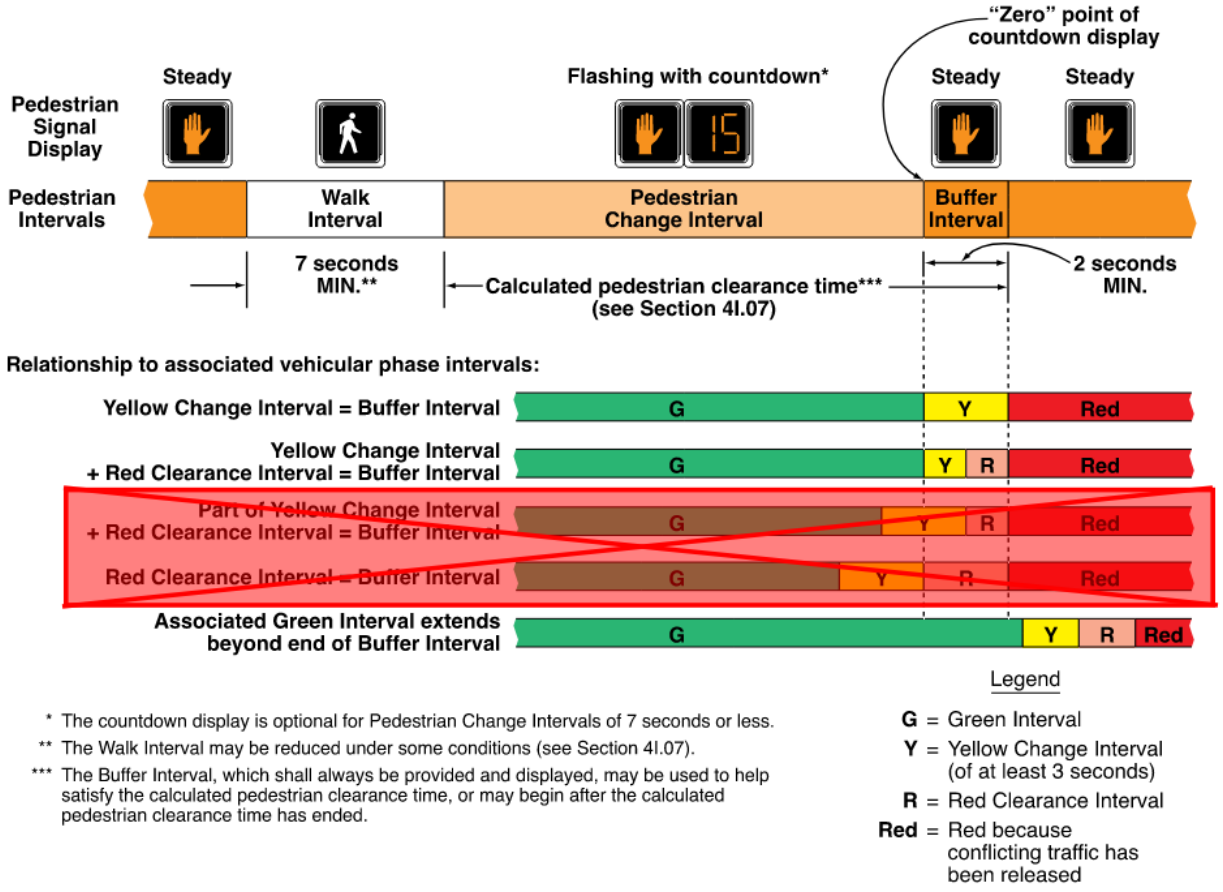
Standard: ~~Option:~~

05 During the yellow change interval, the UPRAISED HAND (symbolizing DON'T WALK) signal indication shall ~~may~~ **be displayed as** ~~either a flashing indication,~~ **a steady indication**~~, or a flashing indication for an initial portion of the yellow change interval and a steady indication for the remainder of the interval.~~

Support:

06 Figure 4I-4 illustrates the pedestrian intervals and their possible relationships with associated vehicular signal phase intervals. Figure updated to reflect Ohio Specific updates in Paragraph 05. The update is based upon information found in NCHRP Report 812 Signal Timing Manual, Second Edition, Exhibit 6-15.

Figure 4I-4. Pedestrian Intervals



Guidance:

07 Except as provided in Paragraph 8 of this Section, the pedestrian clearance time should be sufficient to allow a pedestrian crossing in the crosswalk who left the curb or edge of pavement at the end of the WALKING PERSON (symbolizing WALK) signal indication to travel at a walking speed of 3.5 feet per second to at least the far side of the traveled way or to a median of sufficient width for pedestrians to wait.

Option:

08 A walking speed of up to 4 feet per second may be used to evaluate the sufficiency of the pedestrian clearance time at locations where an extended push button press function has been installed to provide slower pedestrians an opportunity to request and receive a longer pedestrian clearance time. Passive pedestrian detection may also be used to automatically adjust the pedestrian clearance time based on the pedestrian's actual walking speed or actual clearance of the crosswalk.

09 The additional time provided by an extended push button press to satisfy pedestrian clearance time needs may be added to either the walk interval or the pedestrian change interval.

Guidance:

10 Where pedestrians who walk slower than 3.5 feet per second, or pedestrians who use wheelchairs, routinely use the crosswalk, a walking speed of less than 3.5 feet per second should be considered in determining the pedestrian clearance time.

11 Except as provided in Paragraph 12 of this Section, the walk interval should be at least 7 seconds in length so that pedestrians will have adequate opportunity to leave the curb or shoulder before the pedestrian clearance time begins.

Option:

12 If pedestrian volumes and characteristics do not require a 7-second walk interval, walk intervals as short as 4 seconds may be used.

Support:

13 The walk interval is intended for pedestrians to start their crossing. The pedestrian clearance time is intended to allow pedestrians who started crossing during the walk interval to complete their crossing. Longer walk intervals are often used when the duration of the vehicular green phase associated with the pedestrian crossing is long enough to allow it.

Guidance:

14 The total of the walk interval and pedestrian clearance time should be sufficient to allow a pedestrian crossing in the crosswalk who left the pedestrian detector (or, if no pedestrian detector is present, a location 6 feet behind the face of the curb or 6 feet behind the edge of the pavement) at the beginning of the WALKING PERSON (symbolizing WALK) signal indication to travel at a walking speed of 3 feet per second to the far side of the traveled way being crossed or to the median if a two-stage pedestrian crossing sequence is used. Any additional time that is required to satisfy the conditions of this paragraph should be added to the walk interval.

Option:

15 On a street with a median of sufficient width for pedestrians to wait, a pedestrian clearance time that allows the pedestrian to cross only from the curb or shoulder to the median may be provided.

Standard:

16 Where the pedestrian clearance time is sufficient only for crossing from the curb or shoulder to a median of sufficient width for pedestrians to wait, median-mounted pedestrian signals, with pedestrian detectors (see Sections 4I.05 and 4K.01) if actuated operation is used, shall be provided and signing such as the R10-3d sign (see Section 2B.58) shall be provided to notify pedestrians to cross only to the median to await the next WALKING PERSON (symbolizing WALK) signal indication.

Support:

17 Accessible pedestrian signals (see Chapter 4K) where median-mounted pedestrian signals and detectors are used provide information in non-visual formats (such as audible tones and/or speech messages, and vibrating surfaces) so that a pedestrian with vision disabilities can know when to resume crossing the street after crossing to the median.

Option:

18 During the transition into preemption, the walk interval and the pedestrian change interval may be shortened or omitted as described in Section 4F.19.

19 At intersections with high pedestrian volumes and high conflicting turning vehicle volumes, a brief leading pedestrian interval, during which an advance WALKING PERSON (symbolizing WALK) indication is displayed for the crosswalk while red indications continue to be displayed to parallel through and/or turning traffic, may be used to reduce conflicts between pedestrians and turning vehicles.

Support:

20 Accessible pedestrian signals (see Chapter 4K) where leading pedestrian intervals are used provide information in non-visual formats (such as audible tones and/or speech messages, and vibrating surfaces) so that a pedestrian with vision disabilities can know when to cross the street in the absence of the audible cues normally provided when the onset of the vehicular and pedestrian movements coincide.

21 If a leading pedestrian interval is used without accessible features, pedestrians with vision disabilities might begin crossing at the onset of the vehicular movement when vehicle operators are not expecting them to begin crossing.

Guidance:

22 If a leading pedestrian interval is used, it should be at least 3 seconds in duration and should be timed to allow pedestrians to cross at least one lane of traffic or, in the case of a large corner radius, to travel far enough for pedestrians to establish their position ahead of the turning traffic before the turning traffic is released.

23 If a leading pedestrian interval is used, consideration should be given to prohibiting turns across the crosswalk during the leading pedestrian interval.

24 At locations where a leading pedestrian interval is used, the minimum time for the WALKING PERSON (symbolizing WALK) indication should be the time provided for the leading pedestrian interval plus 7 seconds.

Support:

25 At intersections with pedestrian volumes that are so high that drivers have difficulty finding an opportunity to turn across the crosswalk, the duration of the green interval for a parallel concurrent vehicular movement is sometimes intentionally set to extend beyond the pedestrian clearance time to provide turning drivers additional green time to make their turns while the pedestrian signal head is displaying a steady UPRAISED HAND (symbolizing DONT WALK) signal indication after pedestrians have had time to complete their crossings.

PART 6
TEMPORARY TRAFFIC CONTROL

Introduction

- Refer to the "Sign Designs and Markings Manual" (SDMM) for information in addition to that included in the "Standard Highway Signs" (SHS) publication referenced in the MUTCD.
- Additional paragraphs added to the Ohio Supplement document include a number and a letter. Each new paragraph is independent of the preceding numbered paragraph. As an example, paragraph 04a is independent of paragraph 04. This also applies to Typical Applications.
- Ohio uses a State specific State Route sign/design. State Routes shall use the Ohio State Route sign/design. See the SDMM for more details.
- Ohio Revised Code 4511.051 prohibits pedestrians and bicycle use on a freeway. Mentions of pedestrians and bicycles on a freeway in Part 6 such as 6N.04 and 6N.13 are not applicable in Ohio. [4511.051]
- Ohio's Traffic Incident Management (TIM) Program, including information on training and other resources, can be found in Part 6 of the Traffic Engineering Manual (TEM) and https://www.transportation.ohio.gov/programs/otim.

CHAPTER 6A - GENERAL

Section 6A.03 TTC Devices

Guidance:

01 The design and application of TTC devices used in TTC zones should consider the needs of all road users (motorists, bicyclists, and pedestrians), including those with disabilities.

Standard:

02 Traffic control devices shall be defined as all flaggers, signs, signals, markings, channelizing devices, or other devices that use colors, shapes, symbols, words, sounds, or tactile information for the primary purpose of communicating a regulatory, warning, or guidance message to road users on a street, highway, pedestrian facility, bikeway, pathway, or site roadway open to public travel. [ORC 4511.01]

03 All traffic control devices used for construction, maintenance, utility, or incident management operations on a street, highway, pedestrian facility, bikeway, pathway, or site roadway open to public travel shall comply with the applicable provisions of this Manual.

04 All TTC devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time, TTC devices that are no longer appropriate shall be removed or covered.

CHAPTER 6B – TEMPORARY TRAFFIC CONTROL ELEMENTS

Section 6B.01 Temporary Traffic Control Plans

Support:

01 Each TTC zone is different. Many variables, such as location of work, highway type, geometrics, vertical and horizontal alignment, intersections, interchanges, road user volumes, road user mix (motorists, bicyclists, and pedestrians), road vehicle mix (buses, trucks, and cars), and road user speeds

affect the needs of each zone. The goal of TTC in work zones is safety with minimum disruption to road users. The key factor in promoting TTC zone safety is proper judgment.

02 A TTC plan describes TTC measures to be used for facilitating road users through a work zone or an incident area. TTC plans play a vital role in facilitating road user flow when a work zone, incident, or other event temporarily disrupts normal road user flow. Important auxiliary provisions that cannot conveniently be specified on project plans can easily be incorporated into Special Provisions within the TTC plan.

03 TTC plans range in scope from being very detailed to simply referencing typical drawings contained in this Manual, standard approved highway agency drawings and manuals, or specific drawings contained in the contract documents. The degree of detail in the TTC plan depends entirely on the nature and complexity of the situation.

04 During TTC activities, commercial vehicles might need to follow a different route from passenger vehicles because of bridge, weight, clearance, or geometric restrictions. Also, vehicles carrying hazardous materials might need to follow a different route from other vehicles. The Hazardous Materials and National Network signs are included in Sections 2B.67 and 2B.68, respectively.

Guidance:

05 A TTC plan should be developed for planned activities that will affect road users. A TTC plan should be developed for unplanned and emergency situations where practicable.

06 The TTC plan should start in the planning phase and continue through the design, construction, and restoration phases. The TTC plans and devices should follow the principles set forth in Part 6. The management of traffic incidents should follow the principles set forth in Chapter 6O.

07 TTC plans should be prepared by persons knowledgeable (for example, trained and/or certified) about the fundamental principles of TTC and work activities to be performed. The design, selection, and placement of TTC devices for a TTC plan should be based on engineering judgment.

08 Coordination should be made between adjacent or overlapping projects to check that duplicate signing is not used and to check compatibility of traffic control between adjacent or overlapping projects.

09 Traffic control planning should be completed for all highway construction, utility work, maintenance operations, and incident management including minor maintenance and utility projects prior to occupying the TTC zone. Planning for all road users should be included in the process.

10 For any planned special event that will have an impact on the traffic on any street or highway, a TTC plan should be developed in conjunction with and be approved by the agency or agencies that have jurisdiction over the affected roadways.

11 Provisions for effective continuity of accessible circulation paths for pedestrians should be incorporated into the TTC plan.

Option:

12 Provisions may be incorporated into the project bid documents that enable contractors to develop an alternate TTC plan.

13 Modifications of TTC plans may be necessary because of changed conditions or a determination of better methods of safely and efficiently handling road users.

Guidance:

14 This alternate or modified plan should have the approval of the responsible highway agency or owner of site roadways open to public travel prior to implementation.

15 Provisions for effective continuity of transit service should be incorporated into the TTC planning process because often public transit buses cannot efficiently be detoured in the same manner as other vehicles (particularly for short-term maintenance projects). Where applicable, the TTC plan should provide for features such as accessible temporary bus stops, pull-outs, and satisfactory waiting areas for

transit patrons, including persons with disabilities (see Section 8A.13 for additional light rail transit issues to consider for TTC).

16 Provisions for effective continuity of railroad service and acceptable access to abutting property owners and businesses should also be incorporated into the TTC planning process.

17 Reduced speed zoning (lowering the regulatory speed limit) should be avoided as much as practical because drivers will reduce their speeds only if they clearly perceive a need to do so.

18 If reduced speed limits are used, they should be used only in the specific portion of the TTC zone where conditions or restrictive features are present. However, frequent changes in the speed limit should be avoided. A TTC plan should be designed so that vehicles can travel through the TTC zone with a speed limit reduction of no more than 10 mph.

19 A reduction of more than 10 mph in the speed limit should be used only when required by restrictive features in the TTC zone. Where restrictive features justify a speed reduction of more than 10 mph, additional driver notification should be provided. The speed limit should be stepped down in advance of the location requiring the lowest speed, and additional TTC warning devices should be used.

Support:

20 Research has demonstrated that large reductions in the speed limit, such as a 30 mph reduction, increase speed variance and the potential for crashes. Smaller reductions in the speed limit of up to 10 mph cause smaller changes in speed variance and lessen the potential for increased crashes. A reduction in the regulatory speed limit of only up to 10 mph from the normal speed limit has been shown to be more effective.

20a Sections 4511.21 and 4511.98 of the ORC establish how speed limits can be reduced and Parts 6 and 12 of the ODOT "Traffic Engineering Manual" provide additional information on speeds in TTC zones. [ORC 4511.21] [ORC 4511.98]

21 Chapter 6P contains typical applications (TAs) of TTC zones that are organized according to duration, location, type of work, and highway type. Table 6P-1 is an index of these typical applications. These typical applications include the use of various TTC methods, but do not include a layout for every conceivable work situation.

22 Decisions regarding the selection of the most appropriate typical application to use as a guide for a specific TTC zone require an understanding of each situation. Although there are many ways of categorizing TTC zone applications, the typical applications illustrated in Chapter 6P are characterized by work duration, work location, work type, and highway type.

Guidance:

23 Typical applications should be altered, when necessary, to fit the conditions of a particular TTC zone.

Option:

24 Other devices may be added to supplement the devices shown in the typical applications. The sign spacings and taper lengths may be increased to provide additional time or space for driver response.

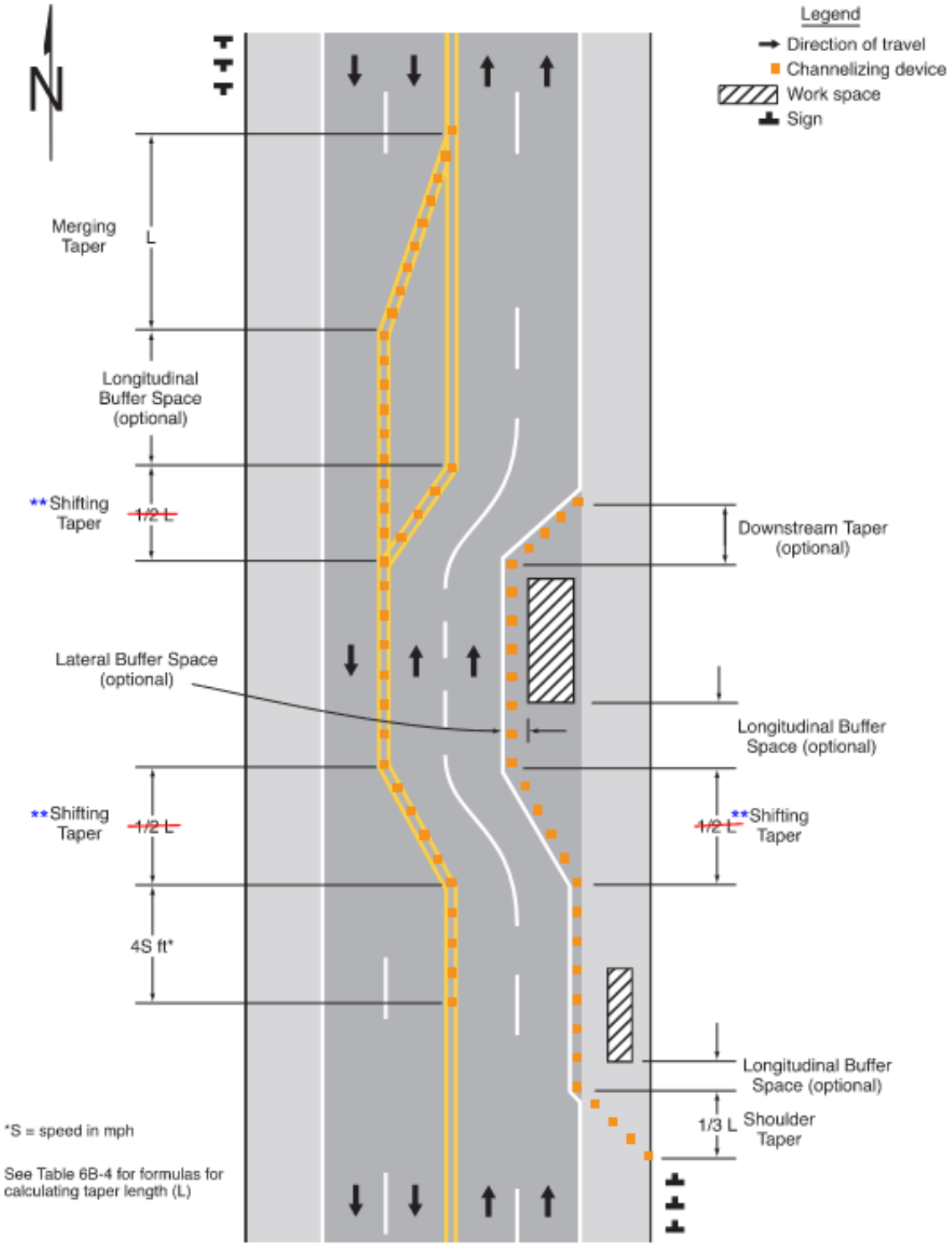
25 Devices labeled as optional in the typical applications may be deleted.

Support:

26 Formulating specific plans for TTC at traffic incidents is difficult because of the variety of situations that can arise.

27 Well-designed TTC plans for planned special events will likely be developed from a combination of treatments from several of the typical applications.

Figure 6B-2. Types of Tapers and Buffer Spaces



** A shifting taper should be L in length; however, it may be 1/2 L when the speed is less than 50 mph.

Section 6B.08 Tapers

Option:

01 Tapers may be used in both the transition and termination areas. Whenever tapers are to be used in close proximity to an interchange ramp, crossroads, curves, or other influencing factors, the length of the tapers may be adjusted.

Support:

02 Tapers are created by using a series of channelizing devices and/or pavement markings to move traffic out of or into the normal path. Types of tapers are shown in Figure 6B-2.

03 Longer tapers are not necessarily better than shorter tapers (particularly in urban areas with characteristics such as short block lengths or driveways) because extended tapers tend to encourage sluggish operation and to encourage drivers to delay lane changes unnecessarily. The test concerning adequate lengths of tapers involves observation of driver performance after TTC plans are put into effect.

Guidance:

04 The appropriate taper length (L) should be determined using the criteria shown in Tables 6B-3 and 6B-4.

Support:

05 A merging taper requires the longest distance because drivers are required to merge into common road space.

Guidance:

06 A merging taper should be long enough to enable merging drivers to have adequate advance warning and sufficient length to adjust their speeds and merge into an adjacent lane before the downstream end of the transition.

Support:

07 A shifting taper is used when a lateral shift is needed. When more space is available, a longer than minimum taper distance can be beneficial. Changes in alignment can also be accomplished by using horizontal curves designed for normal highway speeds.

Guidance:

08 Except as provided in Paragraph 08a, a~~A~~ shifting taper should have a length of approximately ~~½~~ L (see Tables 6B-3 and 6B-4).

Option:

08a Where speeds are less than 50 mph, a shifting taper may have a length of approximately ½ L (see Tables 6B-3 and 6B-4).

Support:

09 A shoulder taper might be beneficial on a high-speed roadway where shoulders are part of the activity area and are closed, or when improved shoulders might be mistaken as a driving lane. In these instances, the same type, but abbreviated, closure procedures used on a normal portion of the roadway can be used.

Guidance:

10 If used, shoulder tapers should have a length of approximately ⅓ L (see Tables 6B-3 and 6B-4). If a shoulder is used as a travel lane, either through practice or during a TTC activity, a normal merging or shifting taper should be used.

Support:

11 A downstream taper might be useful in termination areas to provide a visual cue to the driver that access is available back into the original lane or path that was closed.

Guidance:

12 If used, a downstream taper should have a minimum length of 50 feet and a maximum length of 100 feet with devices placed at a spacing of approximately 20 feet.

Support:

13 The one-lane, two-way taper is used in advance of an activity area that occupies part of a two-way roadway in such a manner that a portion of the road is used alternately by traffic in each direction.

Guidance:

14 A taper having a minimum length of 50 feet and a maximum length of 100 feet with channelizing devices at approximately 20-foot spacing should be used to guide traffic into the one-lane section, and a downstream taper should be used to guide traffic back into their original lane.

Support:

15 An example of a one-lane, two-way traffic taper is shown in Figure 6B-3.

Table 6B-3. Taper Length Criteria for Temporary Traffic Control Zones

Type of Taper	Taper Length
Merging Taper	at least L
Shifting Taper	L; however, may be at least 0.5 L when speed is less than 50 mph
Shoulder Taper	at least 0.33 L
One Lane, Two-Way Traffic Taper	50 feet minimum, 100 feet maximum
Downstream Taper	50 feet minimum, 100 feet maximum

Note: Use Table 6B-4 to calculate L

Chapter 6G – TTC Zone Regulatory Signs

Section 6G.04 Road Closed Signs (R11-2 Series and R11-H4a)

Guidance:

01 The ROAD CLOSED (R11-2) sign (see Figure 6G-1) should be used when the roadway is closed to all road users except contractors' equipment or officially authorized vehicles. The R11-2 sign should be accompanied by appropriate warning and detour signing.

Option:

02 STREET CLOSED (R11-2a), BRIDGE OUT (R11-2b), or PATH CLOSED (R11-2c) signs may be substituted for Road Closed signs where applicable.

Guidance:

03 Road Closed signs should be installed at or near the center of the roadway on or above a Type 3 Barricade that closes the roadway (see Section 6K.07).

Standard:

04 Road Closed signs shall not be used where road user flow is maintained through the TTC zone with a reduced number of lanes on the existing roadway or where the actual closure is some distance beyond the sign.

Guidance:

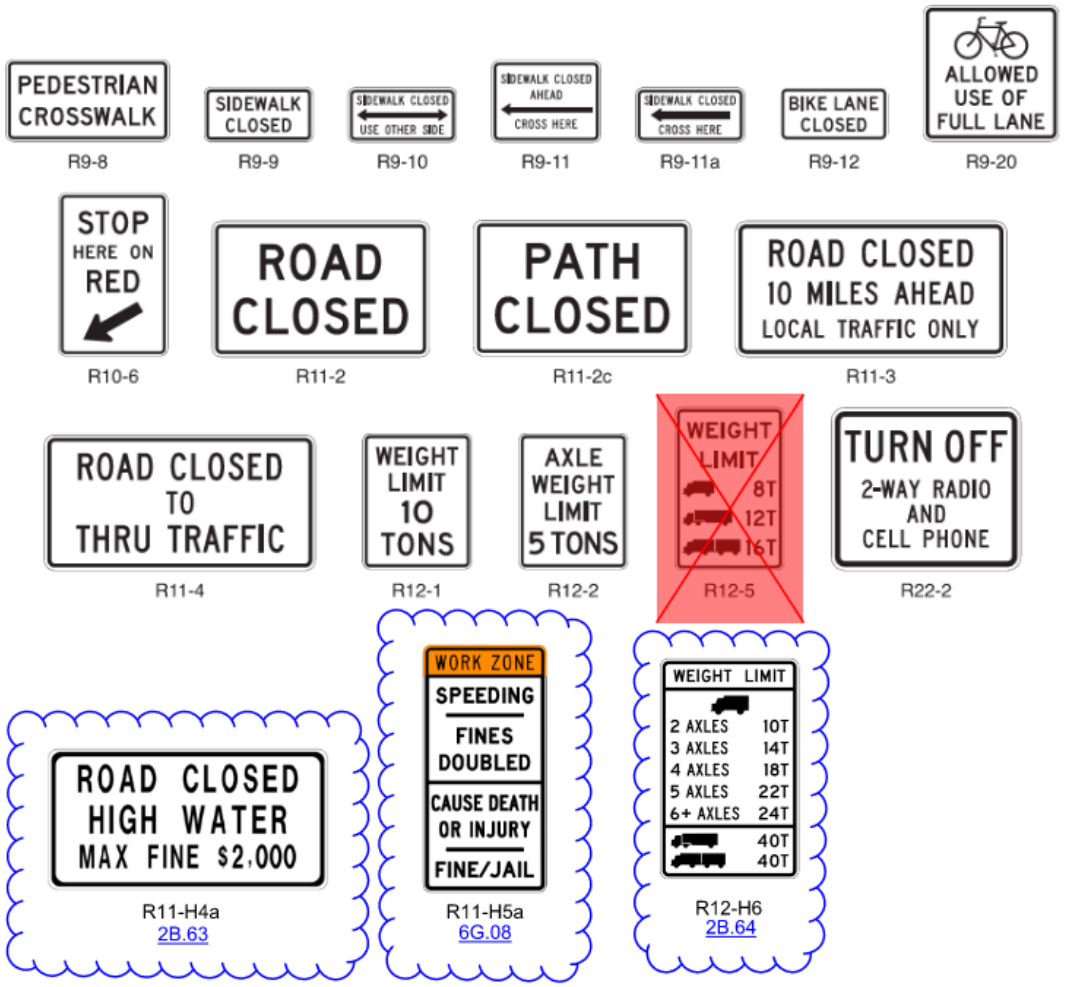
04a Based on ORC 4511.714, when a determination has been made to close a road in response to high water conditions, the ROAD CLOSED HIGH WATER MAX FINE $2000 (R11-H4a) sign should be installed. [ORC 4511.714]

04b For temporary traffic control due to high water, see Chapter 6O and Section 2B.63.

Figure 6G-1. Regulatory Signs and Plaques in Temporary Traffic Control Zones
(Sheet 1 of 2)

Note: See Chapter 2B for information on the application of these signs.
For Ohio Specific Signs see section reference for application of these signs.

Figure 6G-1. Regulatory Signs and Plaques in Temporary Traffic Control Zones
(Sheet 2 of 2)



Note: See Chapter 2B for information on the application of these signs.
For Ohio Specific Signs see section reference for application of these signs.

Section 6G.06 Weight Limit Signs (R12-1, R12-2, and ~~R12-5~~ R12-H6)

Standard:

01 A Weight Limit sign (see Figure 6G-1), which shows the gross weight or axle weight that is permitted on the roadway or bridge, shall be consistent with State or local regulations and shall not be installed without the approval of the authority having jurisdiction over the highway.

02 When weight restrictions are imposed because of the activity in a TTC zone, a marked detour shall be provided for vehicles weighing more than the posted limit.

Section 6G.08 Work Zone and Higher Fines Signs and Plaques

Option:

01 A WORK ZONE (G20-5aP) plaque (see Figure 6G-1) may be mounted above a Speed Limit sign to emphasize that a reduced speed limit is in effect within a TTC zone. An END WORK ZONE SPEED

LIMIT (R2-12) sign (see Figure 6G-1) may be installed at the downstream end of the reduced speed limit zone.

Guidance:

02 A BEGIN HIGHER FINES ZONE (R2-10) sign (see Figure 6G-1) should be installed at or near the beginning of a TTC zone where increased fines are imposed for traffic violations, and an END HIGHER FINES ZONE (R2-11) sign (see Figure 6G-1) should be installed at or near the downstream end of the TTC zone.

Support:

02a See 6G.08, P05a through P05d for Ohio specific higher fines sign information for TTC zone use on State, County, and Township routes.

Option:

03 Alternate legends such as BEGIN (or END) DOUBLE FINES ZONE may also be used for the R2-10 and R2-11 signs.

04 A FINES HIGHER, FINES DOUBLE, or $XX FINE plaque (see Section 2B.25 and Figure 6G-1) may be mounted below the Speed Limit sign if increased fines are imposed for traffic violations within the TTC zone.

05 Individual signs and plaques for work zone speed limits and higher fines may be combined into a single sign or may be displayed as an assembly of signs and plaques.

Support:

05a ORC Section 5501.27(A)(1) requires that the Director of Transportation "adopt rules governing the posting of signs advising motorists that increased penalties apply for certain traffic violations on streets or highways in a construction zone." Also, ORC Section 5501.27(A)(2) requires that the Director adopt "rules governing the posting of signs to be used pursuant to section 2903.081 of the Revised Code giving notice to motorists of the prohibitions set forth in sections 2903.06 and 2903.08 of the Revised Code regarding the death of or injury to any person in a construction zone as a proximate result of a reckless operation offense or speeding offense." [ORC 2903.06] [ORC 2903.08] [ORC 2903.081] [ORC 5501.27]

Standard:

05b In accordance with ORC Section 4511.98, the "director of transportation, board of county commissioners, or board of township trustees shall cause signs to be erected advising motorists that increased penalties apply for certain traffic violations occurring on streets or highways in a construction zone. The increased penalties shall be effective only when signs are erected in accordance with the guidelines and design specifications established by the director under section 5501.27 of the Revised Code, and when a violation occurs during hours of actual work within the construction zone." [ORC 4511.98] [ORC 5501.27]

05c The Work Zone Increased Penalties (R11-H5a) sign shall be used to meet requirements described in Paragraph 05b of this section.

Support:

05d The guidelines established by the Director are in Part 6 of the ODOT Traffic Engineering Manual (TEM) and in Chapter 5501:2-10 of the Ohio Administrative Code (OAC). Administrative Code Section 5501:2-10-02 also requires that each agency adopt procedures pertaining to requiring a contractor, work crew, or utility to erect, maintain, and remove signs, in conformance with these guidelines. [OAC 5501:2-10]

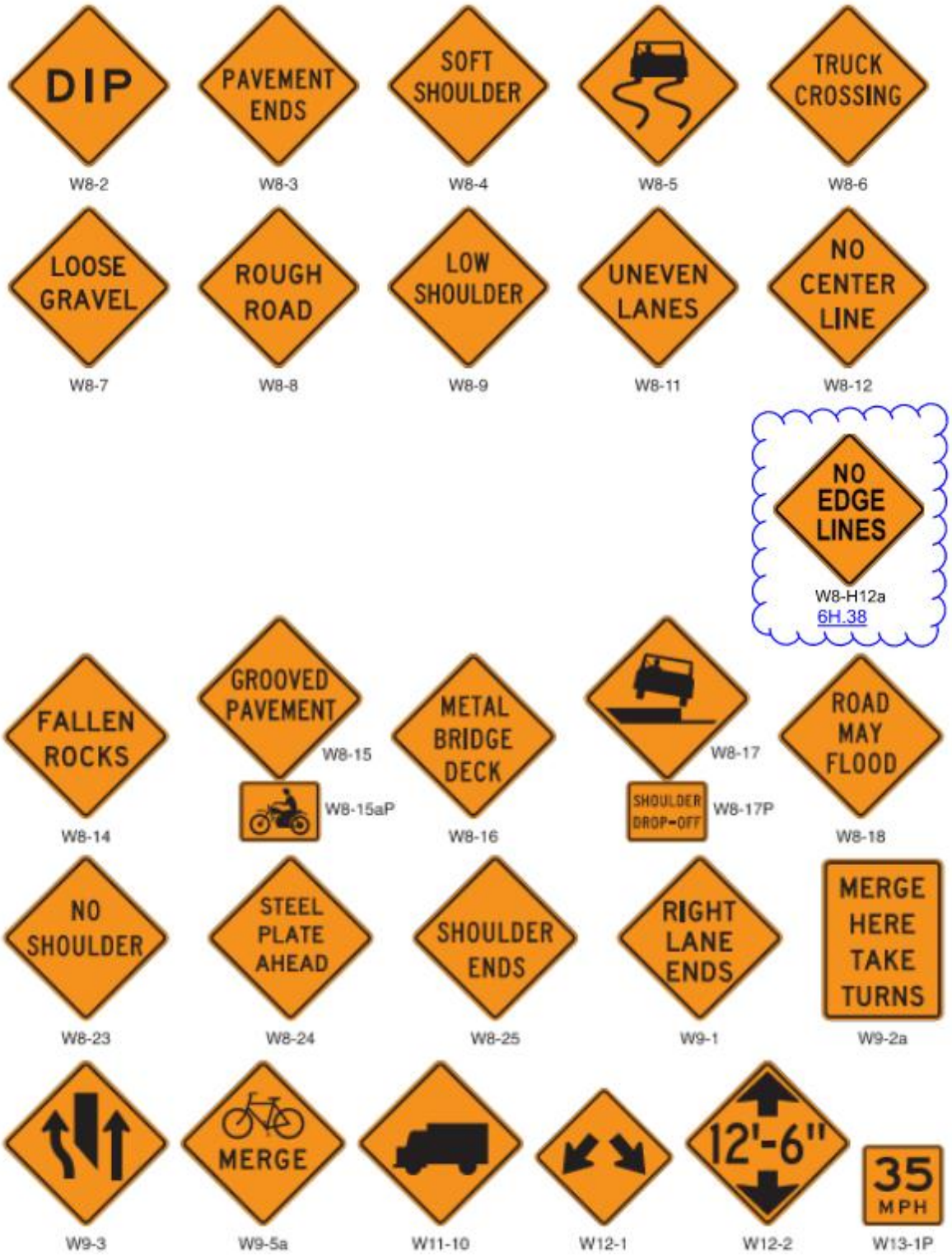
Chapter 6H – TTC Zone Warning Signs

Figure 6H-1. Warning Signs and Plaques in Temporary Traffic Control Zones (Sheet 1 of 4)

Note: See Chapter 2C for information on the application of these signs.

For Ohio Specific Signs see section reference for application of these signs.

Figure 6H-1. Warning Signs and Plaques in Temporary Traffic Control Zones (Sheet 2 of 4)



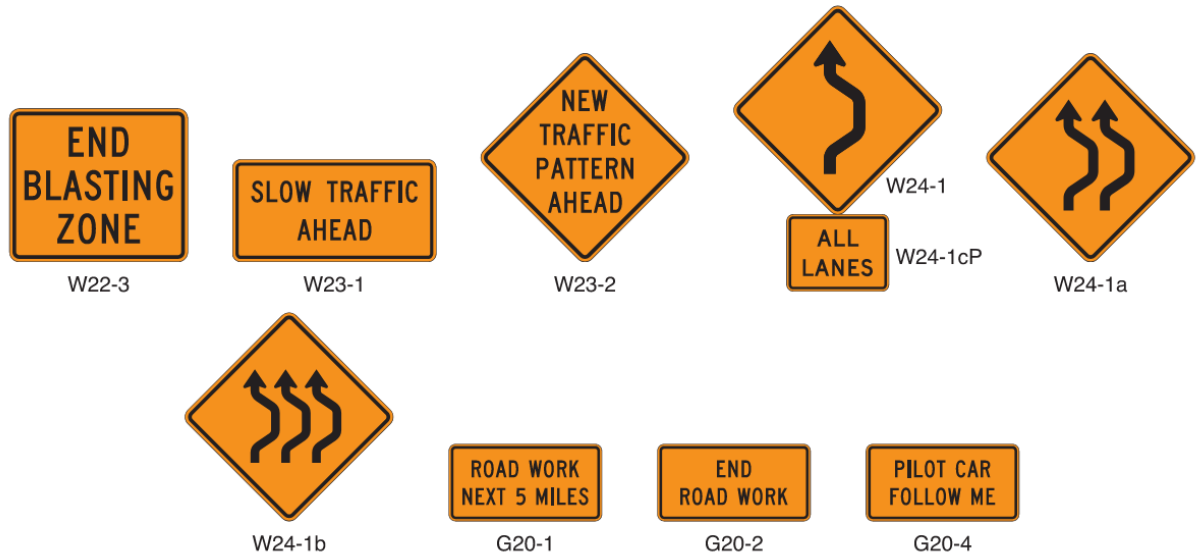
Note: See Chapter 2C for information on the application of these signs.
For Ohio Specific Signs see section reference for application of these signs.

Figure 6H-1. Warning Signs and Plaques in Temporary Traffic Control Zones (Sheet 3 of 4)

Note: See Chapter 2C for information on the application of these signs.
For Ohio Specific Signs see section reference for application of these signs.

* An optional STREET WORK word message sign is shown in the "Standard Highway Signs" publication.
** An optional STREET CLOSED word message sign is shown in the "Standard Highway Signs" publication.
*** An optional FLAGGER (W20-7a) word message sign is shown in the "Standard Highway Signs" publication.
**** An optional FRESH TAR word message sign is shown in the "Standard Highway Signs" publication.

Figure 6H-1. Warning Signs and Plaques in Temporary Traffic Control Zones (Sheet 4 of 4)



Note: See Chapter 2C for information on the application of these signs.
For Ohio Specific Signs see section reference for application of these signs.

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.

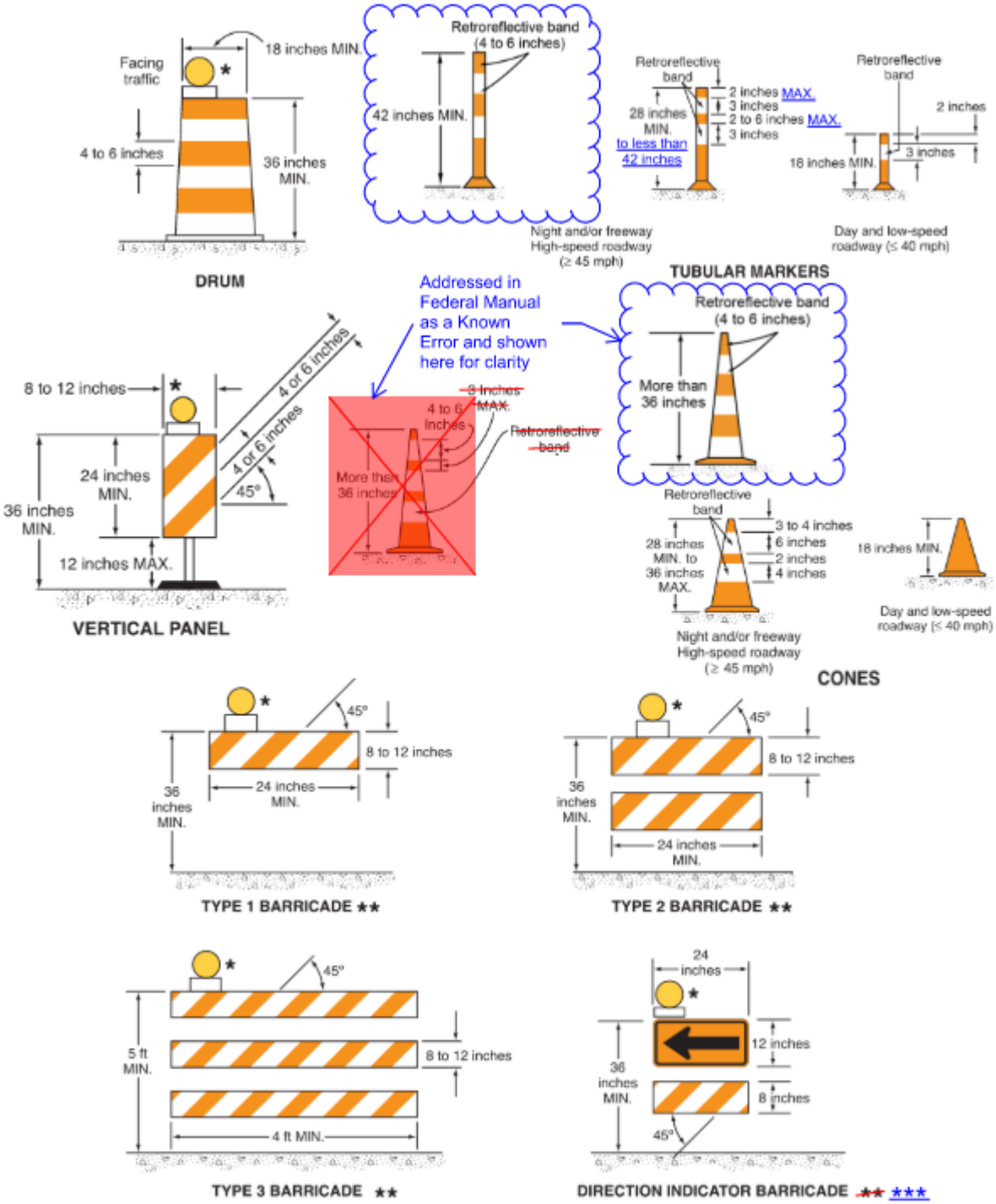
06a The NO EDGE LINES sign (W8-H12a) should be used when the work obliterates the edge line pavement markings. The sign should be placed at the beginning of the TTC zone and repeated at 2-mile intervals in long TTC zones.

Support:

06b Section 6J.02 contains information regarding temporary markings.

Chapter 6K – TTC Zone Channelizing Devices

Figure 6K-1. Examples of Channelizing Devices



* Warning lights (optional)

** Rail stripe widths shall be 6 inches, except that 4-inch wide stripes may be used if rail lengths are less than 36 inches. The sides of barricades facing traffic shall have retroreflective rail faces.

*** Rail stripe widths shall be 4 inches. The sides of barricades facing traffic shall have retroreflective rail faces.

Chapter 6O – Control of Traffic Through Traffic Incident Management Areas

Section 6O.02 Major Traffic Incidents

Support:

01 Major traffic incidents are typically traffic incidents involving hazardous materials, fatal traffic crashes involving numerous vehicles, and other natural or man-made disasters. These traffic incidents typically involve closing all or part of a roadway facility for a period exceeding 2 hours.

Guidance:

02 If the traffic incident is anticipated to last more than 24 hours, applicable procedures and devices set forth in other Chapters of Part 6 should be used.

02a For guidance on the use of regulatory signs due to high water, see Section 6G.04 and Section 2B.63.

Support:

03 A road closure can be caused by a traffic incident such as a road user crash that blocks the traveled way. Road users are usually diverted through lane shifts or detoured around the traffic incident and back to the original roadway. A combination of traffic engineering and enforcement preparations is needed to determine the detour route, and to install, maintain, or operate, and then to remove the necessary traffic control devices when the detour is terminated. Large trucks are a significant concern in such a detour, especially when detouring them from a controlled-access roadway onto local or arterial streets.

04 During traffic incidents, large trucks might need to follow a route separate from that of automobiles because of bridge, weight, clearance, or geometric restrictions. Also, vehicles carrying hazardous material might need to follow a different route from other vehicles.

05 Some traffic incidents such as hazardous material spills might require closure of an entire highway. Through road users must have adequate guidance around the traffic incident. Maintaining good public relations is desirable. The cooperation of the news media in publicizing the existence of, and reasons for, traffic incident management areas and their TTC can be of great assistance in keeping road users and the general public well informed.

Chapter 6P – Typical Applications

Table 6P-1. Index to Typical Applications (Sheet 1 of 2)

	Typical Application Description	Typical Application Number
	Work Outside of the Shoulder (see Section 6N.05)	
	Work Beyond the Shoulder	TA-1
	Blasting Zone	TA-2
	Work on the Shoulder (see Sections 6N.06 and 6N.07)	
	Work on the Shoulders	TA-3
	Short-Duration or Mobile Operation on a Shoulder	TA-4
	Shoulder Closure on a Freeway	TA-5
	Shoulder Work with Minor Encroachment	TA-6
	Work within the Traveled Way of a Two-Lane Highway (see Section 6N.09)	
	Road ~~Closed~~ Closure with a Diversion	TA-7
*	Road~~s Closed~~ Closure with an Off-Site Detour	TA-8
	Overlapping Routes with a Detour	TA-9
	Lane Closure on a Two-Lane Road Using Flaggers	TA-10
	Lane Closure on a Two-Lane Road with Low Traffic Volumes	TA-11
	Lane Closure on a Two-Lane Road Using Temporary Traffic Control Signals	TA-12
	Temporary Road Closure	TA-13
	Haul Road Crossing	TA-14
*	Work in the Center of a Road with Low Traffic Volumes	TA-15
	Surveying Along the Center Line of a Road with Low Traffic Volumes	TA-16
	Mobile Operations on a Two-Lane Road	TA-17
	Work within the Traveled Way of an Urban Street (see Section 6N.10)	
	Lane Closure on a Minor Street	TA-18
	Detour for One Travel Direction	TA-19
	Detour for a Closed Street	TA-20
	Work within the Traveled Way at an Intersection and on Sidewalks (see Section 6N.12)	
	Lane Closure on the Near Side of an Intersection	TA-21
	Right-Hand Lane Closure on the Far Side of an Intersection	TA-22
	Left-Hand Lane Closure on the Far Side of an Intersection	TA-23
*	Half Road Closure on the Far Side of an Intersection	TA-24
*	Multiple Lane Closures at an Intersection	TA-25
*	Closure in the Center of an Intersection	TA-26
	Closure at the Side of an Intersection	TA-27
	Sidewalk Detour or Diversion	TA-28
	Crosswalk Closures and Pedestrian Detours	TA-29
	Work within the Traveled Way of a Multi-Lane, Non-Access Controlled Highway (see Section 6N.11)	
	Interior Lane Closure on a Multi-Lane Street	TA-30
*	Lane Closure on a Street with Uneven Directional Volumes	TA-31
*	Half Road Closure on a Multi-Lane, High-Speed Highway	TA-32
	Stationary Lane Closure on a Divided Highway	TA-33
	Lane Closure with a Temporary Traffic Barrier	TA-34
	Mobile Operation on a Multi-Lane Road	TA-35

* Typical Application part of Ohio Supplement to the MUTCD

Table 6P-1. Index to Typical Applications (Sheet 2 of 2)

	Typical Application Description	Typical Application Number
	Work within the Traveled Way of a Freeway or Expressway (see Section 6N.13)	
*	Lane Shift on a Freeway	TA-36
	Double Lane Closure on a Freeway	TA-37
*	Interior Lane Closure on a Freeway	TA-38
*	Median Crossover on a Freeway	TA-39
	Median Crossover for an Entrance Ramp	TA-40
*	Median Crossover for an Exit Ramp	TA-41
	Work in the Vicinity of an Exit Ramp	TA-42
	Partial Exit Ramp Closure	TA-43
	Work in the Vicinity of an Entrance Ramp	TA-44
*	Temporary Reversible Lane Using Movable Barriers	TA-45
	Work in the Vicinity of a Grade Crossing (see Section 6N.17)	
	Work in the Vicinity of a Grade Crossing	TA-46
	Work in the Vicinity of Bicycle Lanes and Shared Use Paths (see Section 6N.04)	
	Bicycle Lane Closure without a Detour	TA-47
	Bicycle Lane Closure with an On-Road Detour	TA-48
	Shared-Use Path Closure with a Diversion	TA-49
	On-Road Detour for a Shared-Use Path	TA-50
	Paved Shoulder Closure with a Bicycle Diversion onto a Temporary Path	TA-51
	Work in the Traveled Way of Roundabouts	
	Short-Term or Short-Duration Work in a Circular Intersection	TA-52
	Flagging Operation on a Single-Lane Circular Intersection	TA-53
	Inside Lane Closure on a Multi-Lane Circular Intersection	TA-54

* Typical Application part of Ohio Supplement to the MUTCD

Notes for Figure 6P-8 – Typical Application 8

Roads Closed with an Off-Site Detour

Guidance:

1. *Regulatory traffic control devices should be modified as needed for the duration of the detour.*

1a. *If the road is opened for some distance beyond the intersection and/or there are significant origin/destination points beyond the intersection, the ROAD CLOSED and DETOUR signs on Type 3 Barricades should be located at the edge of the traveled way.*

Option:

~~2. If the road is opened for some distance beyond the intersection and/or there are significant origin/destination points beyond the intersection, the ROAD CLOSED and DETOUR signs on Type 3 Barricades may be located at the edge of the traveled way.~~

2a. If the road is closed a short distance beyond the intersection and there are few origin/destination points beyond (for example, a few residences), the Type 3 Barricades shown in the typical application may be moved to the center of the traveled lanes.

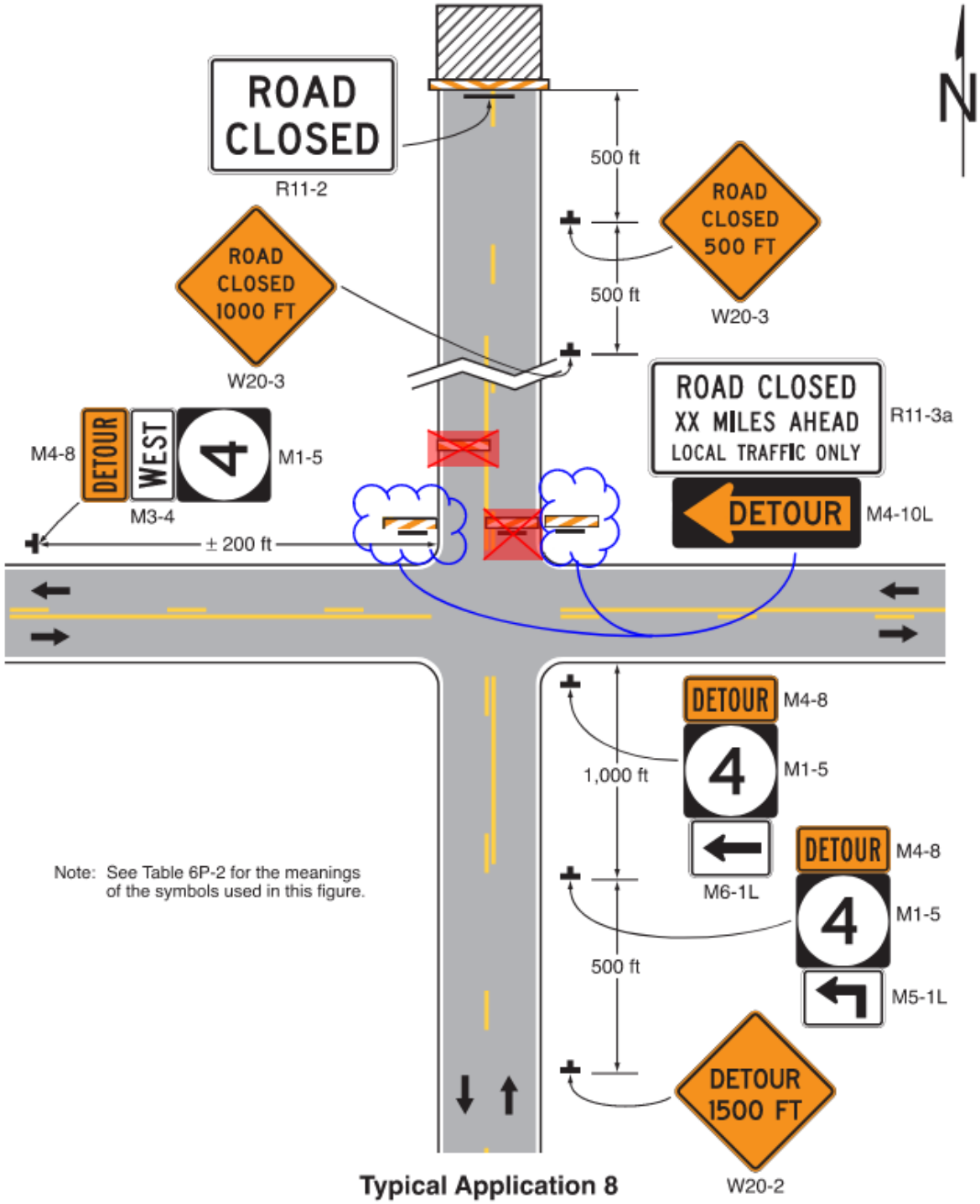
Standard:

2b. If the barricades are located as in Note 2a above, the ROAD CLOSED and DETOUR signs shall be placed only on the barricade centered in the lane of travel of traffic approaching the closure. The barricade centered in the lane of travel of departing traffic shall not be signed. The barricades in adjacent lanes shall be offset longitudinally from each other an adequate distance in order to permit traffic to travel around the barricades (the barricade in the road user's lane located in advance of the barricade located left of the center line).

Option:

3. A Route Sign Directional assembly may be placed on the far left corner of the intersection to augment or replace the one shown on the near right corner.
4. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
5. Cardinal direction plaques may be used with route signs.

Figure 6P-8 - Roads Closed with an Off-Site Detour



Notes for Figure 6P-15 – Typical Application 15

Work in the Center of a Road with Low Traffic Volumes

Guidance:

1. *The lanes on either side of the center work space should have a minimum width of 10 feet as measured from the near edge of the channelizing devices to the edge of the pavement or the outside edge of the paved shoulder.*

1a. *Except as provided in Note 1b, the shifting taper should have a length of approximately L (see Tables 6B-3 and 6B-4).*

Option:

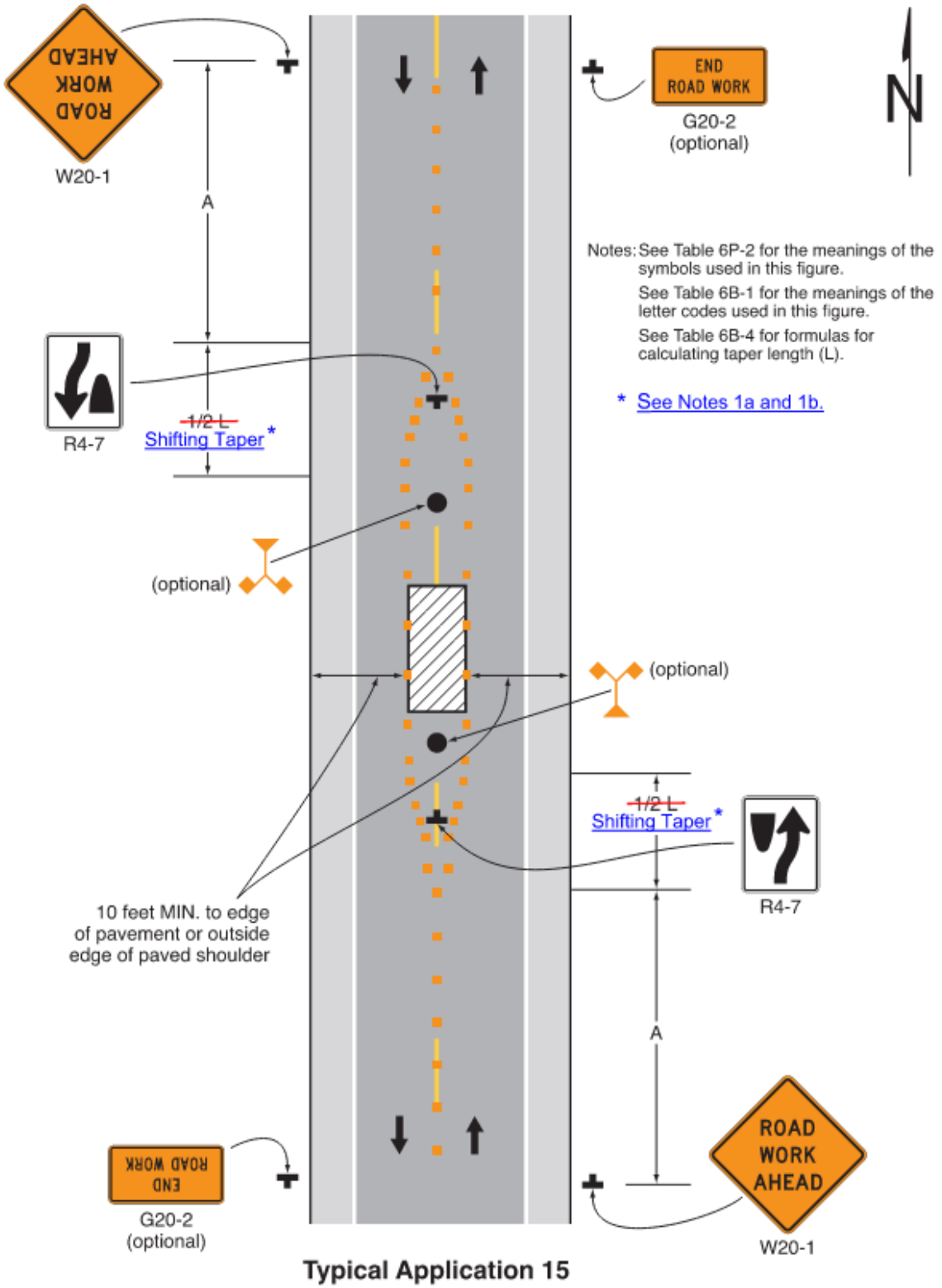
1b. Where speeds are less than 50 mph, the shifting taper may have a length of approximately ½ L (see Tables 6B-3 and 6B-4).

2. Positive protection devices may be used per Section 6M.02.
3. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
4. If the closure continues overnight, warning lights may be used on the channelizing devices.
5. A lane width of 9 feet may be used for short-term stationary work on low-volume, low-speed roadways when motor vehicle traffic does not include longer and wider heavy commercial vehicles.
6. A work vehicle displaying high-intensity rotating, flashing, oscillating, or strobe lights may be used instead of the channelizing devices forming the tapers or the high-level warning devices.
7. Vehicle hazard warning signals may be used to supplement high-intensity rotating, flashing, oscillating, or strobe lights.

Standard:

8. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.**

Figure 6P-15. Work in the Center of a Road with Low Traffic Volumes



Typical Application 15

Notes for Figure 6P-24 – Typical Application 24

Half Road Closure on the Far Side of an Intersection

Guidance:

1. *If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure 6P-29.*
2. *When turn prohibitions are implemented, two turn prohibition signs should be used, one on the near side and, space permitting, one on the far side of the intersection.*

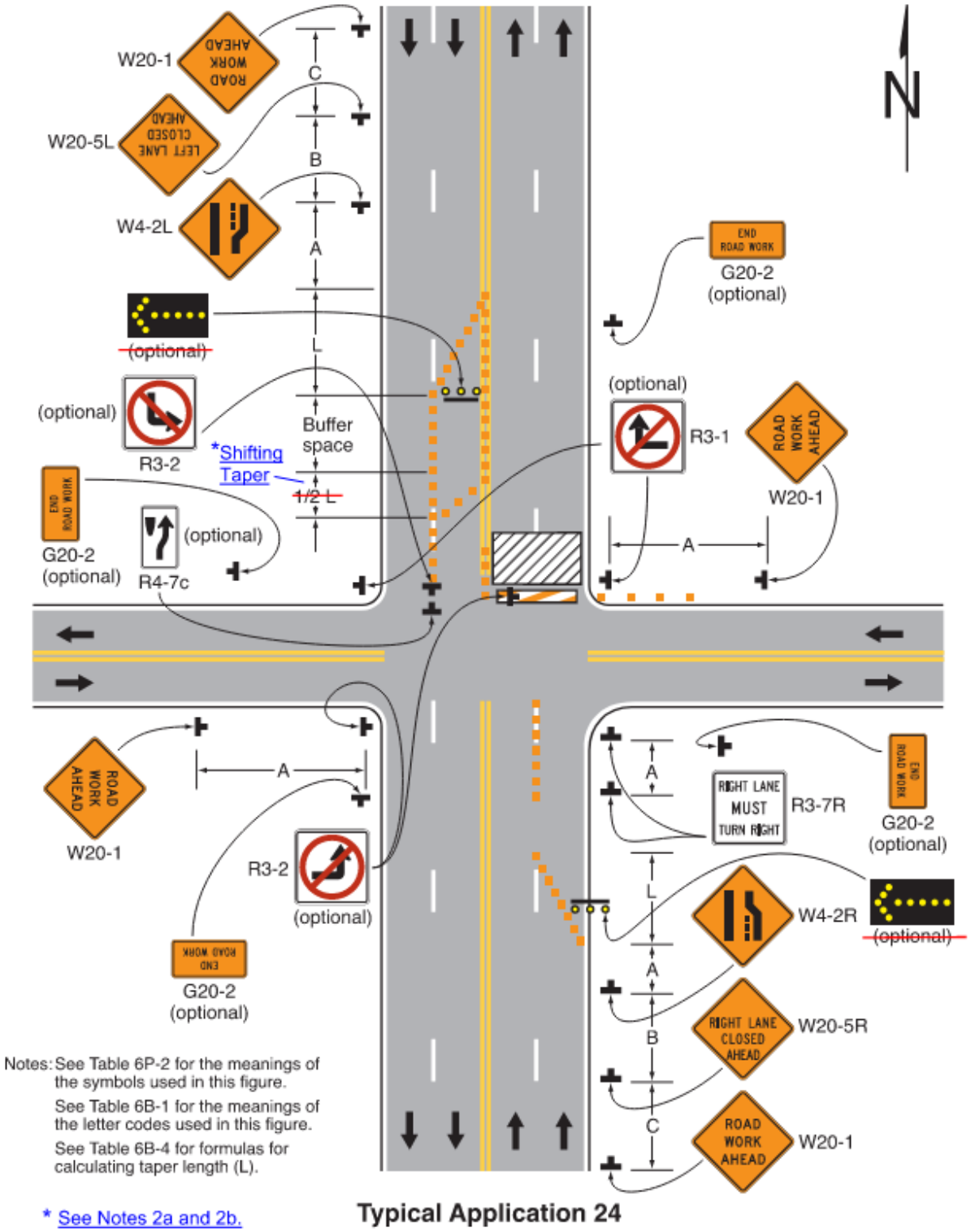
2a. *Except as provided in Note 2b, the shifting taper should have a length of approximately L (see Tables 6B-3 and 6B-4).*

Option:

2b. Where speeds are less than 50 mph, the shifting taper may have a length of approximately ½ L (see Tables 6B-3 and 6B-4).

3. Positive protection devices may be used per Section 6M.02.
4. A buffer space may be used between opposing directions of vehicular traffic as shown in this application.
5. When the normal procedure of closing on the near side of the intersection any lane that is not carried through the intersection results in the closure of a right-hand lane having significant right-turn movements, then the right-hand lane may be restricted to right turns only, requiring through traffic to use the left lane.
6. Where the turning radius is large, a right-turn island using channelizing devices or pavement markings may be used.
7. If there is insufficient space to place the back-to-back Keep Right sign and No Left Turn symbol signs at the end of the row of channelizing devices separating opposing vehicular traffic flows, the No Left Turn symbol sign may be placed on the right and the Keep Right sign may be omitted.
8. For intersection approaches reduced to a single lane, left-turn movements may be prohibited to maintain capacity for through vehicular traffic.
9. Flashing warning lights and/or flags may be used to call attention to advance warning signs.
10. Temporary pavement markings may be used to delineate the travel path through the intersection.
11. If dimension “A” is not available to create a temporary right-turn lane, continuous channelizers may be installed from the end of the taper to the intersection and, as a result, the RIGHT LANE MUST TURN RIGHT signs would not be installed.

Figure 6P-24. Half Road Closure on the Far Side of an Intersection



Notes: See Table 6P-2 for the meanings of the symbols used in this figure.
See Table 6B-1 for the meanings of the letter codes used in this figure.
See Table 6B-4 for formulas for calculating taper length (L).

* See Notes 2a and 2b.

Typical Application 24

Notes for Figure 6P-25 – Typical Application 25

Multiple Lane Closures at an Intersection

Guidance:

1. *If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure 6P-29.*

1a. *Except as provided in Note 1b, the shifting taper should have a length of approximately L (see Tables 6B-3 and 6B-4).*

Option:

1b. Where speeds are less than 50 mph, the shifting taper may have a length of approximately ½ L (see Tables 6B-3 and 6B-4).

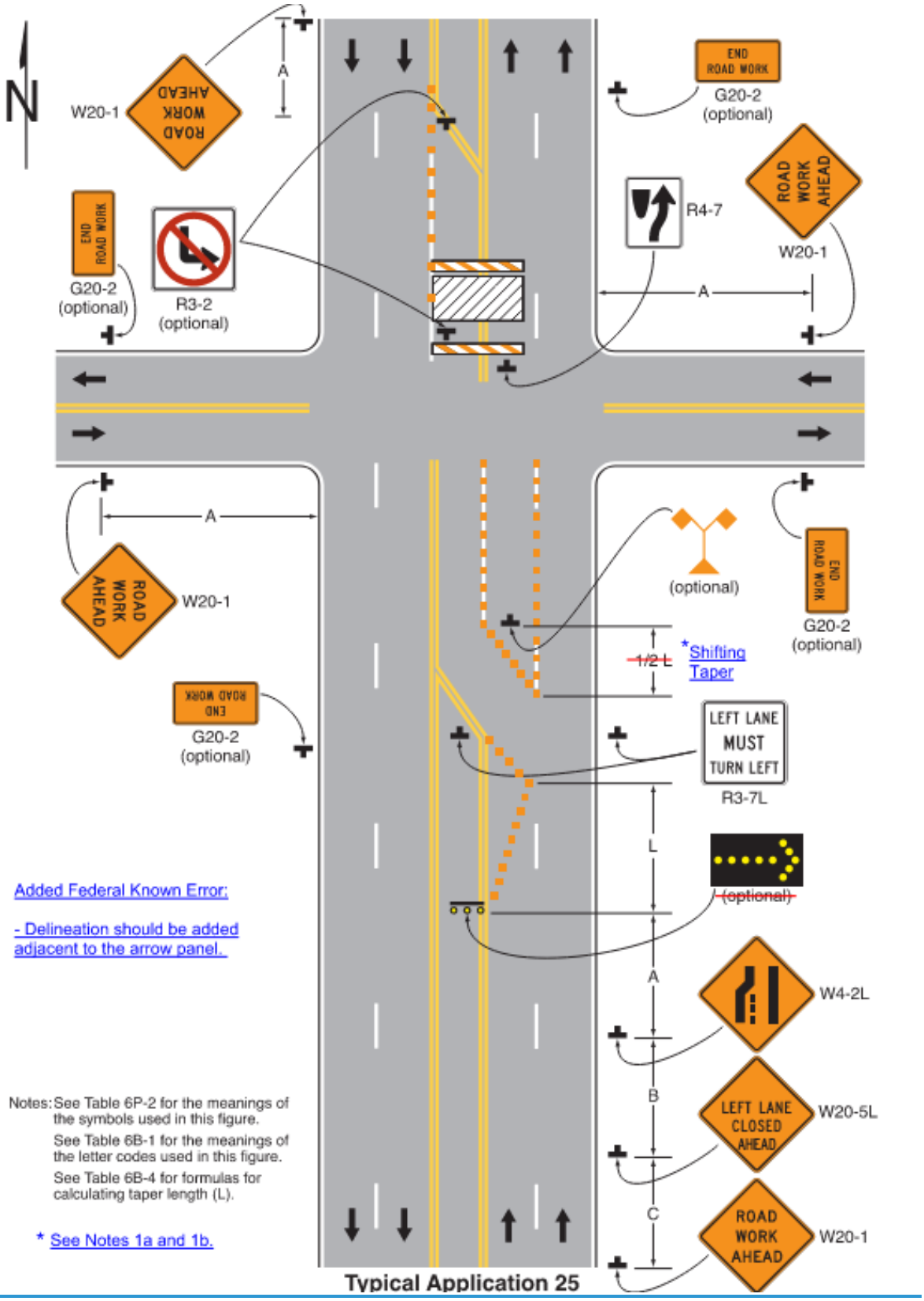
Support:

2. The normal procedure is to close on the near side of the intersection any lane that is not carried through the intersection, as shown.

Option:

3. Positive protection devices may be used per Section 6M.02.
4. If the left-turn movement that normally uses the closed turn bay is small and/or the gaps in opposing vehicular traffic are frequent, left turns may be permitted on that approach.
5. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

Figure 6P-25. Multiple Lane Closures at an Intersection



Notes for Figure 6P-26 – Typical Application 26

Closure in the Center of an Intersection

Guidance:

1. *All lanes should be a minimum of 10 feet in width as measured to the near face of the channelizing devices.*

1a. *Except as provided in Note 1b, the shifting taper should have a length of approximately L (see Tables 6B-3 and 6B-4).*

Option:

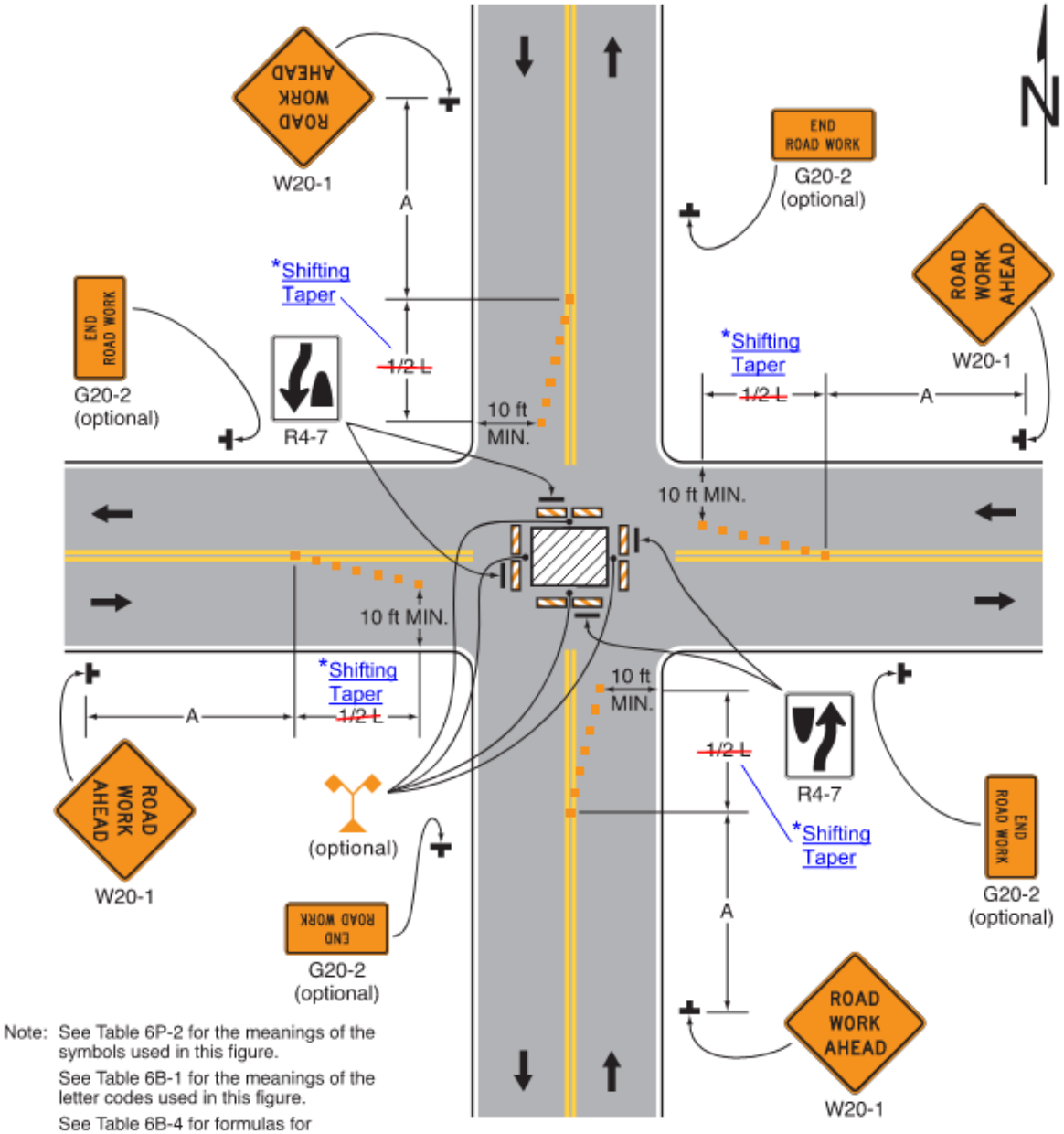
1b. Where speeds are less than 50 mph, the shifting taper may have a length of approximately ½ L (see Tables 6B-3 and 6B-4).

2. A high-level warning device may be placed in the work space, if there is sufficient room.
3. For short-term use on low-volume, low-speed roadways with vehicular traffic that does not include longer and wider heavy commercial vehicles, a minimum lane width of 9 feet may be used.
4. Flashing warning lights and/or flags may be used to call attention to advance warning signs.
5. Left turns may be prohibited as required by geometric conditions, such as where the streets are so narrow that it might be physically impossible to turn left, especially for large vehicles.
6. For short-duration work operations, the channelizing devices may be eliminated if a vehicle displaying high-intensity rotating, flashing, oscillating, or strobe lights is positioned in the work space.
7. Vehicle hazard warning signals may be used to supplement high-intensity rotating, flashing, oscillating, or strobe lights.

Standard:

8. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.**

Figure 6P-26. Closure in the Center of an Intersection



Note: See Table 6P-2 for the meanings of the symbols used in this figure.
See Table 6B-1 for the meanings of the letter codes used in this figure.
See Table 6B-4 for formulas for calculating taper length (L).

* See Notes 1a and 1b.

Typical Application 26

Notes for Figure 6P-31 – Typical Applications 31

Lane Closure on a Street with Uneven Directional Volumes

Standard:

1. **The illustrated information shall be used only when the vehicular traffic volume indicates that two lanes of vehicular traffic shall be maintained in the direction of travel for which one lane is closed.**

Option:

2. The procedure may be used during a peak period of vehicular traffic and then changed to provide two lanes in the other direction for the other peak.

Guidance:

3. *For high speeds, a LEFT LANE CLOSED XX FT sign should be added for vehicular traffic approaching the lane closure, as shown in Figure 6P-32.*

3a. *Except as provided in Note 3b, the shifting taper should have a length of approximately L (see Tables 6B-3 and 6B-4).*

Option:

3b. Where speeds are less than 50 mph, the shifting taper may have a length of approximately ½ L (see Tables 6B-3 and 6B-4).

Guidance:

4. *Conflicting pavement markings should be removed for long-term projects. For short-term and intermediate-term projects where this is impracticable, the channelizing devices in the area where the pavement markings conflict should be placed at a maximum spacing of ½ S feet where S is the speed in mph. Temporary markings should be installed where needed.*
5. *If the lane shift has curves with recommended speeds of 30 mph or less, Reverse Turn signs should be used.*
6. *Where the shifted section is long, a Reverse Curve sign should be used to show the initial shift and a second sign should be used to show the return to the normal alignment.*
7. *If the tangent distance along the temporary diversion is less than 600 feet, the Double Reverse Curve sign should be used at the location of the first Two Lane Reverse Curve sign. The second Two Lane Reverse Curve sign should be omitted.*

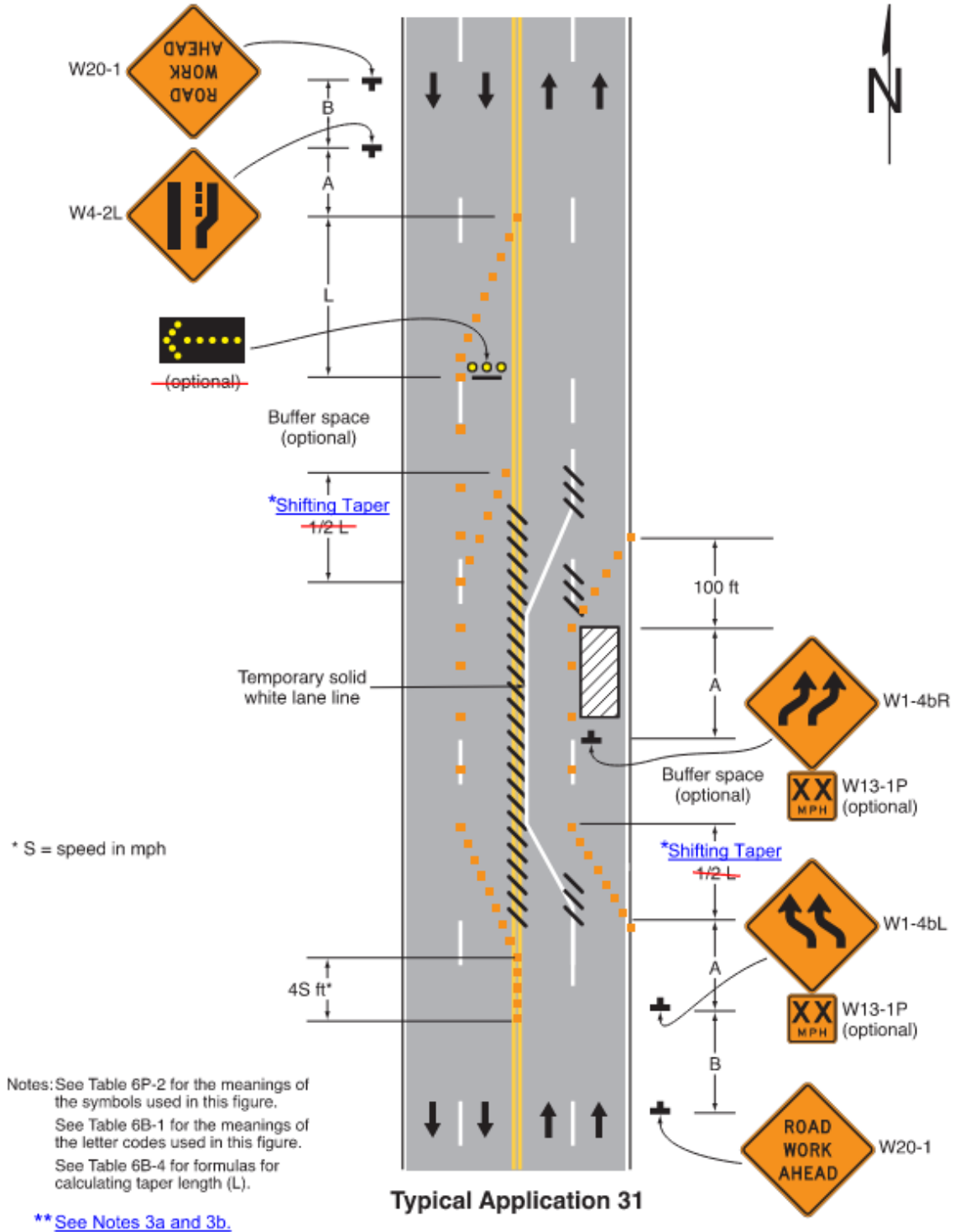
Standard:

8. **Except as provided in Note 11 below, the number of lanes illustrated on the Reverse Curve or Double Reverse Curve signs shall be the same as the number of through lanes available to road users, and the direction of the reverse curves shall be appropriately illustrated.**

Option:

9. Positive protection devices may be used per Section 6M.02.
10. A longitudinal buffer space may be used in the activity area to separate opposing vehicular traffic.
11. Where two or more lanes are being shifted, a Reverse Curve (or Reverse Turn) sign with an ALL LANES plaque (see Figure 6H-1) may be used instead of a sign that illustrates the number of lanes.
12. Where more than three lanes are being shifted, the Reverse Curve (or Turn) sign may be rectangular.
13. A work vehicle or a shadow vehicle may be equipped with a truck-mounted attenuator.

Figure 6P-31. Lane Closure on a Street with Uneven Directional Volumes



Typical Application 31

Notes for Figure 6P-32 – Typical Application 32

Half Road Closure on a Multi-Lane, High-Speed Highway

Standard:

1. **Pavement markings no longer applicable shall be removed or obliterated as soon as practical. Except for intermediate-term and short-term situations, temporary markings shall be provided to clearly delineate the temporary travel path. For short-term and intermediate-term situations where it is not feasible to remove and restore pavement markings, channelization shall be made dominant by using a very close device spacing.**

Guidance:

1a. Except as provided in Note 1b, the shifting taper should have a length of approximately L (see Tables 6B-3 and 6B-4).

Option:

1b. Where speeds are less than 50 mph, the shifting taper may have a length of approximately ½ L (see Tables 6B-3 and 6B-4).

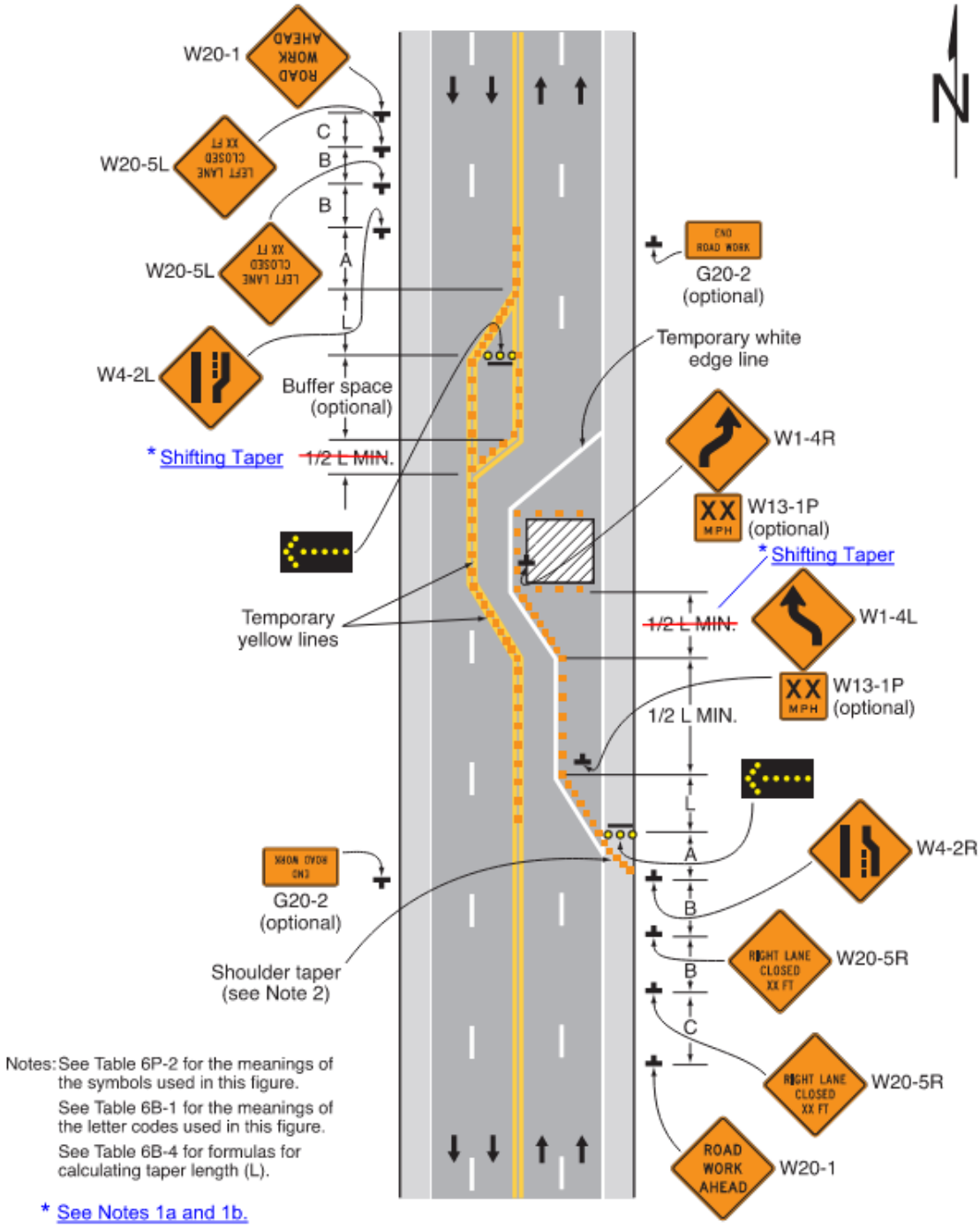
Guidance:

2. *When paved shoulders having a width of 8 feet or more are closed, channelizing devices should be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.*
3. *Where channelizing devices are used instead of pavement markings, the maximum spacing should be ½ S feet where S is the speed in mph.*
4. *If the tangent distance along the temporary diversion is less than 600 feet, a Double Reverse Curve sign should be used instead of the first Reverse Curve sign, and the second Reverse Curve sign should be omitted.*

Option:

5. Positive protection devices may be used per Section 6M.02.
6. Warning lights may be used to supplement channelizing devices at night.
7. A truck-mounted attenuator may be used on the work vehicle and/or the shadow vehicle.

Figure 6P-32. Half Road Closure on a Multi-Lane, High-Speed Highway



Typical Application 32

Notes for Figure 6P-36 – Typical Application 36

Lane Shift on a Freeway

Guidance:

1. *The lane shift should be used when the work space extends into either the right-hand or left-hand lane of a divided highway and it is impracticable, for capacity reasons, to reduce the number of available lanes.*

1a. *Except as provided in Note 1b, the shifting taper should have a length of approximately L (see Tables 6B-3 and 6B-4).*

Option:

1b. Where speeds are less than 50 mph, the shifting taper may have a length of approximately ½ L (see Tables 6B-3 and 6B-4).

Support:

2. When a lane shift is accomplished by using (1) geometry that meets the design speed at which the permanent highway was designed, (2) full normal cross-section (full lane width and full shoulders), and (3) complete pavement markings, then only the initial general work-zone warning sign is required.

Guidance:

3. *When the conditions in Note 2 above are not met, the information shown in the typical application should be employed and the provisions in Notes 4 through 17 below are applicable.*

Standard:

4. **Temporary traffic barriers, if used, shall comply with the provisions of Section 6M.02.**
5. **The barrier shall not be placed along the shifting taper. The lane shall first be shifted using channelizing devices and pavement markings.**

Guidance:

6. *A warning sign should be used to show the changed alignment.*

Standard:

7. **Except as provided in Note 8 below, the number of lanes illustrated on the Reverse Curve signs shall be the same as the number of through lanes available to road users, and the direction of the reverse curves shall be appropriately illustrated.**

Option:

8. 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.
9. Where more than three lanes are being shifted, the Reverse Curve (or Turn) sign may be rectangular.

Guidance:

10. *Where the shifted section is longer than 600 feet, one set of Reverse Curve signs should be used to show the initial shift and a second set should be used to show the return to the normal alignment. If the tangent distance along the temporary diversion is less than 600 feet, a Double Reverse Curve sign should be used instead of the first Reverse Curve sign, and the second Reverse Curve sign should be omitted.*
11. *If a STAY IN LANE sign is used, then solid white lane lines should be used.*

Standard:

12. **The minimum width of the shoulder lane shall be 10 feet.**
13. **For long-term stationary work, existing conflicting pavement markings shall be removed and temporary markings shall be installed before traffic patterns are changed.**

Option:

14. For short-term stationary work, lanes may be delineated by channelizing devices or removable pavement markings instead of temporary markings.

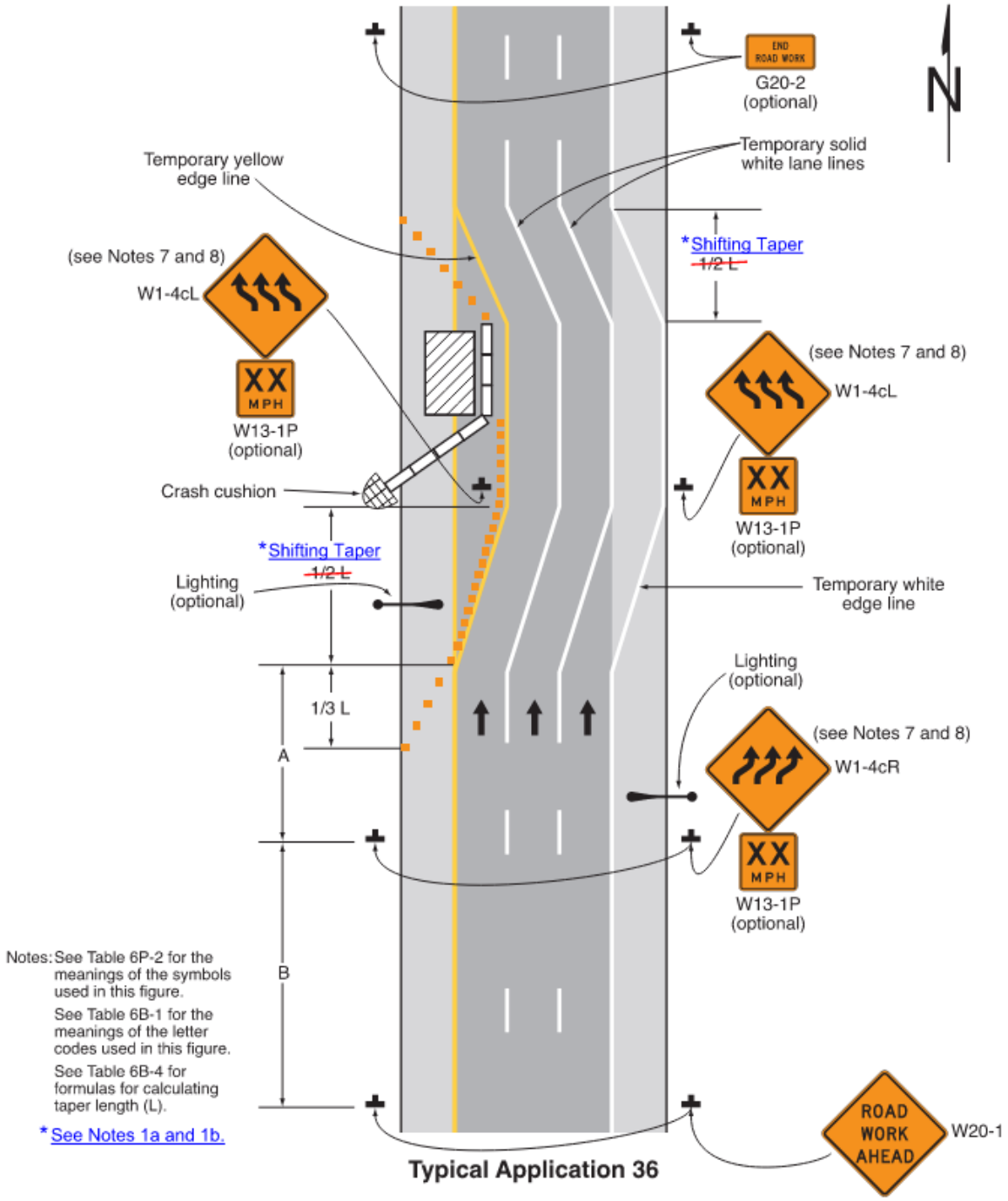
Guidance:

15. *If the shoulder cannot adequately accommodate trucks, trucks should be directed to use the travel lanes.*
16. *The use of a barrier should be based on engineering judgment.*

Option:

17. Type C Steady-Burn warning lights may be placed on channelizing devices and the barrier parallel to the edge of the pavement for nighttime lane closures.

Figure 6P-36. Lane Shift on a Freeway



Notes for Figure 6P-38 - Typical Application 38

Interior Lane Closure on a Freeway

Standard:

1. **An arrow board shall be used when a freeway lane is closed. When more than one freeway lane is closed, a separate arrow board shall be used for each closed lane.**
2. **If temporary traffic barriers are installed, they shall comply with the provisions and requirements in Section 6M.02.**
3. **The barrier shall not be placed along the shifting taper. The lane shall first be shifted using channelizing devices and pavement markings.**
4. **For long-term stationary work, existing conflicting pavement markings shall be removed and temporary markings shall be installed before traffic patterns are changed.**

Guidance:

5. *For a long-term closure, a barrier should be used to provide additional safety to the operation in the closed interior lane. A buffer space should be used at the upstream end of the closed interior lane.*
6. *An arrow board displaying an arrow pointing to the right should be placed on the left-hand shoulder at the beginning of the taper.*
7. *For long-term use, the broken lane lines should be made solid white in the two-lane section.*

7a. *Except as provided in Note 7b, the shifting taper should have a length of approximately L (see Tables 6B-3 and 6B-4).*

Option:

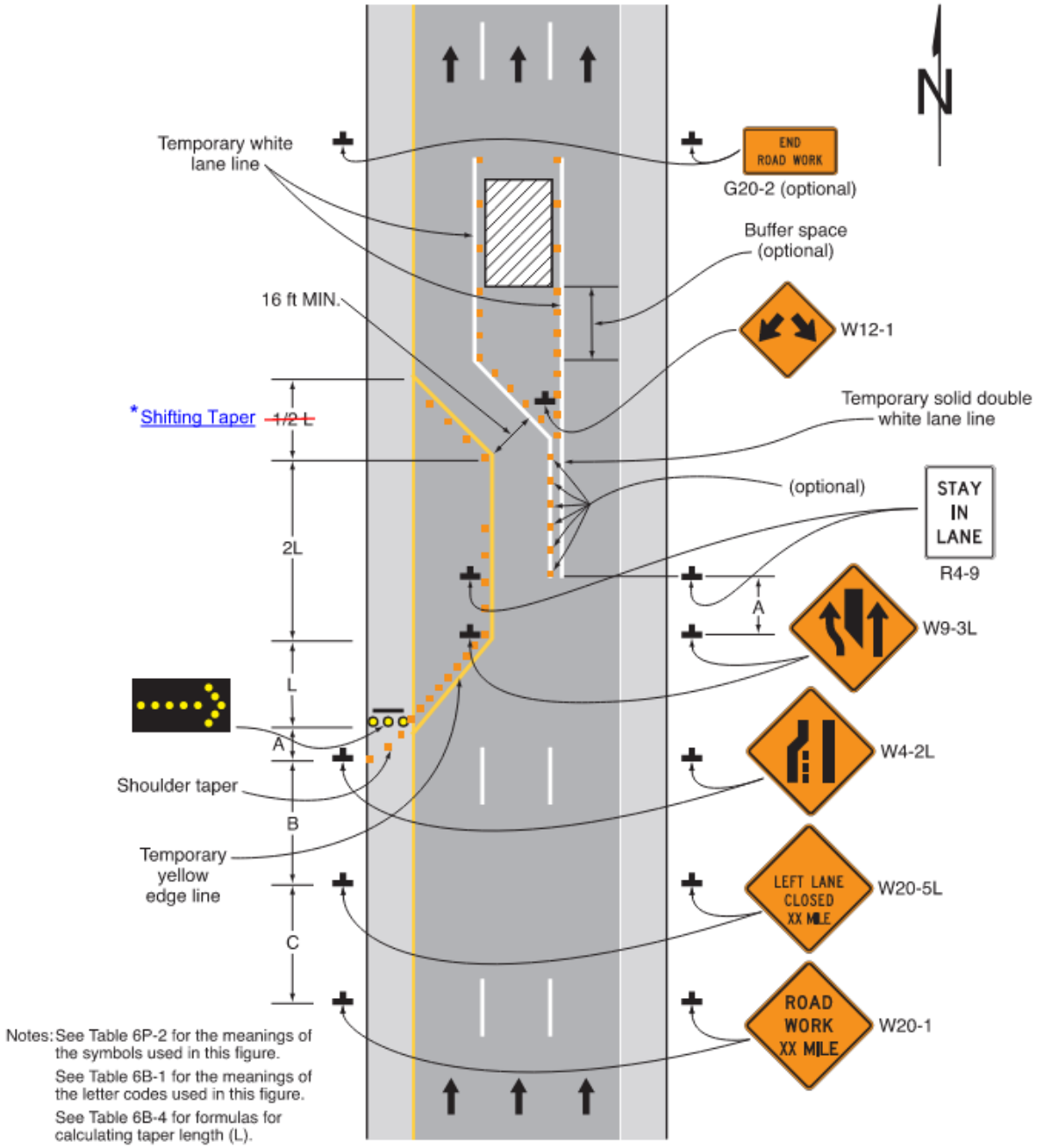
7b. Where speeds are less than 50 mph, the shifting taper may have a length of approximately ½ L (see Tables 6B-3 and 6B-4).

8. As an alternative to initially closing the left-hand lane, as shown in the typical application, the right-hand lane may be closed in advance of the interior lane closure with appropriate channelization and signs. The Interior Lane Shift Ahead symbol sign may be mirrored to indicate a right lane shift.
9. A short, single row of channelizing devices in advance of the vehicular traffic split to restrict vehicular traffic to their respective lanes may be added.
10. DO NOT PASS signs may be used.
11. If a paved shoulder having a minimum width of 10 feet and sufficient strength is available, the left-hand and center lanes may be closed and motor vehicle traffic carried around the work space on the right-hand lane and a right-hand shoulder.
12. A work vehicle with a truck-mounted attenuator may be used within the closed interior lane between the buffer space and the work area.
13. Positive protection devices may be used per Section 6M.02.

Guidance:

14. *When a shoulder lane is used that cannot adequately accommodate trucks, trucks should be directed to use the normal travel lanes.*

Figure 6P-38. Interior Lane Closure on a Freeway



Notes for Figure 6P-39 – Typical Application 39

Median Crossover on a Freeway

Standard:

1. **Channelizing devices or temporary traffic barriers shall be used to separate opposing vehicular traffic.**
2. **An arrow board shall be used when a freeway lane is closed. When more than one freeway lane is closed, a separate arrow board shall be used for each closed lane.**

Guidance:

3. *For long-term work on high-speed, high-volume highways, consideration should be given to using a temporary traffic barrier to separate opposing vehicular traffic.*

3a. *Except as provided in Note 3b, the shifting taper should have a length of approximately L (see Tables 6B-3 and 6B-4).*

Option:

3b. Where speeds are less than 50 mph, the shifting taper may have a length of approximately ½ L (see Tables 6B-3 and 6B-4).

4. When a temporary traffic barrier is used to separate opposing vehicular traffic, the Two-Way Traffic, DO NOT PASS, KEEP RIGHT, and DO NOT ENTER signs may be eliminated.
5. The alignment of the crossover may be designed as a reverse curve.

Guidance:

6. *When the crossover follows a curved alignment, the design criteria contained in the "AASHTO Green Book – A Policy On Geometric Design of Highways and Streets," 7th Edition, 2018 AASHTO should be used.*
7. *When channelizing devices have the potential of leading vehicular traffic out of the intended traffic space, the channelizing devices should be extended a distance in feet of 2 times the speed limit in mph beyond the downstream end of the transition area as depicted.*
8. *Where channelizing devices are used, the Two-Way Traffic signs should be repeated every 1 mile.*

Option:

9. NEXT XX MILES Supplemental Distance plaques may be used with the Two-Way Traffic signs, where XX is the distance to the downstream end of the two-way section.

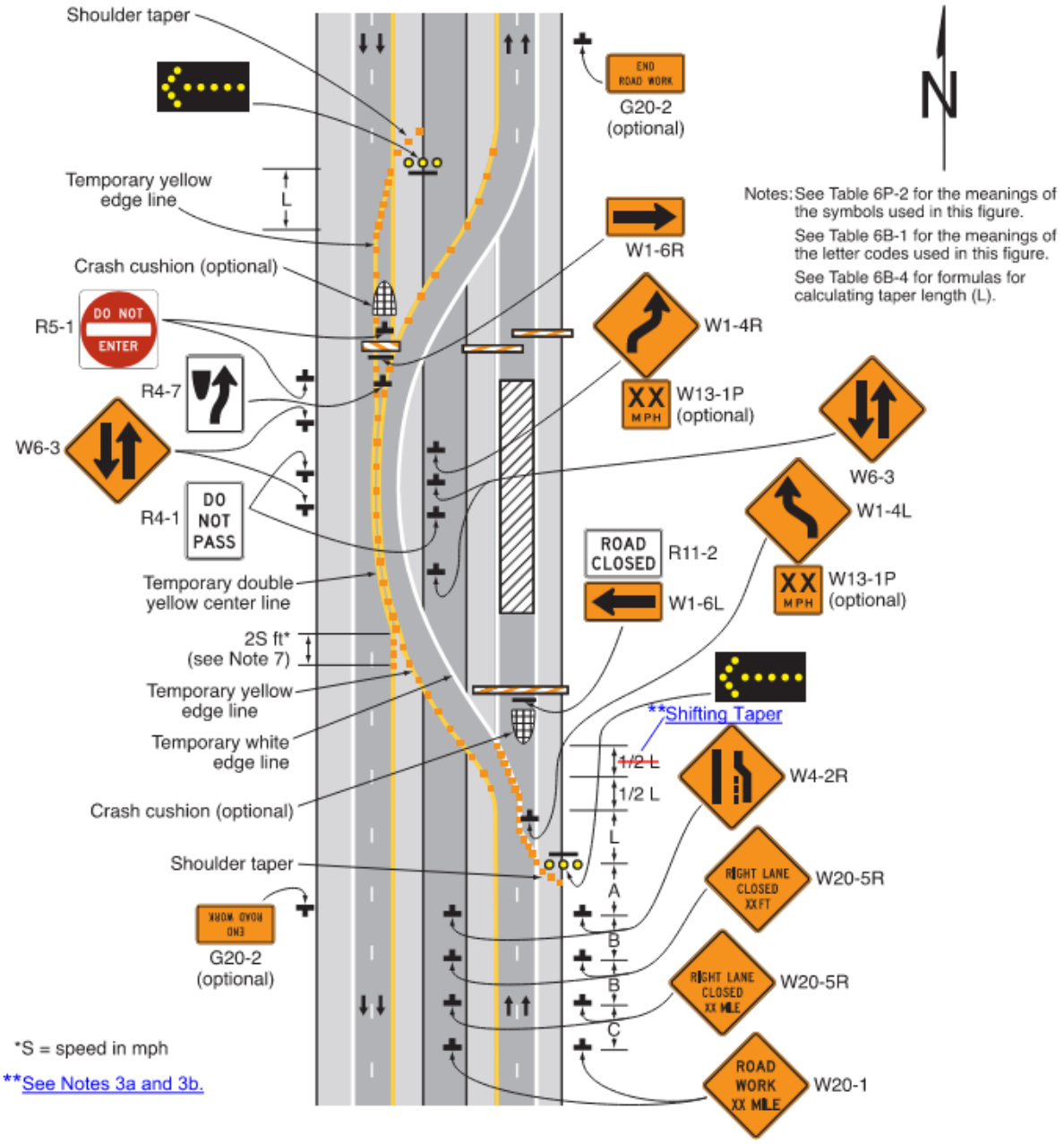
Support:

10. When the distance is sufficiently short that road users entering the section can see the downstream end of the section, they are less likely to forget that there is opposing vehicular traffic.
11. The sign legends for the four pairs of signs approaching the lane closure for the non-crossover direction of travel are not shown. They are similar to the series shown for the crossover direction, except that the left-hand lane is closed.

Option:

12. Positive protection devices may be used per Section 6M.02.

Figure 6P-39. Median Crossover on a Freeway



Typical Application 39

Notes for Figure 6P-41 – Typical Application 41

Median Crossover for an Exit Ramp

Guidance:

1. *This typical application should be used for carrying an exit ramp across a closed directional roadway of a divided highway. The design criteria contained in the "AASHTO Green Book – A Policy On Geometric Design of Highways and Streets," 7th Edition, 2018, AASHTO should be used for determining the curved alignment.*
2. *The guide signs should indicate that the ramp is open, and where the temporary ramp is located. Conversely, if the ramp is closed, guide signs should indicate that the ramp is closed.*
3. *When the exit is closed, a black-on-orange EXIT CLOSED sign panel should be placed diagonally across the interchange/intersection guide signs and channelizing devices should be placed to physically close the ramp.*
4. *In the situation (not shown) where channelizing devices are placed along the mainline roadway, the devices' spacing should be reduced in the vicinity of the off ramp to emphasize the opening at the ramp itself. Channelizing devices and/or temporary pavement markings should be placed on both sides of the temporary ramp where it crosses the median and the closed roadway.*
5. *Advance guide signs providing information related to the temporary exit should be relocated or duplicated adjacent to the temporary roadway.*

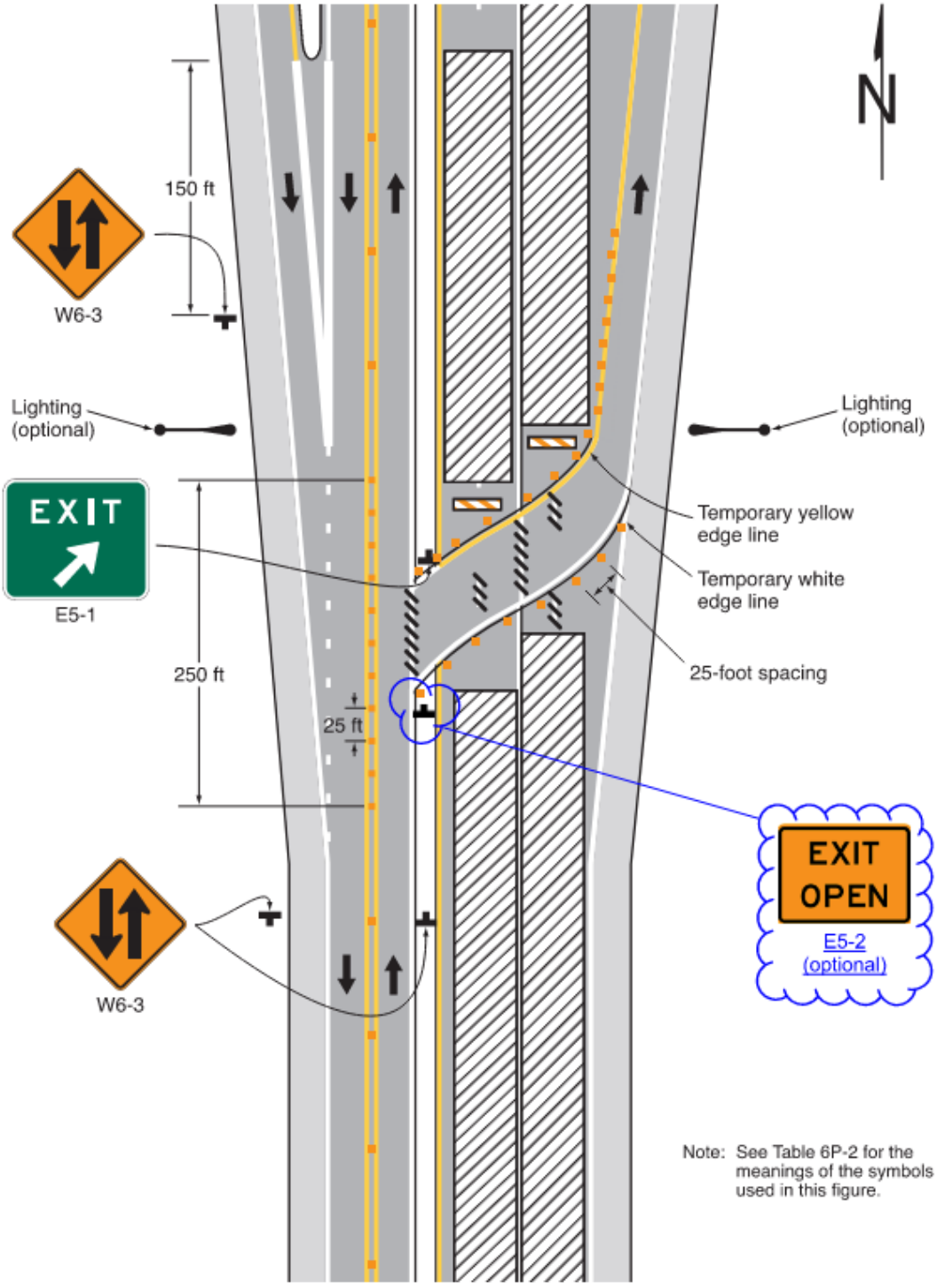
Standard:

6. **A temporary EXIT sign shall be located in the temporary gore. For better visibility, it shall be mounted a minimum of 7 feet from the pavement surface to the bottom of the sign.**

Option:

7. Positive protection devices may be used per Section 6M.02.
8. Guide signs referring to the exit may need to be relocated to the median.
9. The temporary EXIT sign placed in the temporary gore may be either black on orange or white on green.
10. In some instances, a temporary deceleration lane may be useful in facilitating the exiting maneuver.
11. When a temporary traffic barrier is used to separate opposing vehicular traffic, the Two-Way Traffic signs may be omitted.

Figure 6P-41. Median Crossover for an Exit Ramp



Typical Application 41

Notes for Figure 6P-45 – Typical Application 45

Temporary Reversible Lane Using Movable Barriers

Support:

1. This application addresses one of several uses for movable barriers (see Section 6M.02) in highway TTC zones. In this example, one side of a 6-lane divided highway is closed to perform the work operation, and vehicular traffic is carried in both directions on the remaining 3-lane roadway by means of a median crossover.

   To accommodate unbalanced peak-period vehicular traffic volumes, the direction of travel in the center lane is switched to the direction having the greater volume, with the transfer typically being made twice daily. Thus, there are four vehicular traffic phases described as follows:

   a. Phase A—two travel lanes northbound and one lane southbound;
   b. Transition A to B—one travel lane in each direction;
   c. Phase B—one travel lane northbound and two lanes southbound; and
   d. Transition B to A—one travel lane in each direction.

   The typical application on the left illustrates the placement of devices during Phase A. The typical application on the right shows conditions during the transition (Transition A to B) from Phase A to Phase B.

Guidance:

2. *For the reversible lane situation depicted, the ends of the movable barrier should terminate in a protected area or a crash cushion should be provided. During Phase A, the transfer vehicle should be parked behind the downstream end of the movable barrier for southbound traffic as shown in the typical application on the left. During Phase B, the transfer vehicle should be parked between the downstream ends of the movable barriers at the north end of the TTC zone as shown in the typical application on the right.*

   The transition shift from Phase A to B should be as follows:

   a. Change the signs in the northbound advance warning area and transition area from a LEFT LANE CLOSED AHEAD to a 2 LEFT LANES CLOSED AHEAD. Change the mode of the second northbound arrow board from Caution to Right Arrow.
   b. Place channelizing devices to close the northbound center lane.
   c. Move the transfer vehicle from south to north to shift the movable barrier from the west side to the east side of the reversible lane.
   d. Remove the channelizing devices closing the southbound center lane.
   e. Change the signs in the southbound transition area and advance warning area from a 2 LEFT LANES CLOSED AHEAD to a LEFT LANE CLOSED AHEAD. Change the mode of the second southbound arrow board from Right Arrow to Caution.

3. *Where the lane to be opened and closed is an exterior lane (adjacent to the edge of the traveled way or the work space), the lane closure should begin by closing the lane with channelizing devices placed along a merging taper using the same information employed for a stationary lane closure. The lane closure should then be extended with the movable-barrier transfer vehicle moving with vehicular traffic. When opening the lane, the transfer vehicle should travel against vehicular traffic. The merging taper should be removed in a method similar to a stationary lane closure.*

3a. Except as provided in Note 3b, the shifting taper should have a length of approximately L (see Tables 6B-3 and 6B-4).

Option:

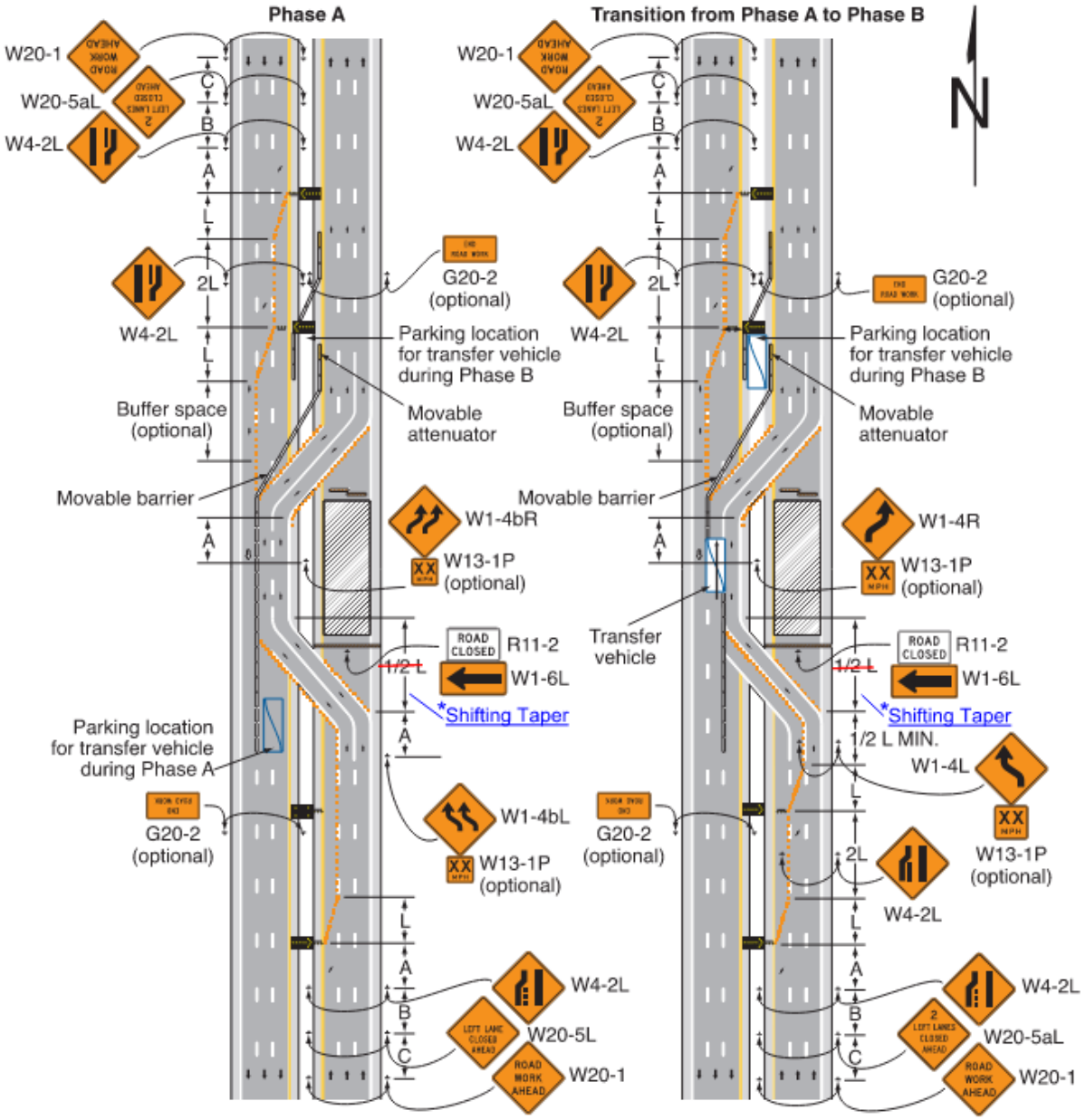
3b. Where speeds are less than 50 mph, the shifting taper may have a length of approximately ½ L (see Tables 6B-3 and 6B-4).

4. The procedure may be used during a peak period of vehicular traffic and then changed to provide two lanes in the other direction for the other peak.
5. A longitudinal buffer space may be used in the activity area to separate opposing vehicular traffic.
6. A work vehicle or a shadow vehicle may be equipped with a truck-mounted attenuator.

Standard:

7. **An arrow board shall be used when a freeway lane is closed. When more than one freeway lane is closed, a separate arrow board shall be used for each closed lane.**

Figure 6P-45. Temporary Reversible Lane Using Movable Barriers



Typical Application 45

Notes: See Table 6P-2 for the meanings of the symbols used in this figure.
See Table 6B-1 for the meanings of the letter codes used in this figure.
See Table 6B-4 for formulas for calculating taper length (L).

*See Notes 3a and 3b.

PART 7
TRAFFIC CONTROL FOR SCHOOL AREAS

Introduction

- Refer to the "Sign Designs and Markings Manual" (SDMM) for information in addition to that included in the "Standard Highway Signs" (SHS) publication referenced in the MUTCD.
- Additional paragraphs added to the Ohio Supplement document include a number and a letter. Each new paragraph is independent of the preceding numbered paragraph. As an example, paragraph 04a is independent of paragraph 04.
- Ohio uses a State specific State Route sign/design. State Routes shall use the Ohio State Route sign/design. See the SDMM for more details.

CHAPTER 7B - SIGNS

Figure 7B-1. Signs in School Areas and at School Crossings (Sheet 1 of 2)

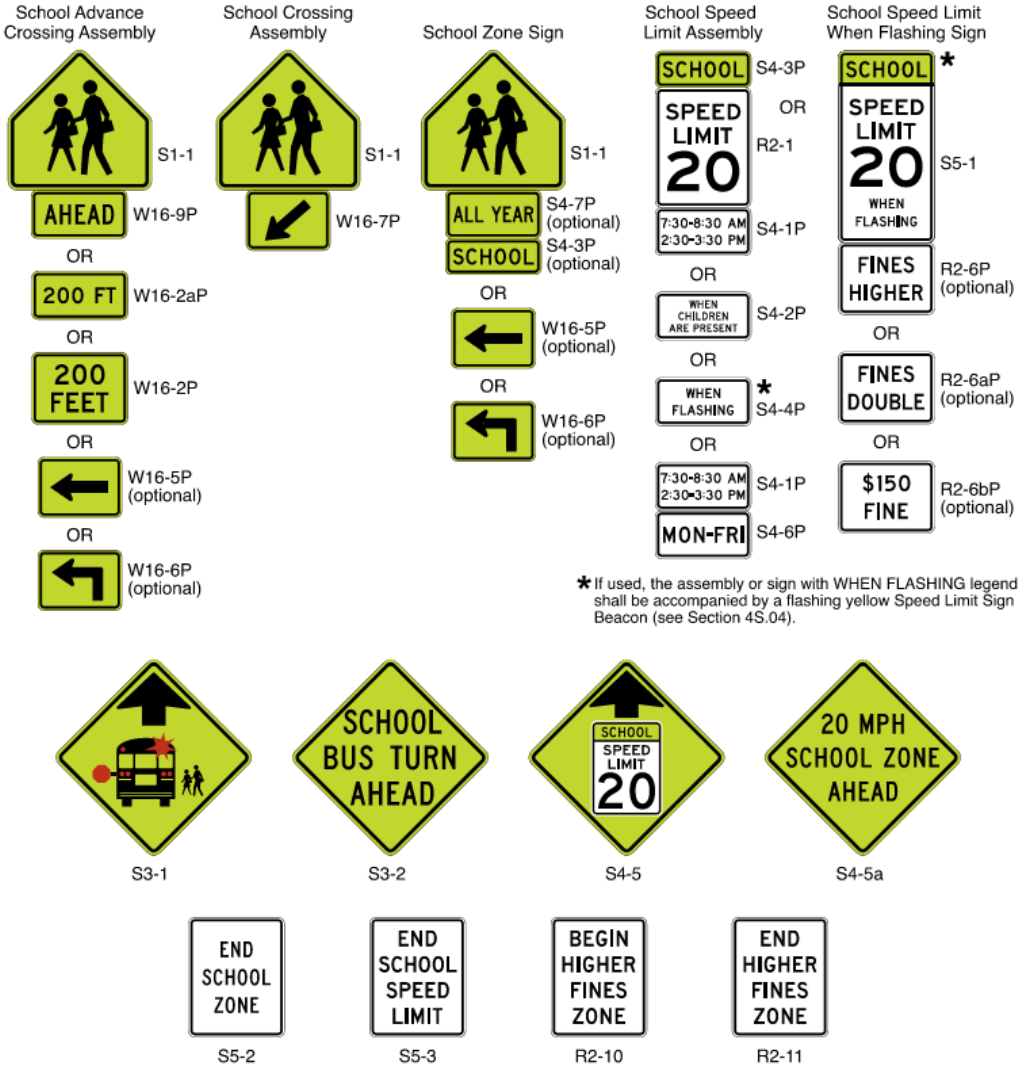
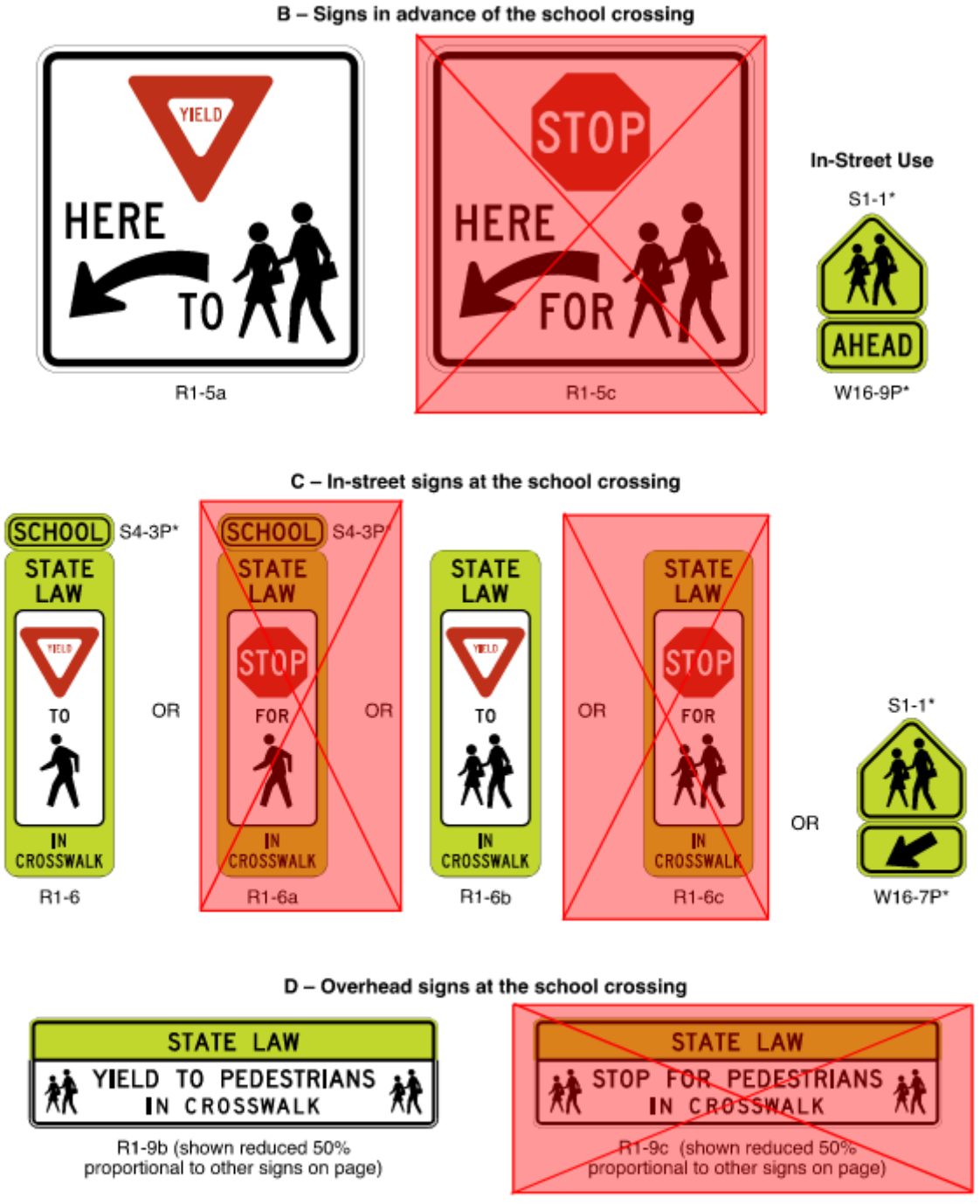


Figure 7B-1. Signs in School Areas and at School Crossings (Sheet 2 of 2)



Notes:

1. The use of the STATE LAW legend is optional on the R1-6 series and R1-9 series signs (see Section 7B.03).
2. The use of the SCHOOL plaque above the R1-6 and ~~R1-6a~~ signs is optional.
3. Signs are shown in proportion to their designated sizes unless otherwise noted.

*Reduced size signs for in-street use (see Section 7B.03):

S1-1	12 x 12 inches
S4-3P	12 x 4 inches
W16-7P	12 x 6 inches
W16-9P	12 x 6 inches

Section 7B.03 School Crossing Signs

Standard:

01 The School Advance Crossing assembly (see Figure 7B-1) shall consist of a School (S1-1) sign supplemented with an AHEAD (W16-9P) plaque or an XX FEET (W16-2P or W16-2aP) plaque.

02 Except as provided in Paragraph 3 of this Section, a School Advance Crossing assembly shall be used in advance (see Table 2C-3 for advance placement guidelines) of the first School Crossing assembly that is encountered in each direction as traffic approaches a school crosswalk (see Figure 7B-3).

Option:

03 The School Advance Crossing assembly may be omitted (see Figure 7B-2) where a School Zone (S1-1) sign (see Section 7B.02) is installed to identify the beginning of a school zone in advance of the School Crossing assembly.

04 If a school crosswalk is located on a cross street in close proximity to an intersection, a School Advance Crossing assembly with a supplemental arrow (W16-5P or W16-6P) plaque may be installed on each approach of the street or highway to warn road users making a turn onto the cross street that they will encounter a school crosswalk soon after making the turn (see Figure 7B-3).

05 A 12-inch reduced size in-street School (S1-1) sign (see Figure 7B-1), installed in compliance with the mounting height and special mounting support requirements for an In-Street Pedestrian Crossing (R1-6 ~~or R1-6a~~) sign (see Section 2B.20), may be used in advance of a school crossing to supplement the post-mounted school warning signs. A 12 x 6-inch reduced size AHEAD (W16-9P) plaque (see Figure 7B-1) may be mounted below the reduced size in-street School (S1-1) sign.

Standard:

06 If used, the School Crossing assembly (see Figure 7B-1) shall be installed at the school crossing (see Figures 7B-2 and 7B-3), or as close to it as possible, and shall consist of a School (S1-1) sign supplemented with a diagonal downward-pointing arrow (W16-7P) plaque (see Section 2C.63) to show the location of the crossing.

07 The School Crossing assembly shall not be used at crossings other than those adjacent to schools and those on established school pedestrian routes.

08 The School Crossing assembly shall not be installed on an approach controlled by a STOP or a YIELD sign except as provided in Paragraphs 9 and 10 of this Section.

Option:

09 The School Crossing assembly may be installed on an approach to a circular intersection controlled by a YIELD sign where the crosswalk is at least 20 feet in advance of the yield point at the entrance to a circulatory roadway.

10 At a signalized or stop-controlled intersection the School Crossing assembly may be installed on an approach to a channelized right turn lane controlled by a YIELD sign where the crosswalk is at least 20 feet in advance of the yield point.

11 A Yield Here To ~~(Stop Here For)~~ School Crossing (R1-5a ~~or R1-5c~~) sign (see Figure 7B-1) may be used, in accordance with the provisions of Section 2B.19, in advance of a marked crosswalk that crosses an uncontrolled multi-lane approach within school zones.

12 The In-Street Pedestrian Crossing (R1-6 ~~or R1-6a~~) sign (see Section 2B.20 and Figure 7B-1) or the In-Street School Crossing (R1-6b ~~or R1-6c~~) sign (see Figure 7B-1) may be used at school crossings on approaches that are not controlled by a traffic control signal, a pedestrian hybrid beacon, or emergency-vehicle hybrid beacon. If used at a school crossing, a 12 x 4-inch SCHOOL (S4-3P) plaque (see Figure

7B-1) may be mounted above the sign. The STATE LAW legend on the R1-6 series signs may be omitted.

13 The In-Street Pedestrian Crossing (R1-6 ~~or R1-6a~~) sign or In-Street School Crossing (R1-6b ~~or R1-6c~~) sign may be used at intersections or midblock crossings with flashing beacons.

14 The Overhead School Crossing (R1-9b ~~or R1-9c~~) sign (see Figure 7B-1) may be used at school crossings on approaches that are not controlled by a traffic control signal, pedestrian hybrid beacon, or an emergency-vehicle hybrid beacon. The STATE LAW legend on the R1-9 series signs may be omitted**.**

Standard:

15 **When used at an uncontrolled crossing, the In-Street or Overhead Pedestrian Crossing sign shall be used only as a supplement to a School Crossing assembly with a diagonal downward-pointing arrow (W16-7P) plaque at the crosswalk location.**

Option:

16 A 12-inch reduced size in-street School (S1-1) sign (see Figure 7B-1) may be used instead of the In-Street Pedestrian Crossing (R1-6 ~~or R1-6a~~) or the In-Street School Crossing (R1-6b ~~or R1-6c~~) sign at a school crossing on approaches that are not controlled by a traffic control signal, pedestrian hybrid beacon, or an emergency-vehicle hybrid beacon. A 12 x 6-inch reduced size diagonal downward-pointing arrow (W16-7P) plaque (see Figure 7B-1) may be mounted below the reduced size in-street School (S1-1) sign.

Standard:

17 If an In-Street Pedestrian Crossing sign, an In-Street School Crossing sign, or a reduced size in-street School (S1-1) sign is placed in the roadway, the sign support shall comply with the mounting height and special mounting support requirements for an In-Street Pedestrian Crossing (R1-6 ~~or R1-6a~~) sign (see Section 2B.20).

18 The In-Street Pedestrian Crossing sign, the In-Street School Crossing sign, the Overhead Pedestrian Crossing sign, and the reduced size in-street School (S1-1) sign shall not be used on approaches that are controlled by a traffic control signal, pedestrian hybrid beacon, or an emergency-vehicle hybrid beacon.

Support:

19 Ohio Revised Code 4511.46 requires Yielding to pedestrians. All references to Stopping to Pedestrians have been removed from this section. [ORC 4511.46]

Section 7B.05 School Speed Limit Signs and Plaques

Standard:

01 A School Speed Limit assembly (see Figure 7B-1) or a School Speed Limit When Flashing (S5-1) sign (see Figure 7B-1) shall be used to indicate the speed limit where a reduced school speed limit zone has been established based upon an engineering study or where a reduced school speed limit is specified for such areas by statute. The School Speed Limit assembly or School Speed Limit When Flashing sign shall be placed at or as near as practicable to the point where the reduced school speed limit zone begins (see Figures 7B-2 and 7B-4).

02 If a reduced school speed limit zone has been established, a School (S1-1) sign shall be installed in advance (see Table 2C-3 for advance placement guidelines) of the first School Speed Limit sign assembly or S5-1 sign that is encountered in each direction as traffic approaches the reduced school speed limit zone (see Figures 7B-2 and 7B-4).

03 Except as provided in Paragraph 4 of this Section, the downstream end of an authorized and posted reduced school speed limit zone shall be identified with an END SCHOOL SPEED LIMIT (S5-3) sign (see Figures 7B-1, 7B-2, and 7B-4).

Option:

04 If a reduced school speed limit zone ends at the same point as a designated school zone (see Section 7B.02), an END SCHOOL ZONE (S5-2) sign may be used instead of an END SCHOOL SPEED LIMIT (S5-3) sign. A standard Speed Limit sign showing the speed limit for the section of highway that is downstream from the authorized and posted reduced school speed limit zone may be mounted on the same post above the END SCHOOL SPEED LIMIT (S5-3) sign or the END SCHOOL ZONE (S5-2) sign.

Guidance:

05 The beginning point of a reduced school speed limit zone should be at least 200 feet in advance of the school grounds or a school crossing; however, this 200-foot distance should be increased if the reduced school speed limit is 30 mph or higher. The maximum beginning point of a reduced school speed limit zone should not be greater than ~~500~~ 300 feet in advance of the school zone as defined in ORC 4511.21 ~~grounds~~ or a school crossing. [ORC 4511.21]

Standard:

06 The School Speed Limit assembly shall be either a static sign assembly, a blank-out sign, or a changeable message sign (see Chapter 2L).

07 The static School Speed Limit assembly shall consist of a top plaque (S4-3P) with the legend SCHOOL, a Speed Limit (R2-1) sign, and a bottom plaque (S4-1P, S4-2P, S4-4P, or S4-6P) indicating the specific periods of the day and/or days of the week that the special school speed limit is in effect (see Figure 7B-1).

08 When a School Speed Limit When Flashing (S5-1) sign or a Speed Limit (R2-1) sign with a supplemental WHEN FLASHING (S4-4P) plaque is used, a Speed Limit Sign Beacon (see Section 4S.04) shall be used to identify the periods that the school speed limit is in effect.

09 Fluorescent yellow-green pixels shall be used when the "SCHOOL" message is displayed on a changeable message sign for a school speed limit.

Option:

10 Changeable message signs may use blank-out messages or other methods in order to display the school speed limit only during the periods it applies.

11 A Vehicle Speed Feedback (W13-20aP) plaque that displays the speed of approaching drivers (see Sections 2B.21 and 2C.13), that is part of a School Speed Limit assembly or a School Speed Limit When Flashing (S5-1) sign, may be used in a school speed limit zone.

Guidance:

12 *If used, the Vehicle Speed Feedback (W13-20aP) plaque should only be used during the time period when the school speed limit is in effect.*

13 A Reduced School Speed Limit Ahead (S4-5or S4-5a) sign (see Figure 7B-1) should be used to inform road users of a reduced speed zone where the speed limit is being reduced by more than 10 mph, or where engineering judgment indicates that advance notice would be appropriate.

Standard:

14 If used, the Reduced School Speed Limit Ahead sign shall be followed by a School Speed Limit sign or a School Speed Limit assembly.

15 The speed limit displayed on the Reduced School Speed Limit Ahead sign shall be identical to the speed limit displayed on the subsequent School Speed Limit sign or School Speed Limit assembly.

PART 8
TRAFFIC CONTROL FOR RAILROAD AND LIGHT RAIL TRANSIT GRADE CROSSINGS

Introduction

- Refer to the "Sign Designs and Markings Manual" (SDMM) for information in addition to that included in the "Standard Highway Signs" (SHS) publication referenced in the MUTCD.
- Additional paragraphs added to the Ohio Supplement document include a number and a letter. Each new paragraph is independent of the preceding numbered paragraph. As an example, paragraph 04a is independent of paragraph 04.
- Ohio uses a State specific State Route sign/design. State Routes shall use the Ohio State Route sign/design. See the SDMM for more details.

CHAPTER 8B – Signs

Section 8B.04 Crossbuck Assemblies with YIELD or STOP Signs at Passive Grade Crossings

Standard:

01 A Crossbuck Assembly shall consist of a Crossbuck (R15-1) sign, and a Number of Tracks (R15-2P) plaque if two or more tracks are present, that complies with the provisions of Section 8B.03, and either a YIELD (R1-2) or STOP (R1-1) sign installed on the same support, except as provided in Paragraph 10 of this Section. YIELD or STOP signs used at passive grade crossings shall be installed in compliance with the provisions of Section 2B.18, and Figures 8B-2 and 8B-3.

02 At all public highway-rail grade crossings that are not equipped with the active traffic control systems that are described in Chapter 8D, except crossings where road users are directed by an authorized person on the ground to not enter the crossing at all times that an approaching train is about to occupy the crossing, a Crossbuck Assembly shall be installed on the right-hand side of the highway on each approach to the highway-rail grade crossing.

03 If a Crossbuck sign is used on a highway approach to a public highway-LRT grade crossing that is not equipped with the active traffic control systems that are described in Chapter 8D, a Crossbuck Assembly shall be installed on the right-hand side of the highway on each approach to the highway-LRT grade crossing.

04 Where restricted sight distance or unfavorable highway geometry exists on an approach to a grade crossing that has a Crossbuck Assembly, or where there is a one-way multi-lane approach, an additional Crossbuck Assembly shall be installed on the left-hand side of the highway.

05 A YIELD sign shall be the default traffic control device for Crossbuck Assemblies on all highway approaches to passive grade crossings unless an engineering study performed by the regulatory agency or highway authority having jurisdiction over the roadway approach determines that a STOP sign is appropriate.

Guidance:

06 If replacing an existing sign at an existing passive grade crossing without making any geometric or operational changes at the crossing, the PUCO and ORDC Ohio Railroad Information System should be used to determine the existing sign at crossing. The same sign as the existing sign should be used at the crossing. [ORC 4511.61]~~The use of STOP signs at passive grade crossings should be limited to~~

~~*unusual conditions where requiring all motor vehicles to make a full stop is determined to be necessary by a Diagnostic Team. Among the factors that should be considered by the Diagnostic Team are the line of sight to approaching rail traffic (giving due consideration to seasonal crops or vegetation beyond both the highway and railroad or LRT rights-of-ways), the number of tracks, the speeds of trains or LRT equipment and motor vehicles, and the crash history at the cross grading.*~~

06a If replacing or installing a sign at an existing or new passive grade crossing that changes the geometrics or operations at the crossing, refer to ORC 4511.61 and TEM 801 for items to consider when performing an engineering study to determine the sign that should be used at the crossing. [ORC 4511.61]

07 Where a passive grade crossing is located on a stop-controlled approach and the clear storage distance is less than the length of the design vehicle, and where adequate sight distance to oncoming traffic on the parallel roadway is available to road users stopped on the approach to the grade crossing, consideration should be given to installing a STOP sign at the Crossbuck Assembly instead of at the highway-highway intersection. If the STOP sign is installed at the Crossbuck Assembly instead of at the highway-highway intersection, the Diagnostic Team should consider installing some other intersection traffic control device at the highway-highway intersection.

Standard:

08 If a Crossbuck Assembly is installed on the approach to a passive grade crossing located at a highway-highway intersection controlled by a traffic control signal that is not interconnected with the grade crossing and not preempted by the approach of rail traffic, a Diagnostic Team shall be convened to determine the appropriate traffic control devices. A STOP sign shall not be installed on a Crossbuck Assembly in this situation.

Support:

09 Sections 8A.01 through 8A.05 contain information regarding the responsibilities of the Diagnostic Team, highway agency, regulatory agency with statutory authority (if applicable), and the railroad company or transit agency regarding the selection, design, and operation of traffic control devices placed at grade crossings.

Option:

10 If a YIELD or STOP sign is installed for a Crossbuck Assembly at a grade crossing, it may be installed on the same support as the Crossbuck sign or it may be installed on a separate support at a point where the motor vehicle is to stop, or as near to that point as practicable, but in either case, the YIELD or STOP sign is considered to be a part of the Crossbuck Assembly.

Standard:

11 If a YIELD or STOP sign is installed on an existing Crossbuck sign support, the mounting height, measured vertically from the bottom of the YIELD or STOP sign to the top of the curb, or in the absence of curb, measured vertically from the bottom of the YIELD or STOP sign to the elevation of the near edge of the traveled way, shall be at least 4 feet (see Figure 8B-2).

12 If a Crossbuck Assembly is installed on a new sign support (see Figure 8B-2) or if the YIELD or STOP sign is installed on a separate support (see Figure 8B-3), the mounting height, measured vertically from the bottom of the YIELD or STOP sign to the top of the curb, or in the absence of curb, measured vertically from the bottom of the YIELD or STOP sign to the elevation of the near edge of the traveled way, shall be at least 5 feet in rural areas and shall be at least 7 feet in areas where parking or pedestrian movements are likely to occur.

Guidance:

13 If a YIELD or STOP sign is installed for a Crossbuck Assembly at a grade crossing on a separate support than the Crossbuck sign (see Figure 8B-3), the YIELD or STOP sign should be placed in the same plane as the Crossbuck sign and closer to the traveled way than the Crossbuck sign. The minimum separation between the nearest point of the YIELD or STOP sign and the nearest point of the Crossbuck sign should be 2 inches as shown in Figure 8B-3.

Support:

14 The meaning of a Crossbuck Assembly that includes a YIELD sign is that a road user approaching the grade crossing needs to be prepared to decelerate, and when necessary, yield the right-of-way to any rail traffic that might be occupying the crossing or might be approaching and in such close proximity to the crossing that it would be unsafe for the road user to cross.

15 Certain commercial motor vehicles and school buses are required to stop at all grade crossings in accordance with 49 CFR 392.10 even if a YIELD sign (or just a Crossbuck sign) is posted.

16 The meaning of a Crossbuck Assembly that includes a STOP sign is that a road user approaching the grade crossing must come to a full stop not less than 15 feet short of the nearest rail, and remain stopped while the road user determines if there is rail traffic either occupying the crossing or approaching and in such close proximity to the crossing that the road user must yield the right-of-way to rail traffic. The road user is permitted to proceed when it is safe to cross.

Standard:

17 A vertical strip of retroreflective white material, not less than 2 inches in width, shall be used on each Crossbuck support at passive grade crossings for the full length of the back of the support from the Crossbuck sign or Number of Tracks plaque to within 2 feet above the near edge of the roadway, except as provided in Paragraph 18 of this Section. A white retroreflective strip wrapped around a round support for the full length of the support from the Crossbuck Sign or Number of Tracks plaque to within 2 feet above the near edge of the roadway shall satisfy this requirement as long as the round support has an outside diameter of at least 2 inches.

Option:

18 The vertical strip of retroreflective material may be omitted from the back sides of Crossbuck sign supports installed on one-way streets and at pathway or sidewalk grade crossings (see Section 8E.05).

19 If a YIELD or STOP sign is installed on the same support as the Crossbuck sign, a vertical strip of red (see Section 2A.11) or white retroreflective material that is at least 2 inches wide may be used on the front of the support from the YIELD or STOP sign to within 2 feet above the near edge of the roadway.

Standard:

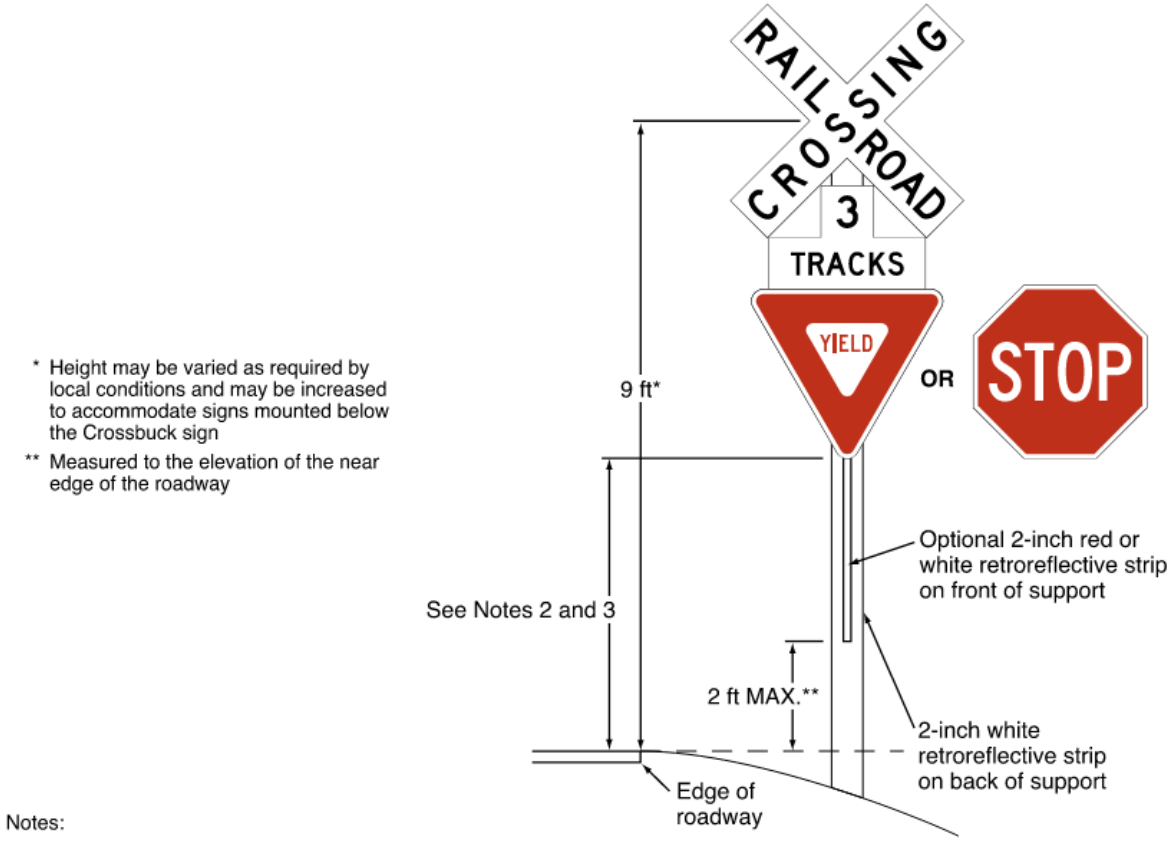
20 If a Crossbuck sign support at a passive grade crossing does not include a YIELD or STOP sign (either because the YIELD or STOP sign is placed on a separate support or because a YIELD or STOP sign is not present on the approach), a vertical strip of retroreflective white material, not less than 2 inches in width, shall be used for the full length of the front of the support from the Crossbuck sign or Number of Tracks plaque to within 2 feet above the near edge of the roadway. A white retroreflective strip wrapped around a round support for the full length of the support from the Crossbuck Sign or Number of Tracks plaque to within 2 feet above the near edge of the roadway shall satisfy this requirement as long as the round support has an outside diameter of at least 2 inches.

21 At all grade crossings where YIELD or STOP signs are installed, Yield Ahead (W3-2) or Stop Ahead (W3-1) signs shall also be installed if the criteria for their installation in Section 2C.35 is met.

Support:

22 Section 8C.03 contains provisions regarding the use of stop lines or yield lines at grade crossings.

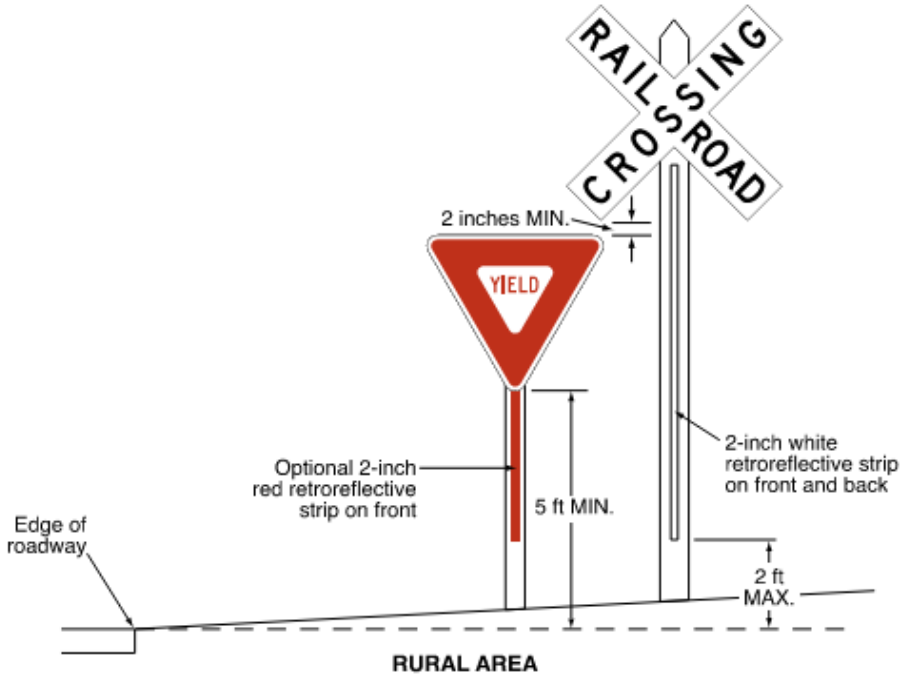
Figure 8B-2. Crossbuck Assembly with a YIELD or STOP Sign on the Crossbuck Sign Support



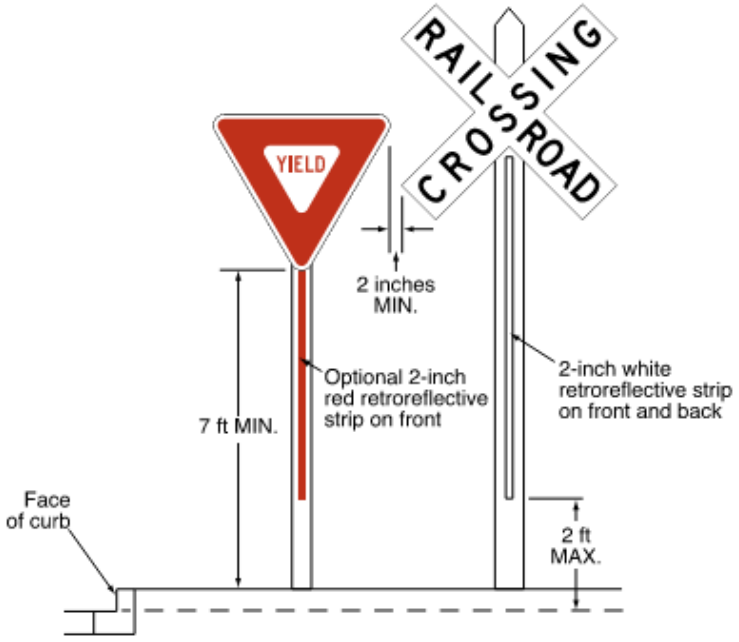
Notes:

1. YIELD or STOP signs are used only at passive crossings. A STOP sign is used only if an engineering study determines that it is appropriate for that particular approach. See Section 8B.04, P05 through P06a.
2. Mounting height shall be at least 4 feet for installations of YIELD or STOP signs on existing Crossbuck sign supports.
3. Mounting height shall be at least 5 feet for new installations in rural areas and at least 7 feet for new installations in areas where parking or pedestrian movements are likely to occur.

Figure 8B-3. Crossbuck Assembly with a YIELD or STOP Sign on a Separate Sign Support (Sheet 1 of 2)



RURAL AREA

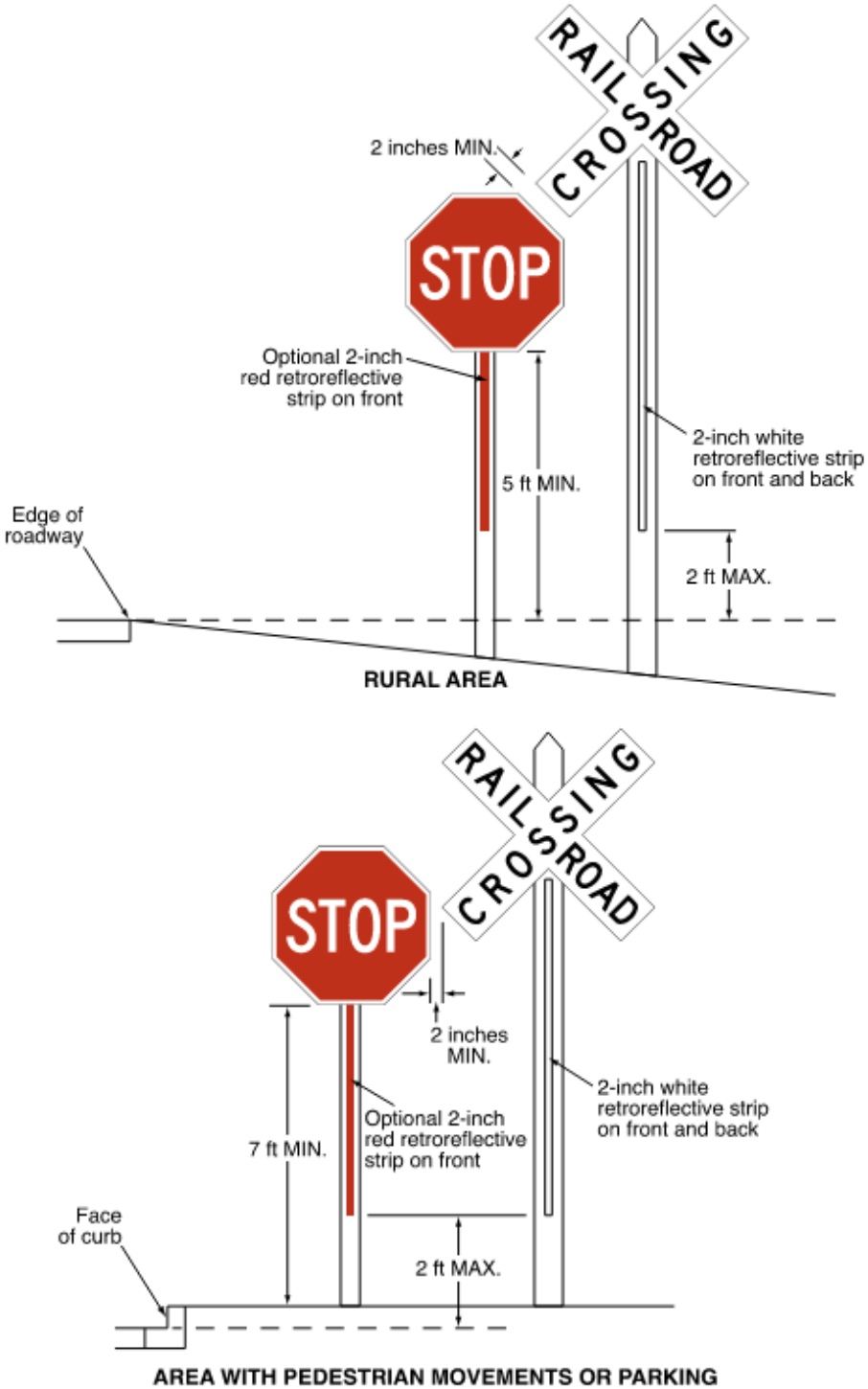


AREA WITH PEDESTRIAN MOVEMENTS OR PARKING

Notes:

1. YIELD signs are used only at passive crossings. See Section 8B.04, P05 through P06a.
2. Place the face of the signs in the same plane and place the YIELD sign closer to the traveled way. Provide a 2-inch minimum separation between the edge of the Crossbuck sign and the edge of the YIELD sign.

Figure 8B-3. Crossbuck Assembly with a YIELD or STOP Sign on a Separate Sign Support (Sheet 2 of 2)



Notes:

1. STOP signs are used only at passive crossings and only if an engineering study determines that it is appropriate for that particular approach. See Section 8B.04, P05 through P06a.
2. Place the face of the signs in the same plane and place the STOP sign closer to the traveled way. Provide a 2-inch minimum separation between the edge of the Crossbuck sign and the edge of the STOP sign.

CHAPTER 8C – Markings

Section 8C.03 Stop and Yield Lines

Guidance:

01 On paved roadway approaches to passive grade crossings where a STOP sign is installed in conjunction with the Crossbuck sign, a stop line should be installed to indicate the point behind which motor vehicles are required to stop or as near to that point as practicable.

Option:

02 On paved roadway approaches to passive grade crossings where a YIELD sign is installed in conjunction with the Crossbuck sign, a yield line (see Section 3B.19) or a stop line may be installed to indicate the point behind which motor vehicles are required to yield or stop or as near to that point as practicable.

Guidance:

03 If a yield line (see Figure 3B-16) or stop line is used at a passive grade crossing, it should be a transverse line at a right angle to the traveled way and should be placed no closer than 15 feet nor more than 50 feet in advance of the nearest rail. [ORC 4511.62]

Standard:

04 On paved roadways at grade crossings that are equipped with active control devices such as flashing-light signals, automatic gates, or traffic control signals, a stop line (see Section 3B.19) shall be installed to indicate the point behind which motor vehicles are or might be required to stop.

Guidance:

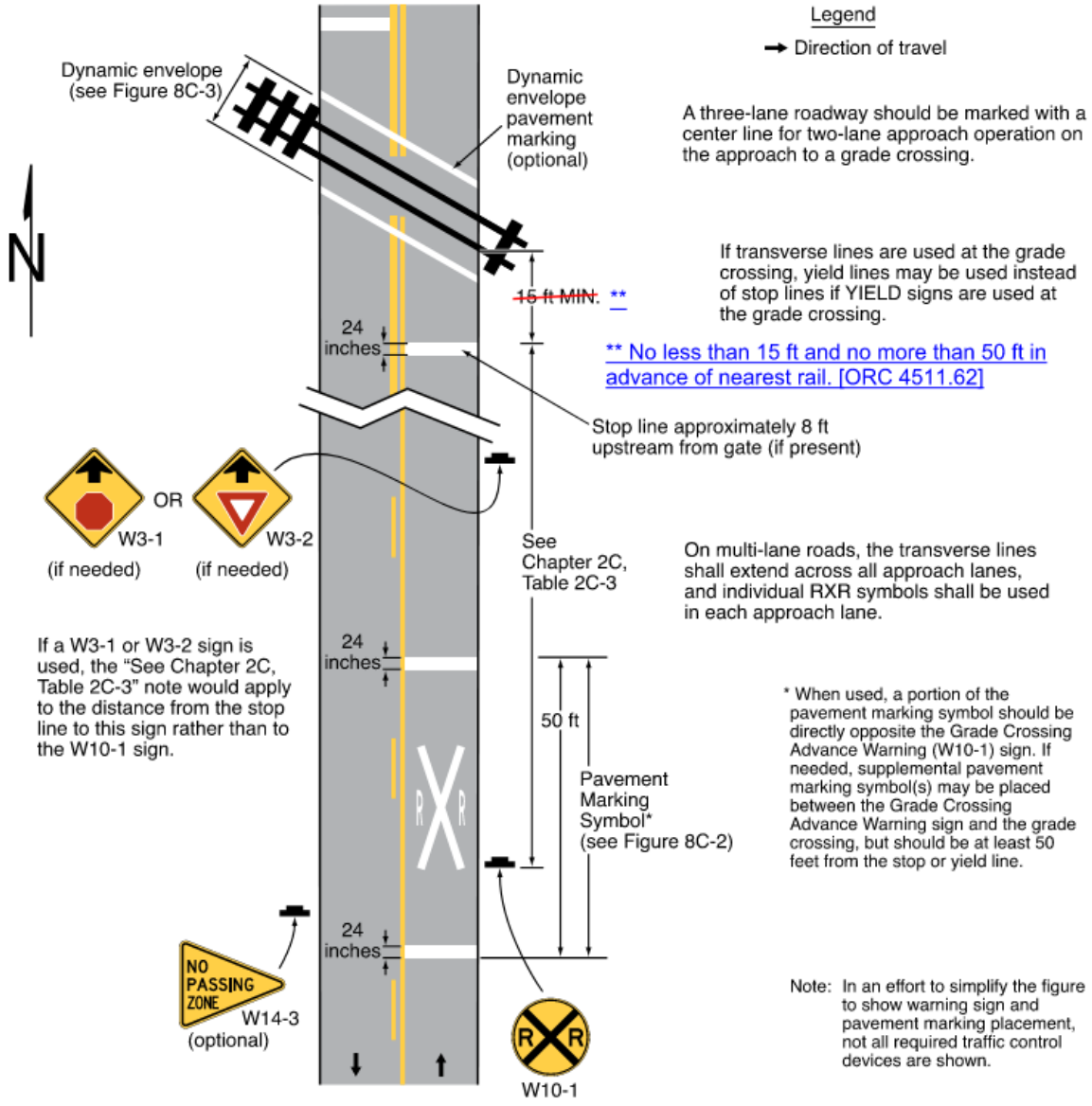
05 If a stop line is used at an active grade crossing where road users are controlled by flashing-light signals, it should be a transverse line at a right angle to the traveled way and should be placed approximately 8 feet in advance of the flashing-light signals or automatic gate (if present), whichever is farther from the track(s), but no closer than 15 feet nor more than 50 feet in advance of the nearest rail (see Figure 8C-1). [ORC 4511.62]

06 If a stop line is used at an active grade crossing where road users are controlled by a traffic control signal, it should be a transverse line at a right angle to the traveled way and should be placed no closer than 15 feet nor more than 50 feet in advance of the nearest rail. [ORC 4511.62]

Standard:

07 If a stop line is used at an active grade crossing where road users are controlled by a traffic control signal, it shall be placed such that the lateral and longitudinal positions of the signal faces for the approach comply with the provisions of Sections 4D.07 and 4D.08.

Figure 8C-1. Example of Placement of Warning Signs and Pavement Markings at Grade Crossings



PART 9
TRAFFIC CONTROL FOR BICYCLE FACILITIES

Introduction

- Refer to the "Sign Designs and Markings Manual" (SDMM) for information in addition to that included in the "Standard Highway Signs" (SHS) publication referenced in the MUTCD.
- Additional paragraphs added to the Ohio Supplement document include a number and a letter. Each new paragraph is independent of the preceding numbered paragraph. As an example, paragraph 04a is independent of paragraph 04.
- Ohio uses a State specific State Route sign/design. State Routes shall use the Ohio State Route sign/design. See the SDMM for more details.

CHAPTER 9B - REGULATORY SIGNS

Section 9B.16 Bicycles Use Shoulder Only Sign (R9-21)

Option:

01 The Bicycles Use Shoulder Only (R9-21) sign (see Figure 9B-1) may be used to designate locations on an ~~freeway or~~ expressway where bicycles are allowed, but must remain on an available and usable shoulder.

Guidance:

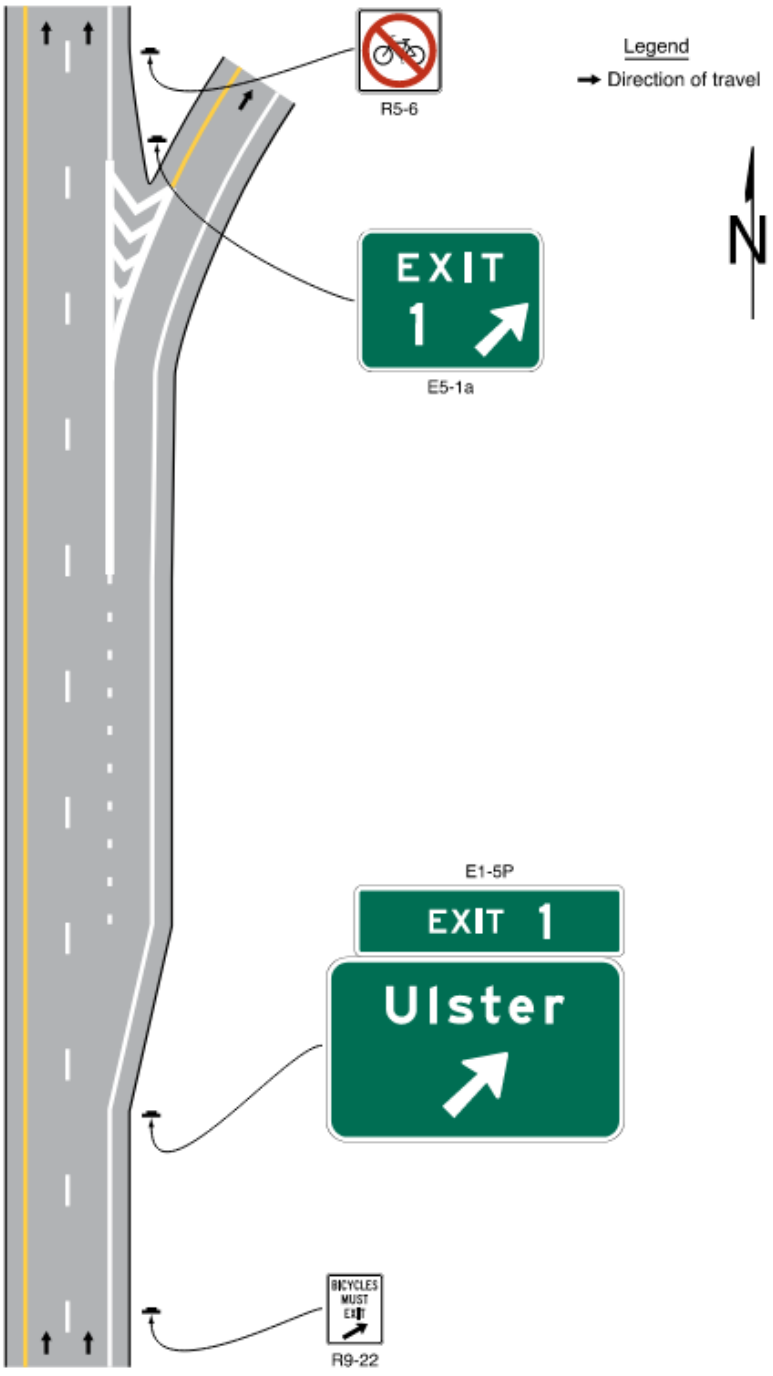
02 The Bicycles Use Shoulder Only sign should be limited to use on ~~freeways and~~ expressways.

03 The Bicycles Use Shoulder Only sign should be placed adjacent to the entrance ramp or entrance to the ~~freeway~~ expressway at or near the location where the full-width shoulder resumes beyond the entrance ramp taper.

Support:

03a Ohio Revised Code 4511.051 prohibits bicycle use on a freeway. [ORC 4511.051]

Figure 9B-4. Signing for Termination of Bicycle Access on ~~Freeways and~~ Expressways



Ohio Revised Code 4511.051 prohibits bicycle use on a freeway. [ORC 4511.051]

CHAPTER 9E - MARKINGS

Section 9E.01 Bicycle Lanes

Support:

01 Pavement markings designate that portion of the roadway for preferential use by bicyclists. Markings inform all road users of the restricted nature of the bicycle lane.

Standard:

02 Longitudinal pavement markings and bicycle lane symbol or word markings (see Figure 9E-1) shall be used to define bicycle lanes.

Guidance:

03 The first symbol or word marking in a bicycle lane should be placed at the beginning of the bicycle lane and downstream symbol or word markings should be placed after major intersections. Additional symbol or word markings should be placed at periodic intervals along the bicycle lane based on engineering judgment.

Option:

04 An arrow marking (see Figure 9E-1) may be used in conjunction with the bicycle lane symbol or word marking, placed downstream from the symbol or word marking.

05 Where the bicycle lane symbols or word markings are used, Bicycle Lane signs (see Section 9B.04) may also be used, but not necessarily adjacent to every set of pavement markings in order to avoid overuse of the signs.

Support:

06 Section 3H.06 contains information on green-colored pavement for use in bicycle lanes.

Standard:

07 The bicycle symbol or BIKE LANE pavement word marking and the pavement marking arrow shall not be used in a shoulder.

08 A portion of the roadway shall not be established as both a shoulder and a bicycle lane.

Support:

09 Where a shoulder is provided or is of sufficient width to meet the expectation of a highway user in that it can function as a space for emergency, enforcement, or maintenance activities, or avoidance or recovery maneuvers, Section 9B.16 contains information regarding the Bicycles Use Shoulder Only sign that can be used to denote locations on an ~~freeway or~~ expressway where bicycles are permitted on an available and usable shoulder.

10 Examples of pavement markings for bicycle lanes on a two-way street are shown in Figure 9E-2.

10a Ohio Revised Code 4511.051 prohibits bicycle use on a freeway. [ORC 4511.051]

Appendices

Appendix A3
Evolution of the OMUTCD

Edition	Name	Approval/Adopted	Effective Date
1924	Manual of Standard Signs and Marker		5/1924
1934	Manual of Standard Signs, Markers, and Pavement Marking		7/1934
1943	Ohio Manual of Uniform Traffic Control Devices		1943
1952	Ohio Manual of Uniform Traffic Control Devices		3/1952
1956	Ohio Manual of Uniform Traffic Control Devices		4/1956
1962	Ohio Manual of Uniform Traffic Control Devices, Supplement (Part 7 reprint) (Using Journal Entry system to record Director's "approval.")	Vol. 47: pg 885; dated 8/27/62	8/27/1962
1963	Ohio Manual of Uniform Traffic Control Devices	Vol. 48: pg 770; dated 9/19/63 Vol. 52: pg 151; dated 3/3/67 Vol. 53: pg 108; dated 2/5/68 Vol. 54: pg 873; dated 9/15/69 Vol. 56: pg 174; dated 2/19/71	9/19/1963 3/25/1967 3/29/1968 10/31/1969 3/15/1971
1972	Ohio Manual of Uniform Traffic Control Devices for Streets and Highways — transition period from 1963 Edition to 1972 Edition; there was an overlap during this period between the two manual editions. The 1975 revisions were distributed together on 7/1/1975.	Vol. 56: pg 997; dated 11/17/71 Vol. 57: pg 379; dated 4/13/72 Vol. 58: pg 179; dated 3/5/73 Vol. 58: pg 788; dated 8/3/73 Vol. 59: pg 1078; dated 11/1/74 Vol. 60: pg 311; dated 3/31/75 Vol. 60: pg 263; dated 3/13/75	1/3/1972 5/31/1972 4/25/1973 9/10/1973 11/1/1974 3/31/1975 7/1/1975
1972	Ohio Manual of Uniform Traffic Control Devices The 1976 and both 1977 revisions were distributed together. The 1992 revisions were distributed together on 7/27/1992.	Vol. 61: pg 817; dated 8/11/76 Vol. 62: pg 739; dated 6/27/77 Vol. 62: pg 1081; dated 9/19/77 Vol. 64: pg 642; dated 6/27/79 Vol. 67: pg 752; dated 7/16/82 Vol. 71: pg 1085; dated 11/14/86 Vol. 75: pg 7; dated 5/22/90 Vol. 76: pg 3; dated 10/1/91 Vol. 77: pg 1; dated 7/7/92 Vol. 77: pg 1; dated 7/21/92 Vol. 79: pg 1; dated 6/6/94 Vol. 80: pg 14; dated 6/22/95	9/1/1976 7/1/1977 11/3/1977 10/1/1979 9/7/1982 2/1/1987 7/9/1990 10/1/1991 7/7/1992 7/27/1992 8/1/1994 8/14/1995

	(Journal Entries no longer used. Transmittal letter constitutes the Director's "approval.")	Vol. 81: pg 1; dated 9/10/96 Vol. 81: pg 1; dated 9/16/96 Adopted by Director 4/15/99	9/10/1996 1/1/1997 6/1/1999
2003	Ohio Manual of Uniform Traffic Control Devices, 2003 Edition	8/1/03	9/1/2003
2005	Ohio Manual of Uniform Traffic Control Devices, 2005 Edition Revision 1 Revision 2	12/1/05 December 23, 2009 March 18, 2011	12/22/2005 1/15/2010 4/15/2011
*2012	Ohio Manual of Uniform Traffic Control Devices, 2011 Edition	1/13/2012	4/12/2012
**11th Edition	Ohio Supplement and Federal Manual on Uniform Traffic Control Devices (11th Edition)	1/14/2026	1/16/2026

* Updates/revisions to 2012 OMUTCD are documented via the Known Errors Document. See archived version of 2012 OMUTCD for Known Errors documentation.

** With the release of the 11th Edition of the MUTCD, ODOT transitioned from a stand-alone OMUTCD to use of the Federal MUTCD with the Ohio Supplement.